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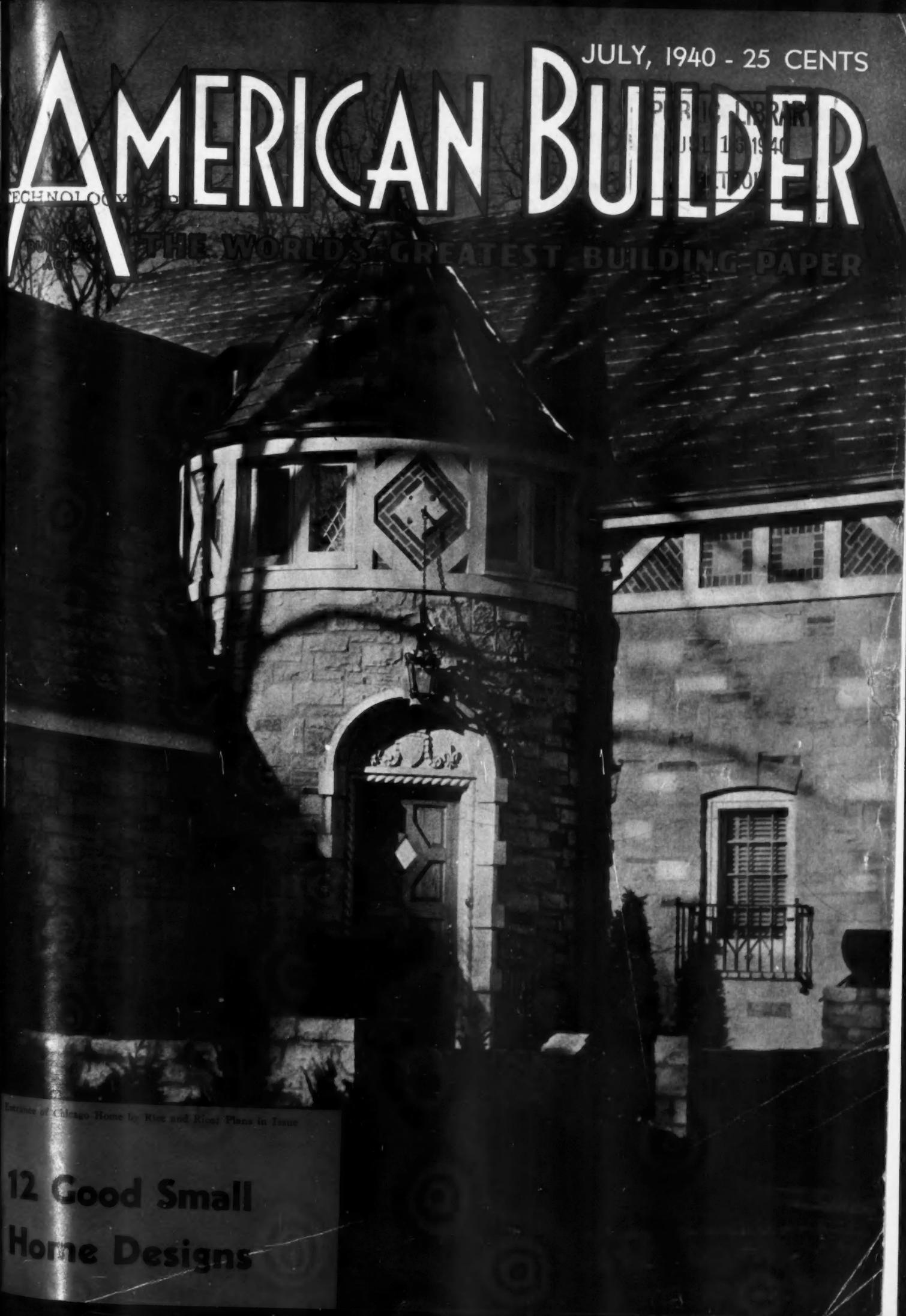
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JULY, 1940 - 25 CENTS

# AMERICAN BUILDER

TECHNOLOGY OF BUILDING  
THE WORLD'S GREATEST BUILDING PAPER

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Entrance of Chicago Home by Rice and Rice Plans in Issue

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*Costs Less...*



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AT THE TIME  
THE HOUSE IS BUILT!**



*Celotex Vapor-seal Sheathing reduces heat loss through sidewalls of this 6-room home in Evanston, Ill. Philip West, Architect.*

**U**NINSULATED sidewalls waste heat. According to figures in *House Beautiful's* new building manual, about 29.6% of the heat loss from an uninsulated house is through the sidewalls. Yet *this loss costs less to stop* than any of the other major heat losses—because Celotex Guaranteed Insulation *replaces* other structural materials.

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

(A Simmons-Boardman Publication)

# AMERICAN BUILDER

and Building Age

NAME REGISTERED IN U. S. PATENT OFFICE AND CANADIAN REGISTER OF TRADE MARK

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62nd Year Vol. 62, No. 7

AMERICAN BUILDER and BUILDING AGE, with which are incorporated National Builder, Permanent Builder and the Builder's Journal, is published on the first day of each month by the

SIMMONS-BOARDMAN PUBLISHING CORPORATION, 105 WEST Adams Street, Chicago, Illinois. New York Office: 30 Church Street

WASHINGTON, D. C. National Press Building  
SEATTLE, WASH. 1038 Henry Building  
SAN FRANCISCO, CAL. 485 California Street  
LOS ANGELES, CAL. 530 West Sixth Street

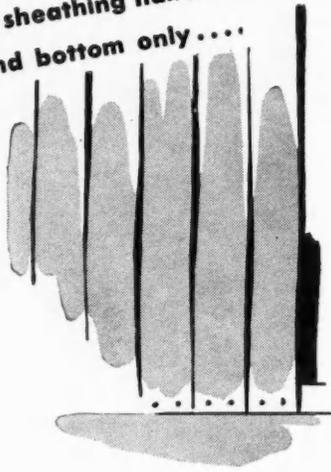
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Subscription price in the United States and Possessions and Canada, 1 year, \$2.00, 2 years, \$3.00; foreign countries, 1 year, \$4.00, 2 years, \$7.00. Single copies 25 cents each. Address H. E. McCandless, Circulation Manager, 30 Church Street, New York, N.Y.

Member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.) PRINTED IN U.S.A.

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You know what would happen  
to sheathing nailed at the top  
and bottom only . . . .



## DOORS need a Middle Support, too

The third butt holds the door in alignment, prevents warping, keeps the latch and lock working smoothly.

Interior doors, being lighter than exterior doors, warp more quickly—cause no end of trouble.

It costs more to fix one warped door than to put the third butt on every door. The Stanley Works, New Britain, Conn.



# STANLEY

TRADE MARK

# PUBLISHER'S PAGE

## A Warning from France

**H**ITLER now rules most of Europe, including France; he is attacking Great Britain; and the United States, with the unanimous backing of public sentiment, is beginning a mad rush to arm.

While Hitler was preparing Germany for war by forcing everybody to work long hours and produce to the utmost, France for some years had a "popular-front" government that followed the same policies as the New Deal in the United States. After Daladier and Reynaud became Prime Minister and Minister of Finance when France was face to face with war they made in November, 1938, to the President of France a report from which the following quotations are taken:

"It is impossible at one and the same time to continue the armament policy imposed upon us by the international situation and also a policy of great public works. No country can engage in such a gamble without deliberately sacrificing the welfare of the working masses.

"\* \* \* The economic question is predominant. \* \* \* Public expenditure has multiplied, and this multiplication of expenditure cannot be explained by the armaments race alone, for it is antecedent to it and has not fallen off since. Actually, that part of the French population which creates wealth \* \* \* is continually diminishing, while that part which \* \* \* lives on the State is ceaselessly growing.

"If the country wishes to rehabilitate its position, it will have to produce more in order to maintain its standard of living. That everyone should work more and that the State should spend less—for ourselves, we see only this formula for salvation. \* \* \* In 1936 (under the 'popular-front' government) the hope was to increase the purchasing power of the masses. \* \* \* The gravest failure, from which the others follow, has been the persistently low level of production. \* \* \* Industrial production in 1938 is at a level 25 per cent below that of 1930. Railway carloadings are 35 per cent less. \* \* \* In England production has risen to 20 per cent and in Germany to 30 per cent above the 1930 level. \* \* \* The index of building activity (in France) has fallen by 40 per cent, while in Germany it has risen by 35 per cent, and in Great Britain by 100 per cent. This is particularly alarming. While France has stopped building, the English countryside is being covered with new houses. \* \* \*

"If production is insufficient, it is primarily because its possibilities of development have been paralyzed. The forty-hour week \* \* \* limits our capacity to work.

\* \* \* The real spirit and willingness to take risks have been weakened. \* \* \* For four years the State has absorbed the whole of our national savings, mainly for unproductive purposes. \* \* \* Tomorrow, if we do not succeed in achieving a real increase in the production of wealth in France, we shall be unable to prevent the purchasing power of the working class \* \* \* from being indefinitely reduced.

"\* \* \* The problem then is not to choose between preserving or repealing the recent social reforms. \* \* \* The problem is to prevent them from automatically dwindling to nothing \* \* \* to prevent employers and employed, in a country which is still poor, from having nothing to share but poverty. \* \* \* The national economy must be released from the strangle hold of restrictive regulations, and the suppleness, which is indispensable to its free movement, must be restored. \* \* \* The five-day week of eight hours per day \* \* \* has the enormous disadvantage of rendering machinery idle for two days out of seven. \* \* \* If our production is to be increased by 30 or 40 per cent, how can this be done without an increase in working hours, given the fact that production could only be increased by 6 to 8 per cent if unemployment were completely eliminated? \* \* \*

"The State must do its utmost to restore the doctrine of risk and profit as well as that of work and output. \* \* \* The important problem today is to restore flexibility to our hamstrung economy and to give it every chance to expand."

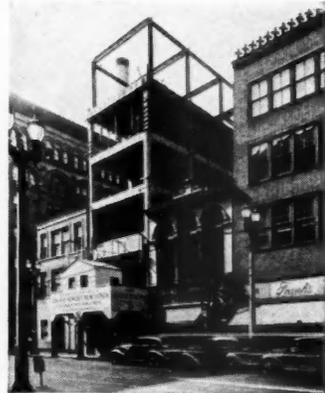
**T**HE foregoing quotations from the Daladier-Reynaud report to the President of France written almost two years ago (1) present almost a perfect picture of the conditions now existing in the United States, and (2) set forth exactly the policies that must be adopted in the United States if this country is to maintain the standard of living of its people, and in addition make adequate preparations for national defense.

France has fallen largely because it did not adopt these policies soon enough. Will we adopt them soon enough, or continue the "gamble" of huge government expenditures on both armament and public works; of continuing policies that restrict production—and thereby "prevent employers and employed \* \* \* from having anything to share but poverty?"

*Samuel O. Dunn*



# WHAT PRICE FORM SETS?



**FIGURE 'INCOR' SAVINGS  
THIS QUICK, EASY WAY**

**ADD LONG-TIME DURABILITY  
TO FIRST COST ECONOMIES**



**QUALITY PAYS . . . INSIST ON 'INCOR'**

'Incor' 24-HOUR Cement means just what the name says—uniform, dependable 24-HOUR service strength. AND LONG-TIME DURABILITY, TOO—proved by 13-year performance record . . . a vital advantage EXCLUSIVE with 'Incor', the FIRST high early strength Portland Cement. Quality pays . . . because better cement makes better concrete.

THE faster forms can be re-used, the lower the cost per floor or per cubic yard of concrete. But early form removal depends upon the amount and kind of cement used, and that introduces the factor of total cement cost. Time costs also have to be considered—for the sooner a job is completed, the lower the job overhead charged against it.

So it boils down to this: Find the erection schedule which shows the LOWEST OVERALL COST—taking time, forms and cement into consideration. It doesn't take much figuring, and it often saves a lot of money. Witness the fact that on recent jobs dependable 'Incor' high early strength saved from 38¢ to \$1.96 per cu. yd. of concrete.

And on jobs on busy city streets, like the new building in St. Louis for the Singer Sewing Machine Company, shown above (Klipstein & Rathmann, architects; W. J. Knight & Co., structural engineers; Gamble Construction Co., contractors), 'Incor' concrete placed one day, permits off-street storage of materials the next. That saves cost of planking or other temporary expedients. Get details of 'Incor'\* savings—write for copy of "Cutting Concrete Costs." Lone Star Cement Corporation, Room 2229, 342 Madison Ave., New York.

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

# AMERICAN BUILDER

## AND BUILDING AGE

### A Program for Industrial Housing

Private local builders best equipped to meet need promptly

THE world shattering events of recent days in Europe have immensely expanded our American program of national defense. This program is so vast it must have a powerful effect on American industry and on housing. Expert Washington observers predict that four, five or possibly six billion dollars will be spent annually for the next five years even if this country does not go to war.

The entire industrial plant of this country is rapidly being mobilized in a tremendous national defense effort. What part can home builders and the building industry play?

As new plants are built and old ones opened, and additional thousands of employees rehired in industrial communities all over the country, there will undoubtedly rise a need for much additional housing. But instead of calling this "housing," let us say instead that American workers with better jobs will be in need of better homes. *American Builder* believes that the providing of better homes for industrial workers can best be done by the private building industry working through the normal channels of business. There are indications that the United States Housing Authority, looking around for something to do in view of the fact that its present program is limited, would like to take over industrial housing. *American Builder* sees no excuse or reason for considerable activity by a governmental agency of this kind, and it sees many reasons why industrial housing, like most of the national defense program, should be handled by private industry.

#### Look Before We Leap

Before rushing into any government program of housing, thorough study should be made of the new conditions that prevail. Members of the National Defense Commission have indicated that new industrial plants involved in the defense program will be decentralized as far as possible and spread over the country to avoid local labor shortages. The use of the automobile has greatly extended the distance which workers can travel from home to plant. It is entirely possible today for workers to live 10, 20 and possibly 30 miles away from their place of work.

This means that homes for defense workers need not be built in the shadow of industrial smokestacks. They can and should be built in established communities al-

ready adequately equipped with schools, public services and utilities. They can and should be well planned homes of permanent value, built by private builders working through the regular channels of industry in cooperation with the Federal Housing Administration.

That study is being given to industrial housing needs is evidenced by the fact that Miles Colean, well known for his effective work with FHA, who recently embarked on a program of housing research for the Twentieth Century Fund, has agreed to spend temporarily all of his time on a study of industrial housing in light of the new defense program. The Central Housing Committee in Washington, made up of representatives of the various government agencies concerned with housing and financing, is also studying the subject. To them this publication earnestly recommends the following:

#### 4-Point Program

1. Make use of the organized, experienced factors of the building industry in formulating an industrial housing program. The National Small Homes Demonstration and its newer associated body, the National Homes Foundation, which have strong regional support by dealers and builders, should be called on and the work utilized which has already been done in perfecting designs and plans for low-cost homes.
2. Except in the few cases where temporary housing is required, permanent low-cost homes in established communities within commuting range of industrial plants should be constructed. These should be built and sold by the private building industry under the FHA program and should be planned to be of permanent value to the community.
3. In the few places where temporary plants are built and temporary housing is required, such housing should consist principally of barracks or dormitories, financed under the same loan as the plant itself, to be written off and eliminated when their purpose has been served. Temporary housing of this kind should be what its name implies—quickly built and temporary in nature. There are certainly no sound reasons for the U. S. Housing Authority's going into this type of construction. Such can most efficiently be done by private building firms—possibly the same ones that do the plant construction.
4. Consideration might be given to a plan whereby an industrial firm foreseeing a shortage of homes in its

community might sponsor a local FHA-supervised low-cost home community. A plan might be worked out whereby the industrial firm would supply part of the equity required to build these homes, and such equity might be charged off as part of the cost of the plant construction and included under an RFC loan. Houses in such a community would be sold under the usual FHA amortized loan procedure, but possibly on a shorter period of time.

Certain it is that a way can be found to encourage and stimulate the private construction of low-cost homes in or near industrial communities that will be affected by the national defense program. The necessary surveys to determine where housing is needed and how it can best be accomplished should be conducted at once. Private builders with long experience and the ability to get things done quickly and efficiently can meet any need in ample time. The building industry of the nation has an almost unlimited capacity. While there is no probable shortage of materials involved in small home construction, there is a possible shortage in the materials of heavy construction involved in large projects. Steel is one of these. And the indications are that builders of small houses will experience less delay in obtaining materials than those requiring large amounts of structural steel.

The builders of the nation can best serve the defense program by continuing to do what they have been doing in the past year—building more and better small homes in the lower-priced brackets within reach of the average industrial worker. With full-time jobs, higher wages and the assurance of continuing employment ahead, the average worker today will not be hard to convince as to the soundness of investment in a small home financed on monthly payments less than he would have to pay elsewhere for rent.

\* \* \*

### Income Tax Favors Home Owning

WE quote below an editorial in the "Chicago Tribune" of June 10. It presents a valid sales argument for home-owning which building industry men should be using.

"Real estate men have long insisted that it is cheaper to own a home than to pay rent. The new income tax bill, if it becomes a law, will strengthen their argument. A large share of the cost of home ownership consists of property taxes and interest on the mortgages. Both may be deducted in their entirety in arriving at net income subject to the federal income tax.

"If a home owner can use a large portion of his shelter cost as an income tax deduction and a renter has no corresponding privilege we may expect home ownership to become increasingly popular. This line of reasoning will no doubt have some appeal to the 8 million persons in the lower income groups, who will become taxpayers as a result of the proposed lowering of exemptions. But to thrifty persons in the income group ranging from \$4,000 to \$50,000 the boost in surtaxes of as much as 50 per cent will make of the well-mortgaged-owned house a well-nigh irresistible attraction."

### Birthday Greetings to FHA

THE Federal Housing Administration observed its sixth birthday on June 27, with nearly \$3,500,000,000 of home and property improvement financing insurance written during its operation. This insurance includes: \$2,295,000,000 in premium-paying mortgages on small homes; \$120,000,000 in premium-paying mortgages on large-scale projects; \$1,075,000,000 in property improvement and modernization loans.

These funds were advanced by more than 10,000 private lending institutions located in every part of the country. They were advanced for bettering the housing conditions of more than 12,000,000 persons—a number equalling the combined population of 18 states.

"As we celebrate our sixth birthday," Stewart McDonald, Federal Housing Administrator said, "we are ending the most active six months in our history. During both April and May the new-home applications numbered around 20,000 and exceeded \$100,000,000 in amount, while May also was the most active month ever recorded under the FHA program for homes started under its inspection. Preliminary estimates for June indicate another \$100,000,000 month, with another 20,000 new houses added to the supply of owned homes."

\* \* \*

### The Economy of Quality

ALL segments of the building industry can do the public a valuable service if they will strive to spread the gospel of the economy of quality.

The objective in construction should not be how cheap, but how good.

There is a vast difference between low costs and low prices. For materials, equipment or service that carry the lowest prices may, and in all likelihood will, in the end be the most costly.

We all are aware of the fact that criticism of the building industry not infrequently springs from the evils of cheap construction.

The jerry builder and all his ilk are the arch enemies of the whole construction fraternity. Cheap houses that soon reveal signs of falling apart, cheap materials that become obsolete almost immediately, cheap labor which simply makes a mess of most of the jobs it undertakes—these are among the real enemies of honest industry in the construction and building materials fields. Unceasing war must be waged against them.

It is unfair to allow the public to be victimized by the false doctrine that things that are cheap are the least costly. All of us who are in any way affiliated with this great and honorable vocation, whether we be contractors, dealers, architects, financiers, manufacturers, building editors or artisans, have a solemn obligation to perform in giving the public the full advantage of our expert knowledge.

There are great traditions in the building industry that ever must remain inviolate.

There is no real economy in the shoddy and the tawdry even though the price may seem low.

### Breakfast Bar

OPEN →

THIS breakfast bar with glass mirrored doors separates dining area and kitchen. Cabinet above counter is enclosed in sliding panels of fluted glass.



Bar Closed with  
Mirror Door



WITH mirror doors closed, breakfast bar becomes an attractive glass wall cabinet reflecting light and view of the dining room.

## Miami's Wonder House

New Ideas in Materials and Planning  
Demonstrated in "New Design for Living"  
by Greater Miami Building Corp.

**M**EN have been talking about glass houses ever since someone invented that famous adage about throwing stones, but until recently glass houses have been merely a figure of speech. Nevertheless, home owners have been trying to obtain more light and air in homes ever since log-cabin days, when the only windows were small openings in the walls over which were stretched thin hides.

The trend toward a "new design for living" was given impetus recently in Miami, Fla., with opening of a group of new small homes for public inspection. Built by The Greater Miami Building Corporation, from plans by Architect William Green, the demonstration home pictured with this article illustrates many new and interesting ideas and shows the utility and beauty of some of the more modern structural materials.

Boasting two and a quarter times as much glass in win-

dows and door openings as the average house in the \$5,500-price class, these "new design for living" homes have an atmosphere of spaciousness and luxury that belies their actual cubic-foot size and cost.

That was the consensus of more than 600 architects, builders and contractors—and some 3,000 of the home-conscious public—who previewed the Miami homes. In addition to the unusually generous glazed areas, the homes make extensive and skillful use of mirrors to add "apparent" size to rooms and to reflect outdoor vistas through the wide windows and doors. Thus they achieve the long-desired effect of "bringing the outdoors in."

Among the many average-home innovations that were incorporated in these homes, and that raise them above the nation's "average" standards of small-home luxury, are sliding glass walls, indirect lighting, noiseless electric switches, and delayed switches that automatically shut off



LOW roof, attractive latticing and new type windows lend interest to the Miami demonstration home. TruCost figures appear on page 104.

entrance lights 40 seconds after occupants have departed.

The most unusual feature of these houses is their employment of glass to do both a functional and a decorative job. This includes wider-than-average windows and doors, advantageously placed plate glass mirrors, and decorative patterned glass for windows and decorative details.

The use of a large plate glass mirror over the mantel of the wood-burning fireplace serves both to magnify and lighten the living room. Added beauty is achieved through use of peach-colored plate glass mirrors as backings in the bookcases flanking the fireplace. One of the most distinctive features of the homes is that, throughout, many glass refinements customarily available only as "accessories" are built in as "standard equipment."

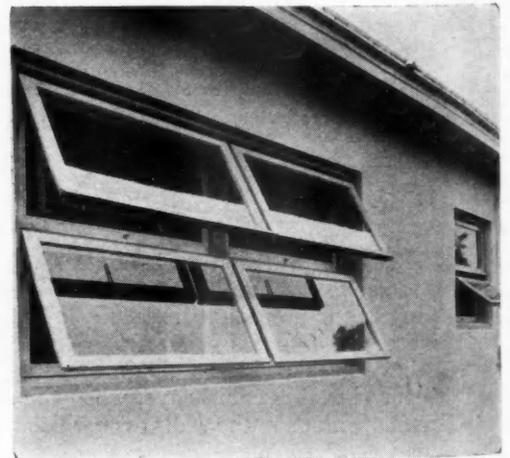
The dining room makes good use of glass in two ways:

an eight-foot panel of double-paned directional-pattern fluted glass floods the room with light without visibility; and, separating the dining area from the efficient kitchen is a little "breakfast bar" fitted with a pair of mirrored doors. Above and below this bar are cabinets with fluted sliding glass doors.

In bedrooms, windows whose broad individual sections swing out and up permit maximum air circulation and yield maximum light. The backs of bedroom entrance doors are covered with built-in full-length plate-glass mirrors.

Striking color effects are created in the bathrooms through use of sparkling Vitrolite structural glass as wainscoting. This material has the advantage of being stain-resistant and of maintaining its new appearance.

Floor plan of the model home illustrated has a number



LIGHT, air and spaciousness are achieved through the open nature of this plan, which calls for extensive use of mirrors, glass doors and large window areas. Shown above are new "awning" type windows permitting precise control of ventilation.



LIVING room has a spacious air, due to mirrors over fireplace, large fluted glass windows and sliding doors.

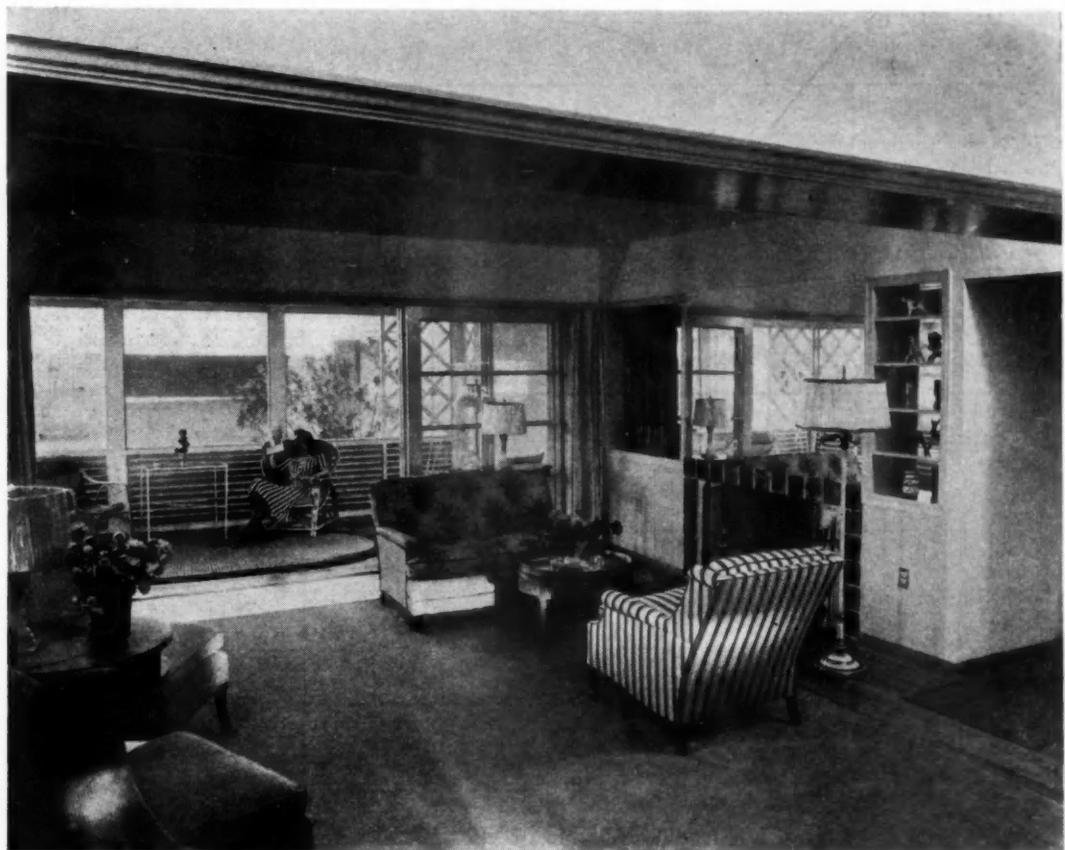
of practical and interesting features. One of these is the open garage, one end of which acts as a porch cover for the service entrance. At the opposite end of the house is a spacious covered porch with an attractive latticed detail and louvre-type enclosure that permits circulation of air. The living and dining room area of the house can be opened into one large room or separated by draw curtains. The full-length sliding glass doors between the living room and porch constitute a feature of unusual value in the southern climate, and when they are open make the

porch and living room into one large outdoor room of great spaciousness and comfort. The kitchen has a conveniently placed larder close to the dining entrance.

Among those who inspected the homes were Milton K. Moore, deputy administrator of the Federal Housing Administration in Washington; Morman Parrish, Florida state FHA director; and Chauncey Butler of Miami, the district FHA director. Mr. Butler summed up their reactions with the statement that the houses' features were "entirely unique, but at the same time intensely practical."

### It's Done with Mirrors

PLATE glass mirrors push back the walls and make this living room look much larger than it actually is. A clear plate glass mirror is mounted over mantel and peach-tinted mirrors back the bookcases.



# Who Will Be the BUILDING CRAFTSMEN OF TOMORROW?

By J. Douglas Wilson

Head, Building Trades Dept., Frank Wiggins Trade School, Los Angeles, California

MUCH thought is given today to modern methods of construction, the application of new materials to new methods, economies that can be made through efficient planning and organization, and the need for doing these things in order that building costs may be held down to a minimum commensurate with good construction and good work, so more people can enjoy good housing facilities, even though their income may be a limited one. But, little thought and attention has been given to the group of skilled craftsmen who actually execute the jobs; who drive the nails, cut the pipe, put on the plaster, paint the surface, lay the bricks, set the tile, set up the mill machinery, and do other countless skilled operations and jobs.

And yet, without skilled workers to do actual construction and decorative work, our homes could not be built; neither would we have schools, libraries, modern skyscrapers, stores and all types of building which, in large measure, are the basis for measuring the progress of our civilization.

### Craftsmen of Today

What do the building trades craftsmen of today look like in terms of age, skill and race? The 1940 census will give some up-to-date information to be sure, but there is much authentic information available amply supported by

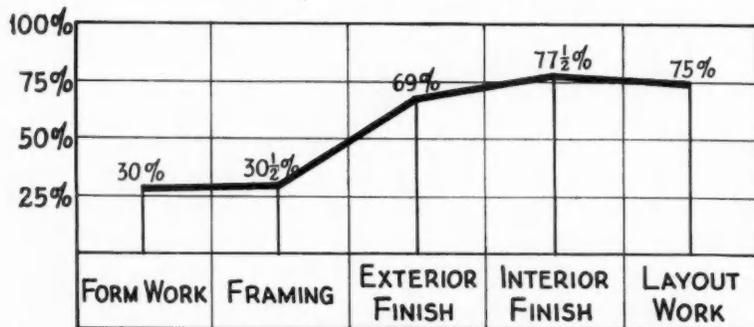


CHART I: VERTICAL LINES INDICATE PER CENT OF APPRENTICE CARPENTERS THAT NEED JOB TRAINING IN CLASSIFICATIONS LISTED

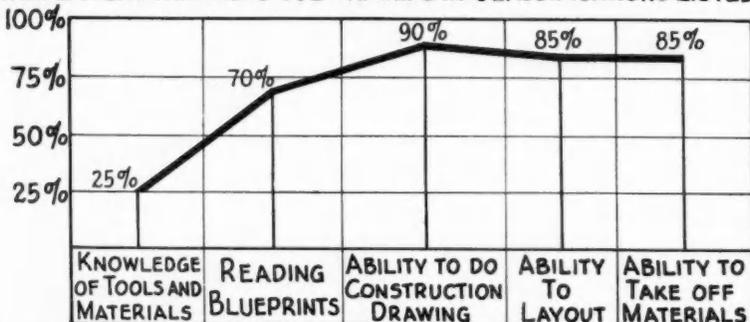


CHART II: VERTICAL LINES INDICATE PERCENT OF APPRENTICE CARPENTERS THAT NEED SCHOOL TRAINING IN CLASSIFICATIONS LISTED

the actual facts. If you were to hire an expert building craftsman today, you would find him to be over 45 years of age, and on up to 60 and 65 (as the building trades work is a very healthful occupation). Sixty-year old craftsmen, good as they are, hold their own on the finer skills of the trade, but naturally are not physically able to compete with younger men on the parts of their trade which require agility and activity.

Now ask one of these craftsmen where he was born, and one chance out of four is that he will be foreign born! That statement tells a story in itself when it is realized that this same foreign born craftsman learned his trade under a bona-fide apprenticeship system still in force in Europe today. The "old apprenticeship" dates back to the tenth century, and was the recognized educational system of that day. The young apprentice—only a boy, in fact—was bound out to his employer for seven years—starting out by sweeping the floor, running errands, cleaning up the shop, being the water boy on the job, and yet withal given an opportunity to learn the fundamentals of the trade soundly and surely. Gradually increasing in skill and knowledge, seven years later he faced the world as a skilled journeyman; having full knowledge he was, in fact, a *master craftsman*. From this environment have come to our shores 25 per cent of our present-day, skilled building trades workers.

The World War of 1914 affected our European labor market very materially. Skilled European craftsmen had a new kind of "job" to do. The immediate result was that immigration slowed down. In our own country the impetus given to many of our own industries resulted in high speed production programs with no time available to train the many thousands who were needed to produce the implements of war. And now twenty years later we see the result—skilled craftsmen are hard to find.

In 1924, Uncle Sam put up the bars by setting a quota system so that now we can no longer look to Europe to supply our skilled workers. The question is a natural one; craftsmen of tomorrow: Who and where from? A good question, too, with the skilled craftsmen middle aged and one out of four European born!

### The Apprentice of Today

Take a look at the apprentice of today. Are there any; how old are they; what training have they had; what opportunities for training or learning do they get on the job and is there a plan for training them?

Some young men have entered the construction industry in the past few years—not many, however, before 1935. During the depression period, no young men entered the building work.

CHARTS I & II at the left indicate the percentage of apprentice carpenters needing further training as listed.

**List of Manipulative and Technical Abilities Possessed by a Journeyman Carpenter.**

**I CONCRETE WORK**

- Build straight concrete forms for columns and beams
- Line up and brace concrete walls and columns
- Build curved concrete forms
- Construct forms for concrete stairway
- Lay out building lines
- Build forms for concrete cornices

**II FRAMING**

- Set girders
- Set floor joists
- Erect walls and partitions
- Line up and brace framed walls and partitions
- Cut rafters
- Build staging
- Set plaster grounds
- Lay out walls and partitions
- Lay out rafters
- Cut stairhorse for wood stairway
- Lay out stairhorse
- Lay out difficult rafters

**III EXTERIOR FINISH**

- Lay wood shingles, and composition roofing
- Cut and fit siding
- Lay out window and door frames
- Build frames
- Build cornice work

**IV INTERIOR FINISH**

- Lay pine floors
- Cut and fit base
- Cut and fit mouldings
- Set door jambs

- Case openings
- Fit and hang double hung windows
- Fit hardware and fastenings
- Fit and hang doors and casement windows
- Build casework
- Lay out casework
- Build stairs

**V KNOW AND RECOGNIZE TOOLS AND MATERIALS**

- Hardware
- Parts of building
- Tools
- Millwork
- Lumber
- Nails

**VI READ BLUEPRINTS**

- Recognize plan symbols
- Read: Plan views, elevations, sections, details

**VII DO CONSTRUCTION DRAWINGS**

- Foundations
- Framing details
- Exterior finish
- Interior finish

**VIII LAYOUT**

- Use builder's transit
- Layout: Buildings, walls and partitions and openings, common rafters, hip and valley rafters, jack rafters, stairs

**IX ESTIMATE MATERIAL**

- Foundation materials
- Framing materials
- Exterior finish materials
- Interior finish materials
- Hardware

The reason is not hard to find: no buildings; no work; therefore no apprentices. Young men definitely did not enter this industry for a period of several years. Today they are still *not* entering in large numbers for an entirely different reason. The newer occupations that have sprung up in the past few years—so well advertised, too, by private schools—have attracted thousands of young men. Airplane manufacturing; airplane mechanics and flying; air conditioning; refrigeration; Diesel engine operation—these have been played up as offering so much in the way of employment, advancement, steady work, and good wages that the old recognized trades of centuries standing seem so prosaic and lacking in romantic appeal, Young America has not been interested. Again, the question is pertinent: Craftsmen of tomorrow: Who?

A look at the ability and experience of apprentices now working at building jobs is very revealing. The two charts on opposite page illustrate the facts for carpentry. These facts were gathered by the simple expedient of asking a group of apprentices to evaluate themselves in terms of a list of units which a Carpentry Apprentice Committee set up as the experience which an apprentice must have if he is to become a journeyman. The list appears above.

The results of the self evaluation tests are pathetic and should be of great concern to contractors or employers. Chart I indicates job experience, which apprentices should have—and are not getting. Note that 69 per cent stated they needed training and experience in exterior finish work, 77½ per cent interior finish, and 75 per cent in layout work. Briefly stated, the situation is this: Employers keep apprentices on framing carpentry work and

lay them off or move them to another framing job when it is time to do finish work. Apprentices are begging for a chance to learn the finer skills but are forced to ask, "When will I get a chance to learn to do this kind of work?" Chart II, illustrating technical work, is equally revealing: 70 per cent cannot read blueprints; 80 per cent cannot do construction drawing work; 85 per cent cannot do layout work and 85 per cent cannot take off a bill of materials. And, these apprentices are already 2½ years along!

Don't be too hard on the apprentices; they ARE willing to learn; many do go to evening schools for study and work if and when building construction courses can be found (and all too frequently they *cannot* be found). But how can they even become skilled and well-trained craftsmen unless they are given a chance to actually learn the trade?

Fortunately, there is an answer.

**The New Apprenticeship**

The term "apprenticeship" is actually the application of the basic principles of the old apprenticeship of centuries ago, and which were lost due to the industrial revolution.

The building trades, still largely hand craft occupations, have been most active in the United States in keeping alive some form of apprentice training.

Our government became concerned when its agents reported a lack of skilled artisans in many different occupations, and in 1937 passed the Fitzgerald Act, setting

*(Continued to page 96)*

# New FHA Film, "Design for Happiness," Promotes Good, Small Homes

**T**HE problem of constructing small homes that combine efficient insulation and cheerful livability ordinarily restricted to dwellings costing three and four times as much to build, is met most interestingly in "Design for Happiness," a new Federal Housing Administration technicolor motion picture.

Sponsored by FHA and filmed by Pathe, the picture is being booked by theatres all over the United States, and arousing widespread public interest. It is estimated that it will be viewed by 12,000,000 people in 5,000 theatres.

"Design for Happiness" was developed to demonstrate the two most important forms of insulation—storm sash and attic insulation—and how larger window areas and the use of plate glass mirrors lift a small home to a new conception of enjoyable living, at very reasonable cost.

Filmed entirely in color with a Hollywood staff of players, and narrated by Lowell Thomas, it unfolds in entertaining fashion the story of a young married couple, Bill and Nancy Martin, and their natural yearning for a small home of their own.

FHA aimed the picture at the great mass market, as represented by those who must consider the type of house costing less than \$5,000 to build. Accordingly, the story is built around a young service station attendant, with an income between \$25 and \$30 per week.

The picture's opening shows the Martins, with their youngster and a clever little dog which adds much to the



ATTRACTIVE 2-color broadside now being distributed to create interest in the new FHA film, "Design for Happiness." Local building groups can easily get this picture into their local theatres; just write the nearest FHA office.

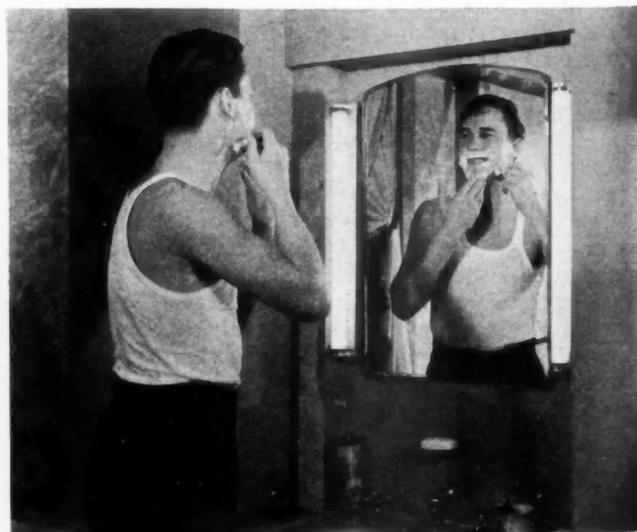


AFTER they had moved into their new home, in "Design for Happiness," Nancy really began to "live" for the first time. Now she had a full-length built-in door mirror. The builder had explained, at the very start, that such a mirror is stocked by the lumber dealer and that it was an excellent idea to include it as "standard equipment."

human touch in the handling of the film, in a typically cheap apartment. The wife wants to build, but her husband is convinced that it would be impossible to own an attractive home on his small income.

Nancy calls Bill's attention to an FHA radio broadcast one evening and from that point the picture develops rapidly to the point where Bill is convinced, signs a contract to build and actual construction on their home starts.

Carefully thought out months before production started on the movie, "Design for Happiness" holds to a simple,



BILL MARTIN, in "Design for Happiness," got a real kick out of shaving in his new FHA-financed small home when he discovered that the builder had included a plate glass mirror, well lighted on each side, as part of the bathroom. Quite a contrast to the small, cheap mirror he used to squint into in the old apartment.

pleasantly told story, amazingly convincing in its logic. The Martins are shown in their new small home—a picture window; storm sash all around; larger window areas throughout the house; a full-length door mirror and other touches where glass is utilized to brighten up the interior.

No prospective home owner can see it without becoming enthusiastic. And theatre owners who have booked the film are sending in the names of many patrons who have asked for further information.

The film demonstrates that every house should be insulated for comfort and fuel savings, and recommends storm sash and attic insulation as a minimum in small homes.

It is a picture that will help every builder to work out some excellent ideas in the construction of small homes which, by utilizing larger window areas and mirrors deftly, will increase their salability many times over the shack-garage type of dwelling seen too often in the outskirts of our cities and villages.

In producing the movie, FHA had the cooperation of the Libbey-Owens-Ford Glass Company and the Owens-Corning Fiberglas Corp. Distributors of their products are being kept advised of local theatre playing dates so that anyone caring to see the picture can make arrangements to attend any one of several theatres showing the feature in any particular city.

Every builder, after seeing "Design for Happiness" can design his own "package of glass" to incorporate into his housing program, feeling assured that he is taking advantage of a popular trend, one that is being assisted by a motion picture expertly produced and shown to his own prospects under ideal circumstances in the downtown and neighborhood theaters.

Conceived fundamentally to accelerate consumer interest in well-constructed small homes, the greatest building market in this country, "Design for Happiness" is one of the finest sales weapons yet created for builders everywhere.



NANCY MARTIN'S over-the-mantel plate glass mirror did wonders, she discovered, in brightening and enlarging the living room. In this scene from the FHA-sponsored technicolor film, "Design for Happiness," Nancy is shown in reflection through that mirror, watching Husband Bill and their youngster through the large sunny living room window, with its storm sash which adds so much cozy comfort to their home. Bill found, too, that it made a great difference in his fuel bills. And the builder found that such applications helped to sell his houses faster.



WHEN Bill and Nancy Martin, stars of the FHA-sponsored technicolor movie, "Design for Happiness," discovered they could build their own little home through FHA and have the most important minimum insulation—window conditioning and attic insulation—at a very reasonable cost, they watched the application of storm sash to their good-looking little house with more than ordinary interest. The builder had assured them winter windows would quickly pay for themselves in fuel savings.

WILMINGTON construction crews were rushed to meet demand for \$33 a month brick homes located near Du Pont plant.



## Better Homes for Industrial Workers

**How Wilmington Construction Company Builds and Sells Modern 6-Room Houses for Du Pont Employees "Cheaper than Rent." No Subsidies Needed**

**W**ITH billions being appropriated for national defense the question is frequently asked, "Can the private building industry take care of needed housing for industrial workers?"

The answer is emphatically, "Yes!" The building industry is in a better position today than ever in history to provide well-built, well-planned houses for industrial workers at a lower cost than they now are paying for rent.

Three outstanding factors contributing to low home costs and necessary to a successful program are:

1. 25-year amortized mortgages at low interest rates.
2. Efficient planning and building methods, using improved materials and power equipment.
3. Low taxes, heating and upkeep costs.

With these three factors accounted for, private builders

operating under the profit motive can produce modern, healthful, completely equipped homes for industrial and white-collar-class wage earners *without government assistance*.

There is ample proof that a tremendous market for houses that can be carried by the owners for from \$25 to \$40 a month exists, and the added impetus given to American industrial enterprise by the new defense program may result in a large-scale expansion of home building in this range.

### It Works in Wilmington

An outstanding example of the success of a private building firm in providing houses for industrial workers and white-collar employees is Edge Moor Terrace, a 400-



**Private Enterprise Can Solve the Problem of Low-Cost Homes for Industrial Workers, this Story Shows. Wilmington Builder Finds Huge Market for Well-Built Houses Costing Buyers \$33 a Month, Including Taxes. 125 Sold in Two Months**

**This Is an AMERICAN BUILDER Success Story of Vital Interest in Light of the New National Defense Program and Its Effect on Housing for Industrial Workers**

*By Joseph B. Mason*



**MASONRY WALLS** of brick and lightweight concrete blocks (16" x 8" x 4") are used in Wilmington houses as workers rush to catch up with advance sales.



CURVED STREET of substantial brick homes in Edge Moor Terrace nearing completion. Many Du Pont office workers were buyers.



STONE front model with bay window costs a little extra.

**Low Taxes, Efficient Building Methods, Long-Term FHA Mortgages Contribute to Low Cost of Wilmington Homes Near Du Pont Plant. Builders Plan to Erect 400 to Take Care of Expanding Industry**

home development on the outskirts of Wilmington, Del., near the recently built Du Pont plant. The Wilmington Construction Company, of which Howard A. Perkins is president, opened this new low-priced development last year in a modest way with a model home and an announcement in the newspapers. They planned to build 16 houses as a start, but when the crowds poured out in response to their announcement of a 6-room home that would cost less than \$33 a month to carry, they were forced to revise their plans sharply upward. They took orders and cash deposits for 67 houses before ground was broken. Approximately 125 sales were made in the first two months, and 80 per cent of the 125 were occupied within six months.

What was the reason for this phenomenal acceptance by the buyers of Wilmington and surrounding areas?

The answer lies in the fact that the total carrying costs of these houses were far less than the average rental being paid by workers and white-collar employees in the adjacent areas. Low taxes contributed a great deal. Edge Moor is just one mile outside of the Wilmington city limits, and the taxes on these houses amount to only \$2 a month. On the 25-year FHA financing plan, the total monthly cost of a typical house including taxes is less than \$33.

*(Continued to page 92)*



POWER equipment such as this fast sander helped speed the Edge Moor Terrace homes to completion and brought down costs.



FURRING strips were nailed directly to 4" lightweight concrete blocks. Note tie-in brick course every second block.



# How a Builder Makes His Houses Fit Pocketbooks

Groenevelt & Son, "Small Town" Builders in Michigan, Bring Homes Within Reach of All

By Jim Hawkins

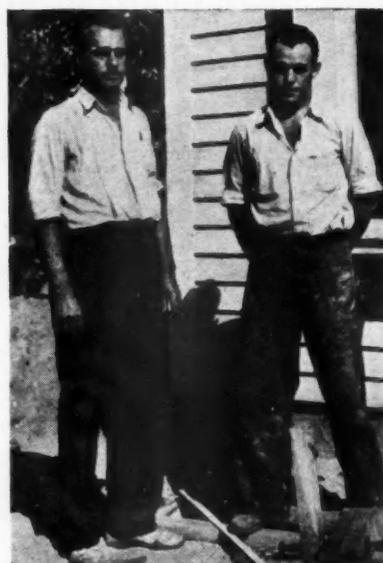
**G**ROENEVELT and his son, of Ferrysburg, Mich., are not unusual fellows as home builders go. The father, Dick, had his ups and downs during the depression. But the depression had many lessons, some of which the Groenevelts learned. The elder Groenevelt told the author, for example, "From now on, homes are going to fit the public's pay envelopes—not its ambitions. That is," he explained, "the price range must be down to where the little old pay envelope can handle the situation. And, you know," he went on, "pay envelopes can be pretty well analyzed by local investigation."

Mr. Groenevelt is perfectly right. It is easy to appreciate his reasoning. But, unlike a lot of builders who still think up in the thousands of dollars for a house, Dick and Russell Groenevelt have done something to back up the popular idea that the average family can really own its own home. These builders have actually brought the total cost of an appropriate and an attractive home down to the less than \$2,000 level. For their particular territory *their* house is the answer. It is, likewise, the answer for the entire western half of their state.

It's not so much the house itself (although the Groenevelts may disagree, seeing as how it's their house) as it is the fitting of the sale price of the home to the capacities of local pay envelopes to adequately handle the purchase thereof. That feature is what makes the Groenevelt's house so good, from a practical standpoint.

Here's the proof—in one sentence. One small-town newspaper page, consisting of editorial copy and co-operative advertising by material suppliers, drew throngs of people, sold the house for cash, and produced orders for five duplicates.

SHOWN at the right is the four-room Colonial house built in Ferrysburg, Mich., by Groenevelt & Son, which attracted widespread attention; sold immediately, the builder took orders for five more like it. Floor plan is shown directly opposite.



BUILDER Groenevelt and son pictured at the site of one of their homes.

In other words, it's the old story—make what people want and they'll go for it. And, by the way, it took two police officers to handle the crowd which came to see this little house in a village of five hundred people.

The Groenevelts built their house in Ferrysburg, Mich. This village is adjacent to a town of some 20,000 population—Grand Haven. It was the alert Grand Haven *Tribune* in which the publicity appeared about the house. There was a full page of publicity, consisting of editorial stories and advertising space, all devoted to the house.

The floor plan of the house meets home seeking desires. It is a basic plan and can be easily rearranged for a variety of exterior appearances or locations of building lots. This fact can be appreciated by studying the floor plans illustrated. Two bedrooms and complete bathroom are connected with a hall; there are five closets in this basic plan. The kitchen has ample dining space, facing the front. The living room is well proportioned, having adequate window area yet reserving wall space suitable for comfortable furniture placement. Utility necessities are housed by themselves in a space sufficiently large for storage, laundry and varying types of heating equipment, depending upon personal selection or the availability of suitable fuels.

TWO other Groenevelt small, low-cost homes nearing completion at right; they are variations of the basic floor plan as shown at the bottom of the page.

The three variations of the basic plan create a complete complement of living conditions to satisfy 85 per cent of today's home buyers. It's a lot of house for the money. In spite of the low sale price the house meets desired requirements for high-standard living. There is nothing missing. The owner can go away for a week or more in any weather, leaving the house to automatically run itself. This sales line alone will definitely interest families now living in cramped apartments or upper story quarters in otherwise private homes. Such families constitute the small home buyers of today.

These houses are constructed without basements. Nailing strips are set into a concrete slab and a finished wood floor is laid on top of the concrete. The interior walls of the first house are plywood. Others are covered with wallboard, while one is being plastered. Some are painted surfaces and others are papered. The heating methods also vary. The utility room is sufficient in size to accommodate central heating with radiators throughout the house. In some, the builder has put automatic oil or gas heaters in the living room.

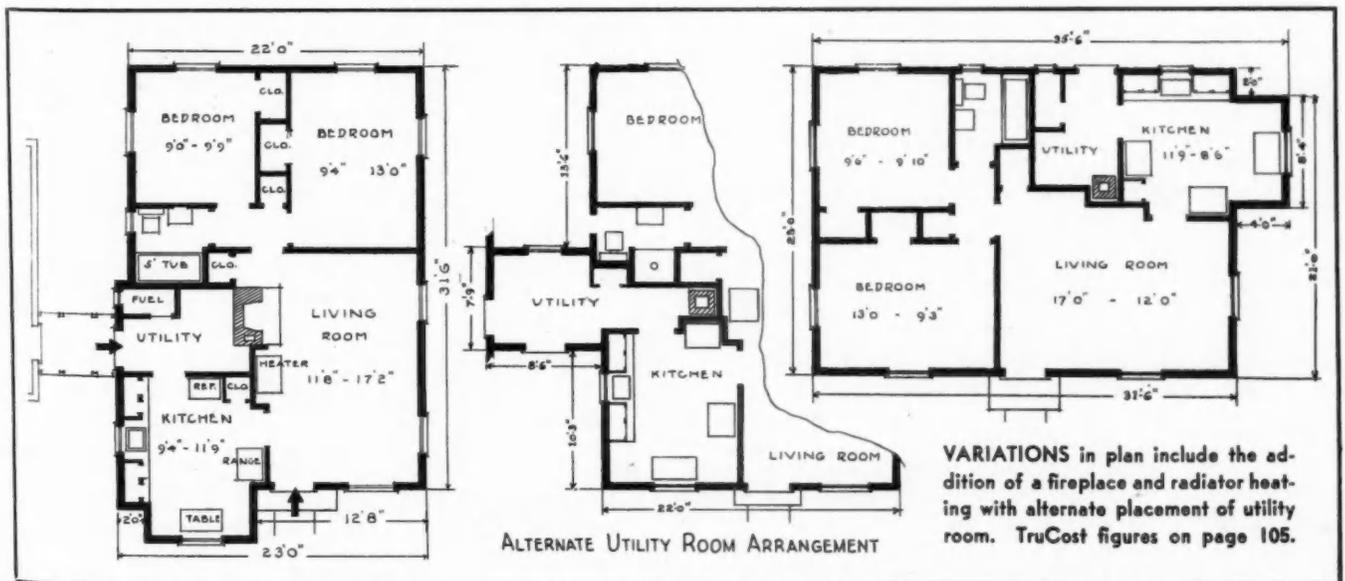
It is the main practical idea behind the Groenevelt houses which appeals to intelligent builders. Take this little house under consideration. Primarily it was built to fit local pocketbooks. It does just that. The cost of its conveniences and its equipment in general is suited to local buyers. And it has been kept in mind that getting the *basic* home is of first importance to these buyers of low-cost homes. Making the house as complete in conveniences as the "Apartment on the Avenue" is secondary. Make 'em what they want and can pay for, and you have a top-notch sales talk. The total price of such a house, remember, must be kept within definite limits dictated by the size of the pocketbook of the buyer you have in mind. A buyer's wages of, say, \$21.35 cannot be stretched to \$24.98. When an income is definite, any hopes on the part of a buyer for increased income must be discounted by the seller. Money from the old pay envelope consists of an exact amount of dollars and cents.

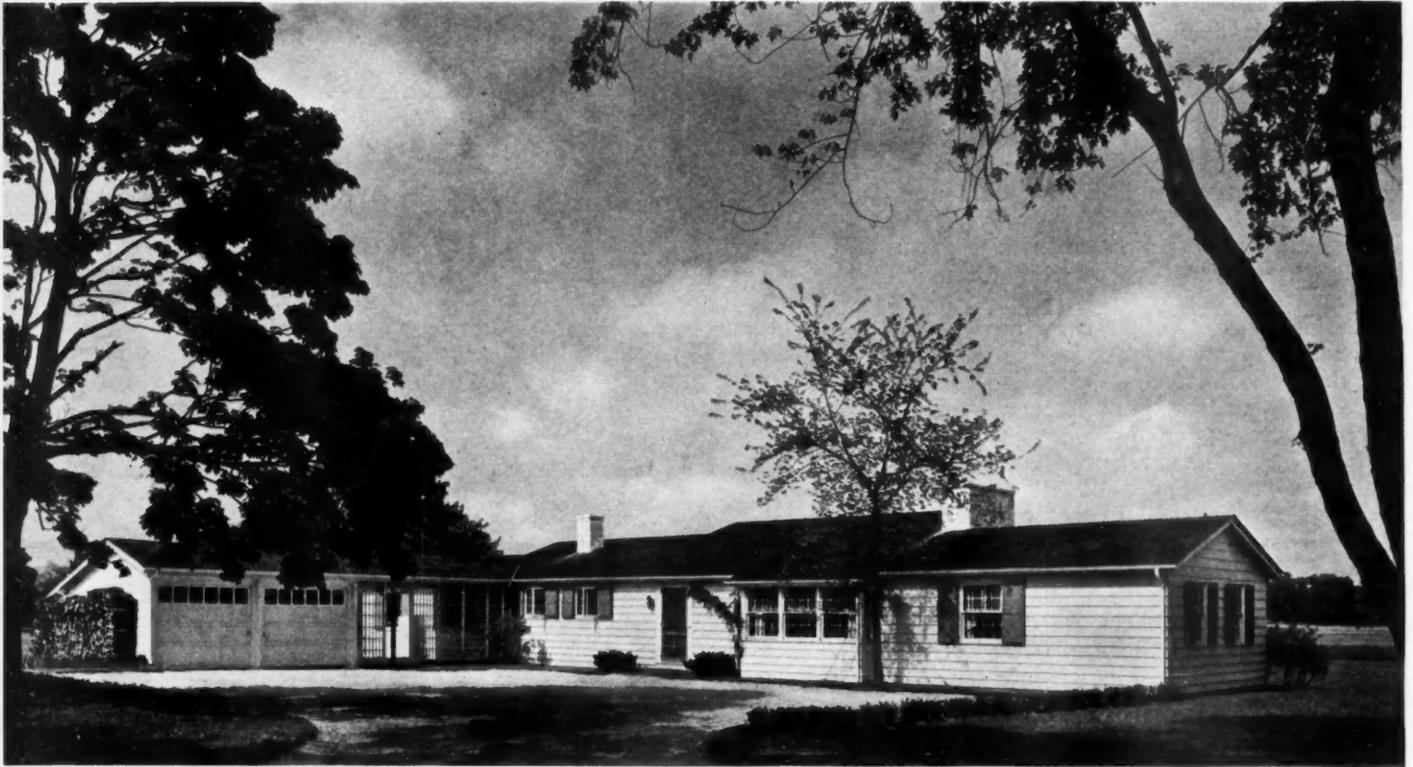


Reckon only with the money actually in the pay envelope. Shoot at *that* mark.

The locality should be studied, whether it's the middle of a city or the fringe of a small town. This providing of housing in America is no more a national problem than is the digging of potatoes in one's own garden. It's purely local—a neighborhood job.

All progressive builders will agree about the crying need for the building of small houses that home-wishing people can afford to buy. In addition, there comes the deep satisfaction of doing a job for the low-bracket families that can give them the best kind of social security for the rest of their lives. Just as the builder and the Christman Lumber Company concerned in the erection of this particular small house put into their advertisements in the *Grand Haven Tribune*: "NOW—Home Building Is Within Reach of All."



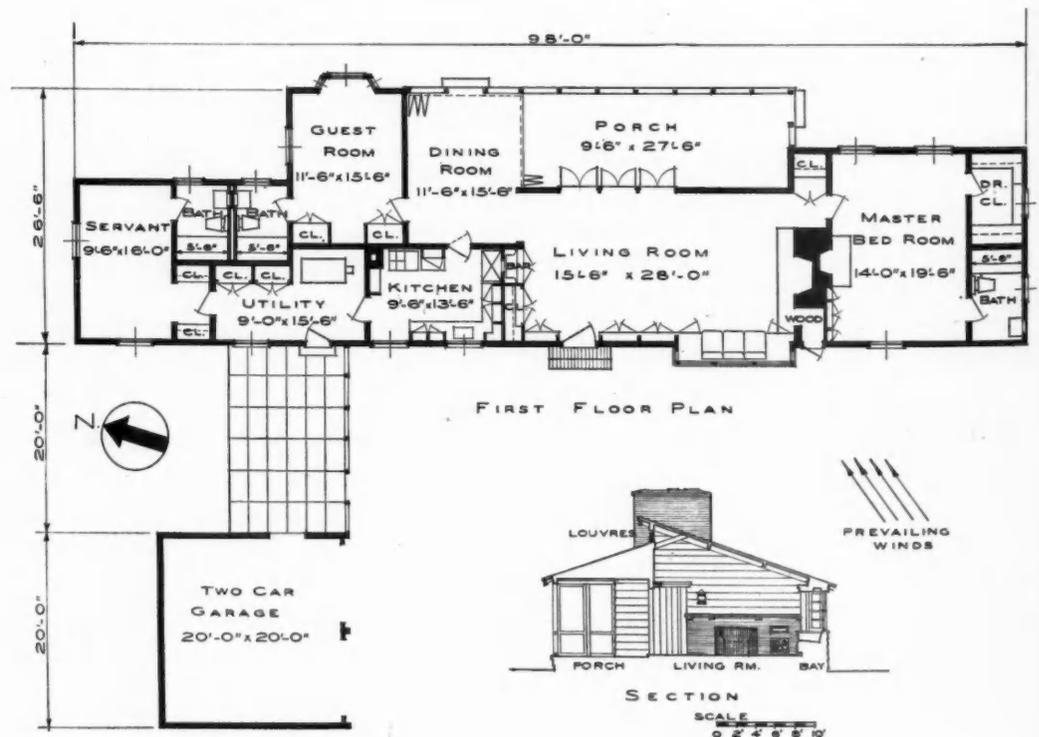


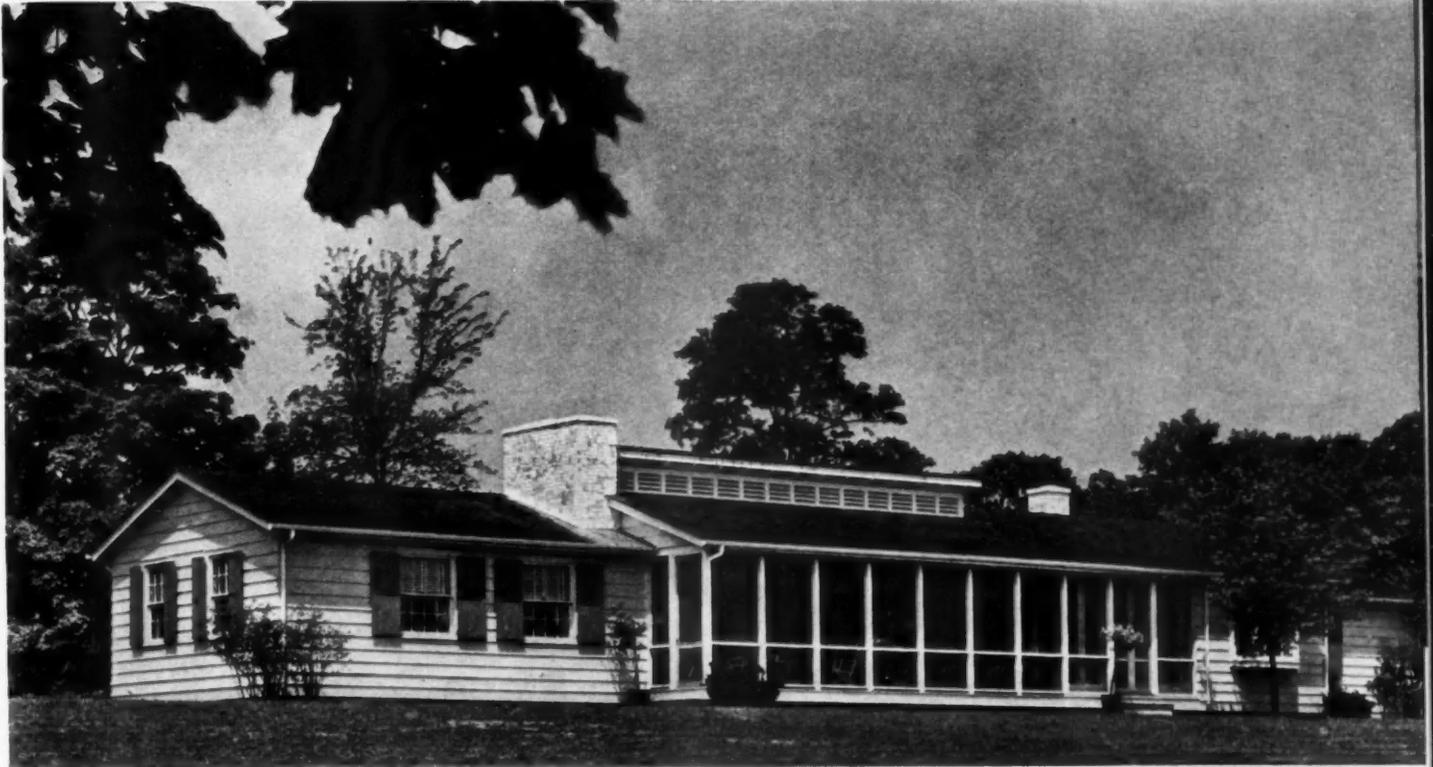
## Rambling Frame Summer Cottage

THIS long, low frame house has an unusually livable plan, with a broad porch overlooking a view of water and boats. It was designed by Moore & Hutchins, New York architects, and built by L. R. Marchant of Yaphank, N. Y. Interesting are the ventilating louvres designed so that prevailing winds will draw heated air out of upper part of living room. House is of frame construction, studs spaced 2 feet apart and wall heights 8 feet high to accommodate standard 4 by 8 panels of plywood and wallboard without cutting.

DINING room, living room and porch "flow together" in this plan to encourage informal, comfortable living.

MAID'S quarters, kitchen and utilities are completely separated from other parts of house as shown here.





Photos by Gottscho

THE long, broad porch is protected from sun by the overhanging roof. Folding glass doors permit dining room to be entirely open toward porch. The house has a livable, informal atmosphere and is used by the owners mostly during the summer, spring and fall. The fireplace, below, dominates the large living room, with built-in seats under the window. Interiors are largely exposed, consisting of

plywood, Masonite Presdwood, Idaho pine and U. S. G. Sheetrock. Other products include: Quiet May heating and air conditioning system, red cedar beveled siding, white pine sash trim and shutters, oak floors, Congoleum Nairn linoleum in kitchens and baths, Covert fireplace equipment, Pass & Seymour switches. It is an unusually well-laid out and comfortable home.



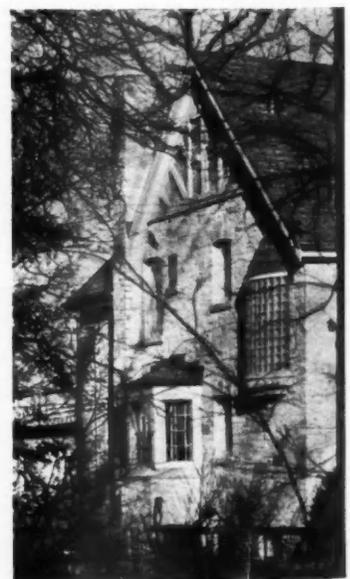
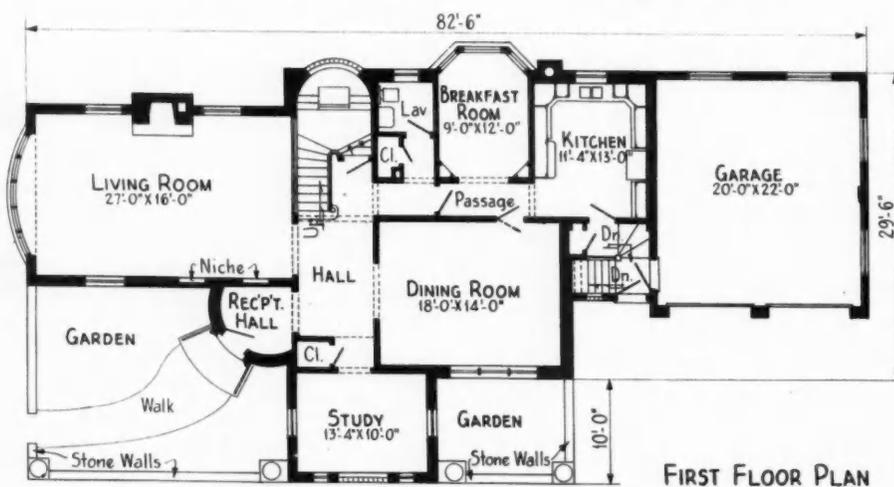
**Fireplace  
with  
Window  
Seat**



## Front Cover Design—A Study in Stone Detail

THE above front cover home in period styling and the extremely modern house on the opposite page were both designed and built by Rice & Rice of Chicago. They illustrate the versatility of this firm which operates over a large portion of the metropolitan Chicago area; in price, the range is equally broad. These homes were built in the Sauganash section.

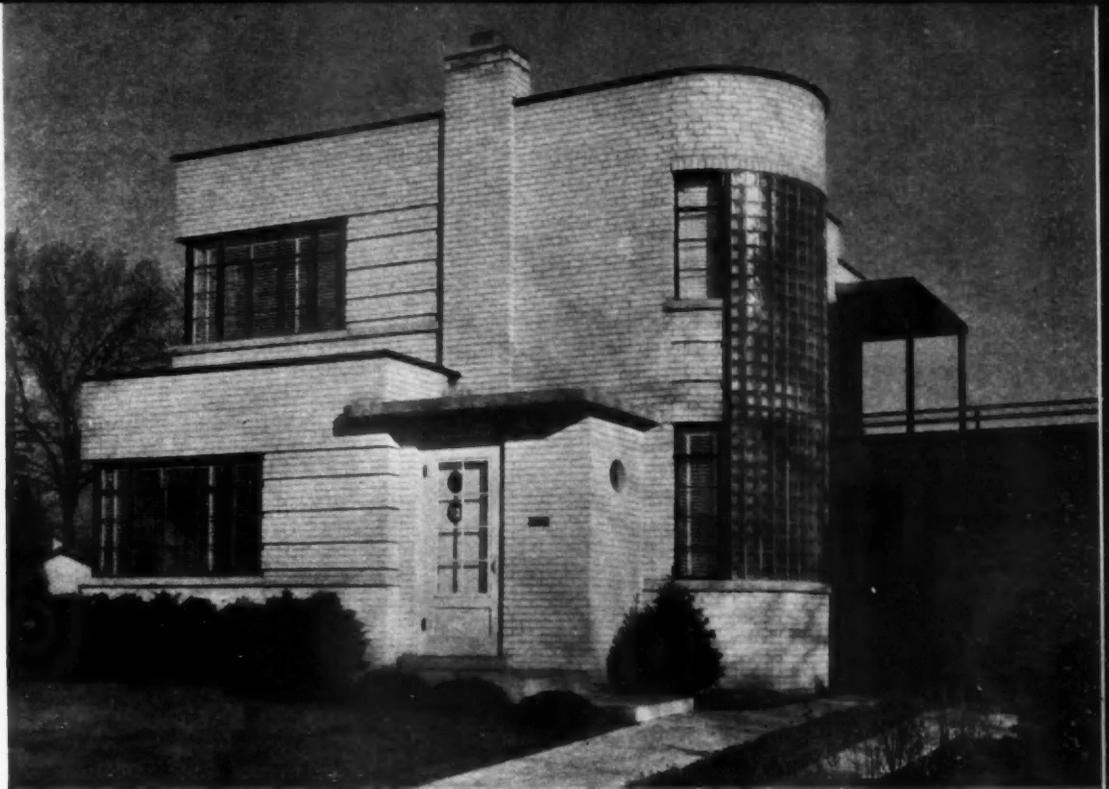
WHILE the floor plans at the left indicate but seven rooms, the basement contains extra finished space. Lannon stone has been skillfully combined with half-timbering and brick; a Double-Lock copper thatch roof perfectly fits the character of the building. Balsam-Wool insulation, Standard Sanitary fixtures, Hoosier kitchen cabinets, Gold Bond acoustical tile, Juneaire conditioning system and several panels of glass block are some items used.



← Traditional

→ or Modern

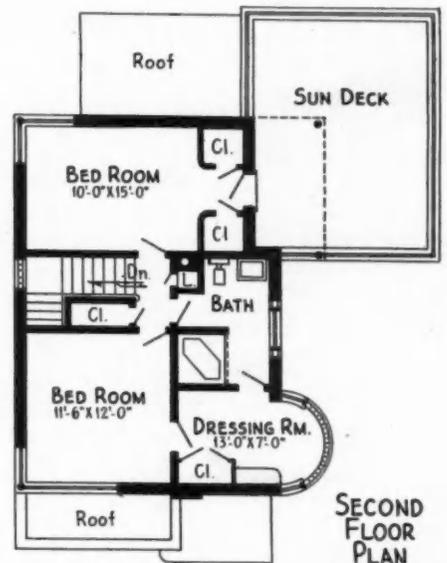
Rice & Rice  
Design and  
Build in a  
Wide Range  
of Style  
and Price



## Modern Treatment of 6-Room Home

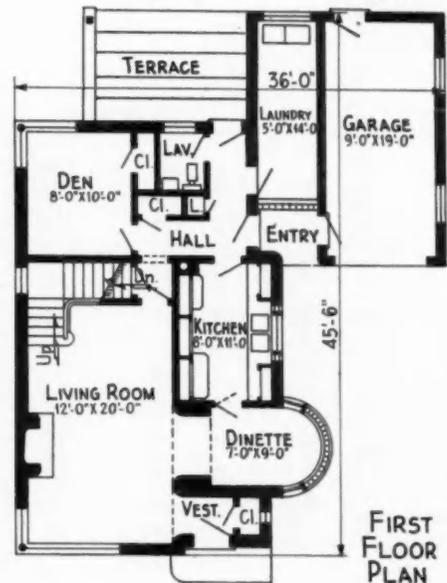
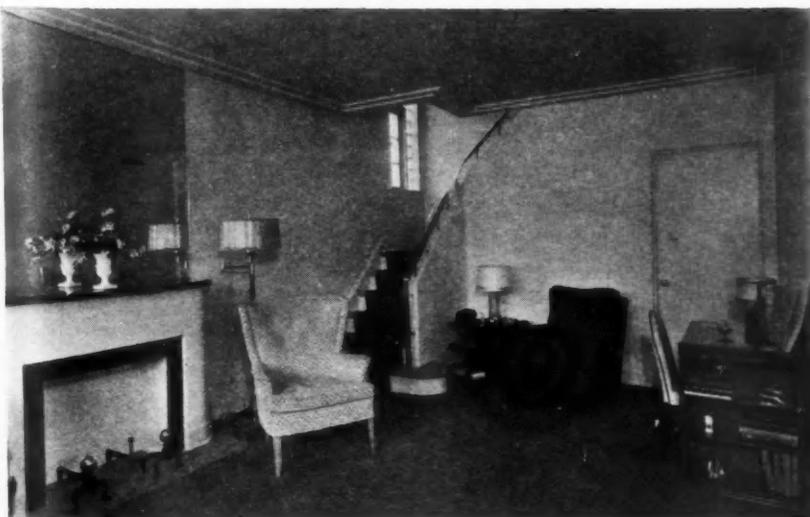
THE streamlined exterior of this design is dominated by the large two-story glass block panel which lights the dinette on the first floor and the dressing room above. Plan features include a well lighted laundry between the rear hall and attached garage, above this a generous sun deck off the rear bedroom, rear terrace reached by connecting hallway from both living room and kitchen for outdoor living, and adequate storage facilities throughout. While the front elevation of this house, with the projecting garage and living room wings, gives an impression of a moderately large size, the overall width is only 36 feet.

Some of the materials and equipment used are J-M built-up asphalt roof, 3-coat plaster on rocklath over furring on solid brick walls, Balsam-Wool above second floor ceiling, oak floors except Armstrong linoleum in kitchen and baths; PC glass block, A.G.P. gas-fired winter conditioning, Standard Sanitary fixtures, and Lightolier lighting.

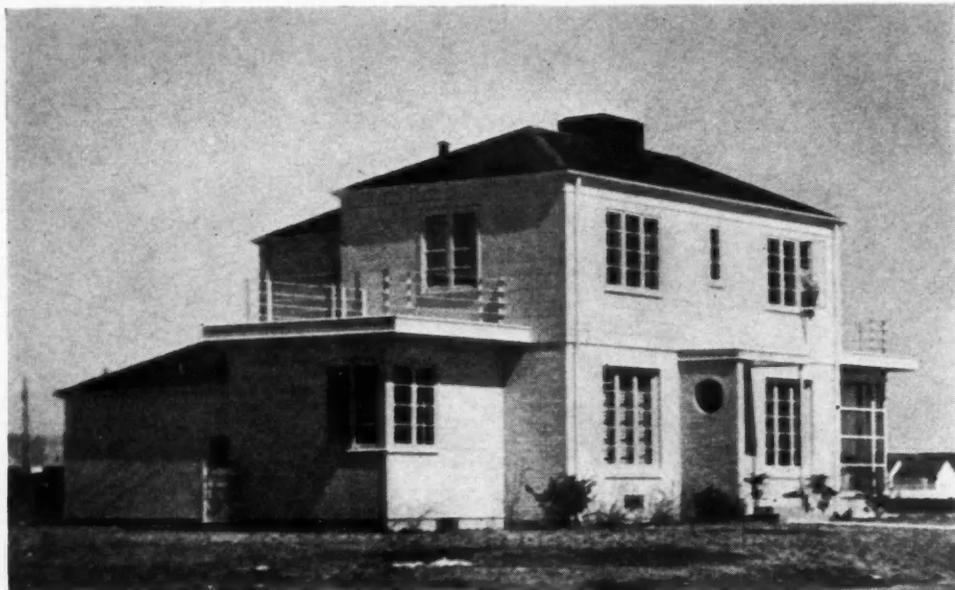


SECOND FLOOR PLAN

BELOW: The polished metal ribbon handrail on the stairway leading up out of the living room, the mantel with large mirror over it, cove and trim carry out the modern lines.



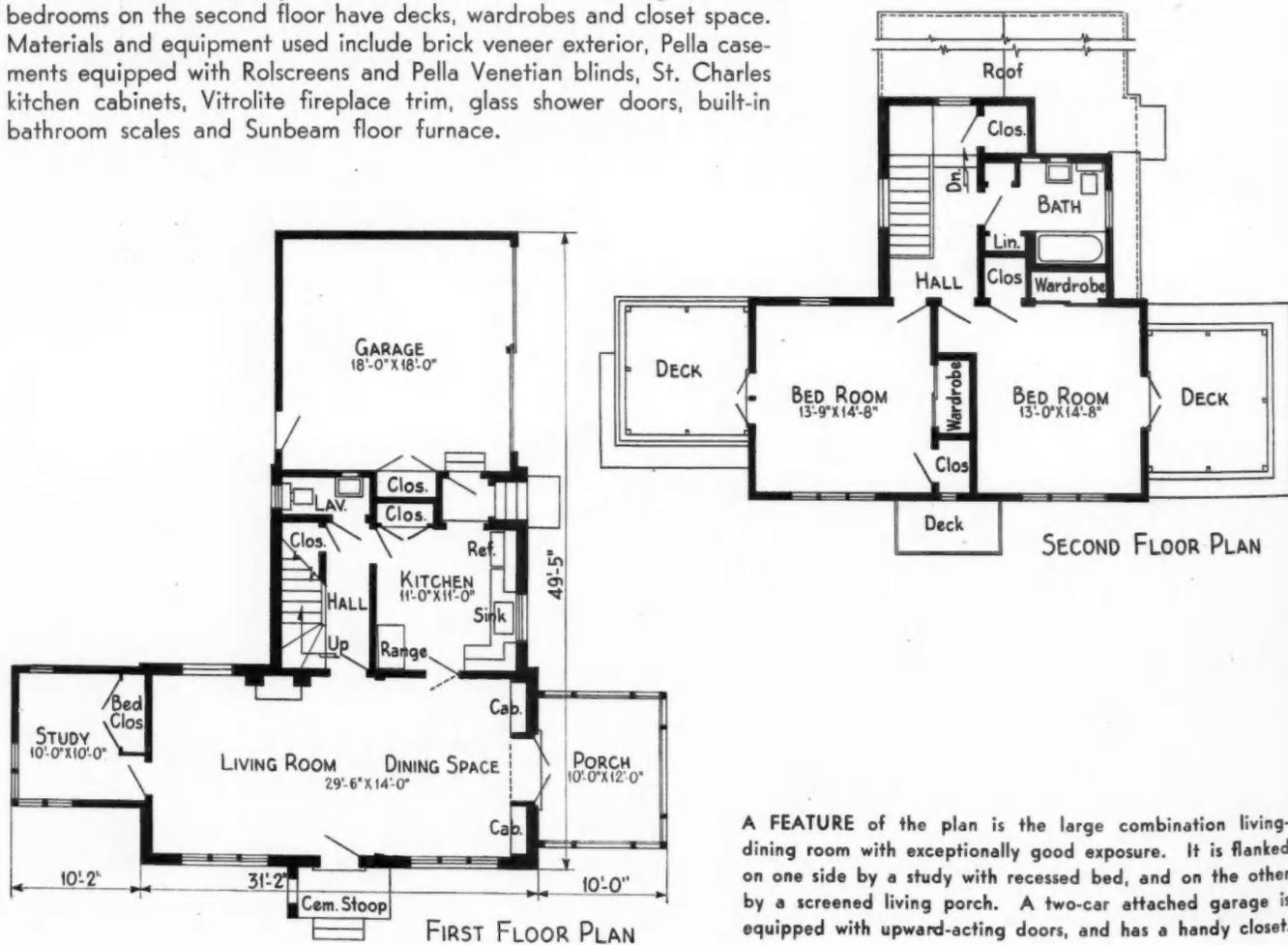
FIRST FLOOR PLAN



A MODERN treatment of the exterior of this Houston, Tex., home built for sale by Realty Servicing Corp. has been reflected in the planning as indicated below. With in its content of 14,000 cubic feet, there are six rooms and garage.

### Study Serves As Extra Bedroom in Houston Home

THE convenience of a three-bedroom home is achieved in this modern Houston, Tex., design by equipping the study with a Holmes recessed bed. From this room paneled in Artply through the combination living-dining space to the porch on the opposite side, there is a living area 50 feet long with exposure on four sides. The compact kitchen has plenty of cabinet and storage space; a Higgins breakfast nook has seats which fold out of the way underneath the table. The two good sized bedrooms on the second floor have decks, wardrobes and closet space. Materials and equipment used include brick veneer exterior, Pella casements equipped with Rolscreens and Pella Venetian blinds, St. Charles kitchen cabinets, Vitrolite fireplace trim, glass shower doors, built-in bathroom scales and Sunbeam floor furnace.



A FEATURE of the plan is the large combination living-dining room with exceptionally good exposure. It is flanked on one side by a study with recessed bed, and on the other by a screened living porch. A two-car attached garage is equipped with upward-acting doors, and has a handy closet.

## 5-Room Cottage on Wooded Site in Texas

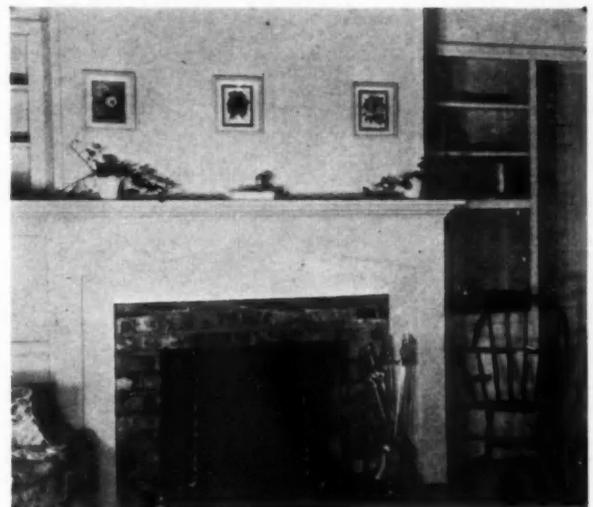
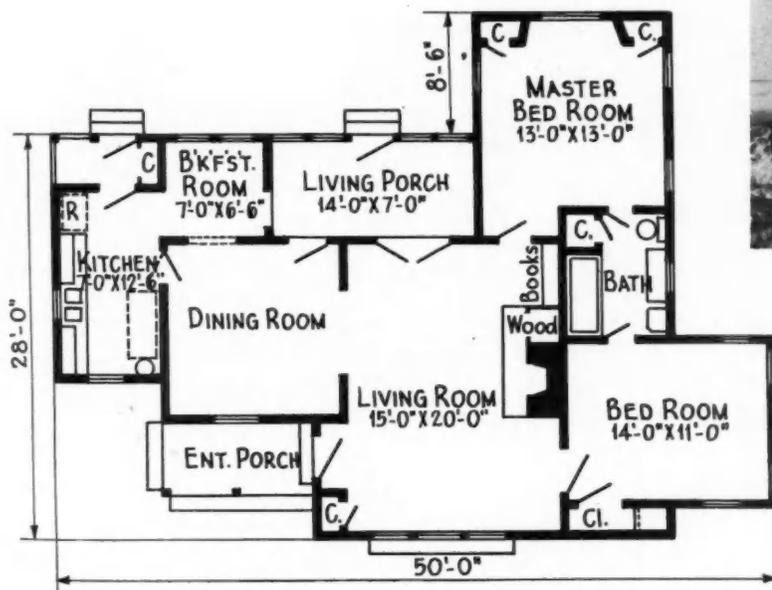
BUILT on a finely wooded 80 by 200 foot site in the Garden Oaks section of Houston, Tex., the nicely detailed ranch type home shown below is planned for comfortable southern living. It was designed by Architect E. M. Wyatt, and built by the W. D. Peck Company. The broad front elevation 50 feet wide suggests a much larger and more expensive home. However, this "spread-out" idea for this Colonial adaptation is becoming increasingly popular in the southern states; as will be noticed in the plans, the bedrooms and kitchen extend beyond the main portion of the house for good ventilation, while the three porches are included within the main framing. The extra chimney

serves as a ventilating flue through which an attic fan discharges.

The construction is frame with wide siding on the exterior, and plaster on U.S.G. Sheetrock on the interior. Roof is of red cedar shingles. Plan is of open type with living room, dining room and breakfast room all providing access to the screened living porch; circulation in this part of the house is unusually good, as the kitchen can be reached from any of these rooms without going through the dining room. The bath is provided with closet space and dressing table; it connects the two bedrooms.

Overall dimensions are 50 by 36 feet 6 inches.

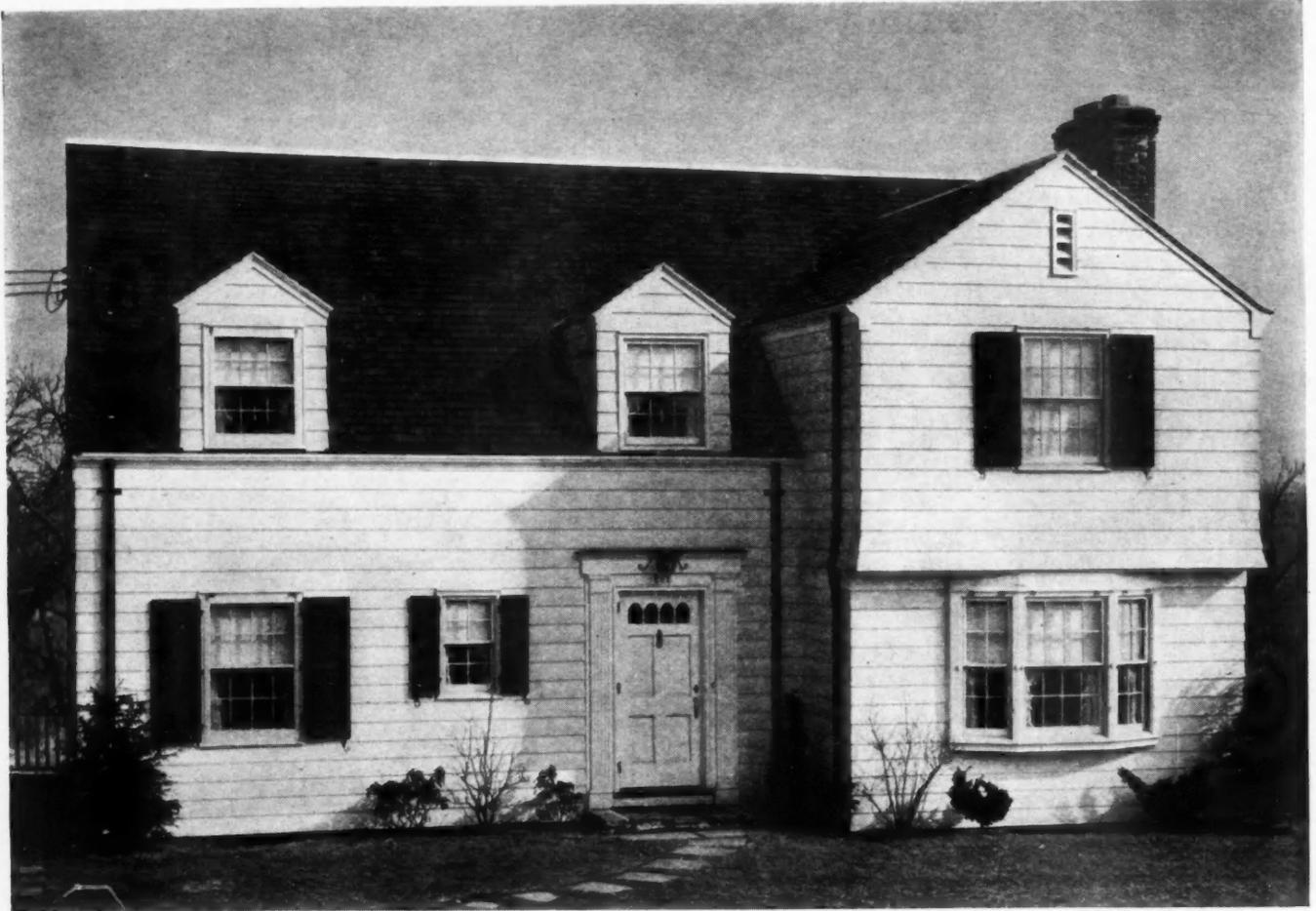
**Built in Garden Oaks Subdivision,  
Houston, Tex.; E. M. Wyatt, Archi-  
tect; W. D. Peck Company, Builder.**



THE attractive natural fireplace in this Houston home has a nicely detailed mantel and is equipped with wood storage closet; book shelves and cupboard space are built in on both sides.



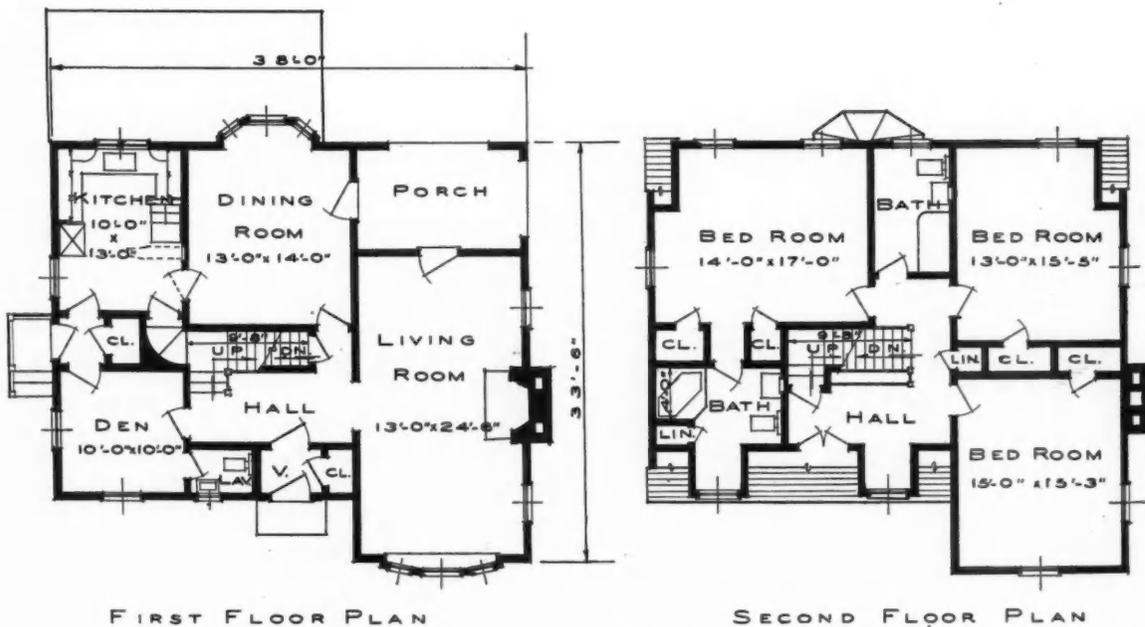
AT first glance, this Texas ranch type home appears similar to the average five-room cottage, but study of the plan will show adequate provision for cross ventilation in all rooms.



## Downstairs Den

7-Room Hartford Home, Cubage 28,000

CLIFTON C. WEST, architect, and Martin Berg, builder, produced this attractive West Hartford, Conn., home. It has 7 good rooms, 2 baths and a downstairs lavatory off the den. The covered porch is an attractive feature, as is the dining room with a large bay window overlooking the view. Exterior is of asbestos siding shingles.



FIRST FLOOR PLAN

SECOND FLOOR PLAN

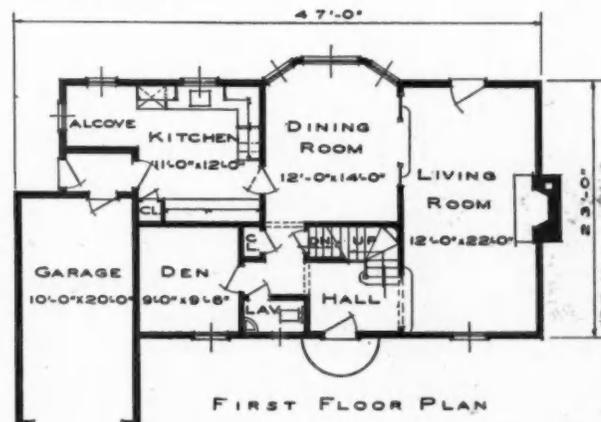
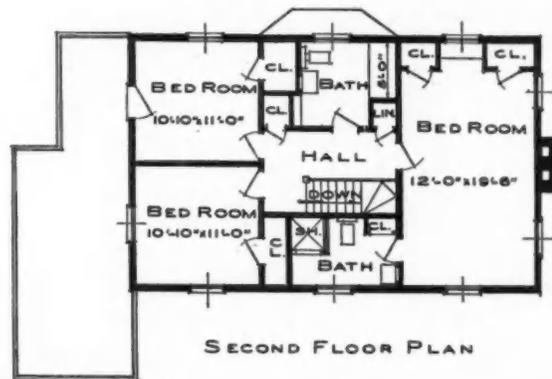
FLOOR plan arrangement is good, with a spacious vestibule and a clever stair arrangement permitting access from both kitchen and front hall. There is a 2-car garage in basement underneath kitchen section.



Photo by H. D. Holt

## Impressive Exterior—Dropped Floor Living Room

AN excellent plan and an unusually impressive exterior make this West Hartford house outstanding. It was designed by Joseph E. Kane and built by Hartford Construction Co. The dropped-floor living room is an impressive feature, as is the bay window in dining room. The entrance hall arrangement is excellent, and the den is an attractive selling feature. Equipment includes an H. B. Smith boiler with U. S. radiators, Corbin hardware, St. Charles steel kitchen cabinets, oak floors, asphalt shingle roof. Cubage is 33,000.



WROUGHT-IRON railing separates dropped-floor living room and dining room. Recessed radiators are used under the side windows.

HALL and stair details are good, providing convenient access to kitchen, basement, den and lavatory. This is an economical plan.

AT THE RIGHT: Copper flashing is being applied over the window head on a wall section being built over the rough first floor and then raised into position.



## How Complete Wall Sections Are Made Horizontally on the Job by a Builder in Washington, D. C.

**T**O R. Patrick Turner, of Boswell-Turner Company, Hyattsville, Md., belongs the distinction of being one of suburban Washington's most progressive builders.

In a sharply competitive field, Turner knew that a good reputation depended on the use of good materials, but he had no inside advantages in this direction. Labor offered no opportunity for any competitive edge, and he early realized that his only hope for success lay in shaking off some of the traditional cobwebs that enmesh the building industry. Believing there were additional opportunities for labor savings through prefabrication—not the production line stuff often discussed but seldom produced by the housing "experts"—he turned to genuine full-length wall prefabrication accomplished right on the job.

It appeared wholly inconsistent to fasten and erect a framework, cover it and then insert the window frames, and later to apply building paper in a most awkward position, to be followed with the application of asbestos shingles from scaffolding.

Common sense seemed to dictate that the complete wall section be built horizontally. The plywood subfloor, as shown above, made a smooth and solid working platform for alignment of the studs, which were all cut to

exact length by electric saws, and neatly piled for subsequent use. Plyscord sheathing in standard 4 x 8 foot panels was applied over the entire surface of the wall section (openings were cut out with a mechanical saw).

In the horizontal position the application of asphalt paper was immeasurably facilitated and the steel casements were set in with surprising ease. Window flashing was installed in a fraction of the usual time, and with a shingle clipper never more than a few steps away, the asbestos shingles were measured, clipped and applied with about one-third of the effort customarily required to do this job.

The erection of the finished wall was facilitated by nailing a few short pieces of 2 x 4's to the floor joists; temporary braces hold walls in place until securely nailed.

### Floor Joists, Studs, Ceiling Joists and Roof Rafters Aligned

Accurate alignment of all structural members is emphasized to facilitate the installation of standard sized panels of plywood for wall and roof sheathing. Spacing of studs and joists is started at the front right hand corner on all of Mr. Turner's houses, and any subsequent location of a stud is accurately found with a rule.



A FINISHED group of Turner-built houses in the Washington, D.C., area, most of which displayed "SOLD" signs before completion.

Precut rafters and heavy 3-in-1 strip asphalt shingles are used on roofs. Bevel siding in the gable ends, either painted or stained, is attractively combined with several shades of asbestos shingles to present a pleasant variety of finished effects that belie the price of these attractive little homes.

**Interior Conveniences Emphasized**

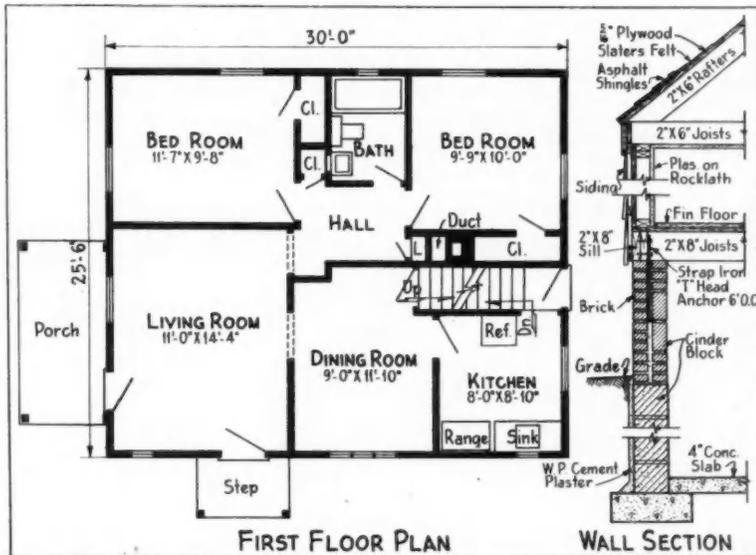
Another feature of these houses which has given a plus value and a minus time equation is the use of prefinished oak floors. The factory finish, according to Mr. Turner's viewpoint, surpasses in beauty and wearability that produced by job methods and without all of the usual "back tracking" and delays. He points out that the smooth and uniform plywood subfloor is a substantial contribution to the successful use of prefinished flooring; too, the inlaid linoleum of both bathrooms and kitchens can be counted on for maximum beauty and service, since it is laid on large sheets of plywood which form the working platform.

After a long attempt to get a thoroughly satisfactory system of warm air heating Mr. Turner again resorted

to his own ingenuity. He designed and patented a system that minimizes duct work and completely eliminates it in the basement. The entire system is prefabricated and is installed in several hours. Maximum efficiency is obtained by the simplification of the duct runs, with leads being taken to the several rooms from a large plenum chamber through a false ceiling in the hallway. Mr. Turner says that the system has given complete satisfaction and that it costs only \$345 complete, with a gun-type oil burner.

There is no "selling problem" for this progressive builder—for his houses are generally sold before they are finished—but with all of his success he has steadfastly refused to engage in large scale projects. A ten-house construction group is for him the most convenient and economical building unit, since a larger unit would deprive him of the opportunity of supervising personally all phases of construction.

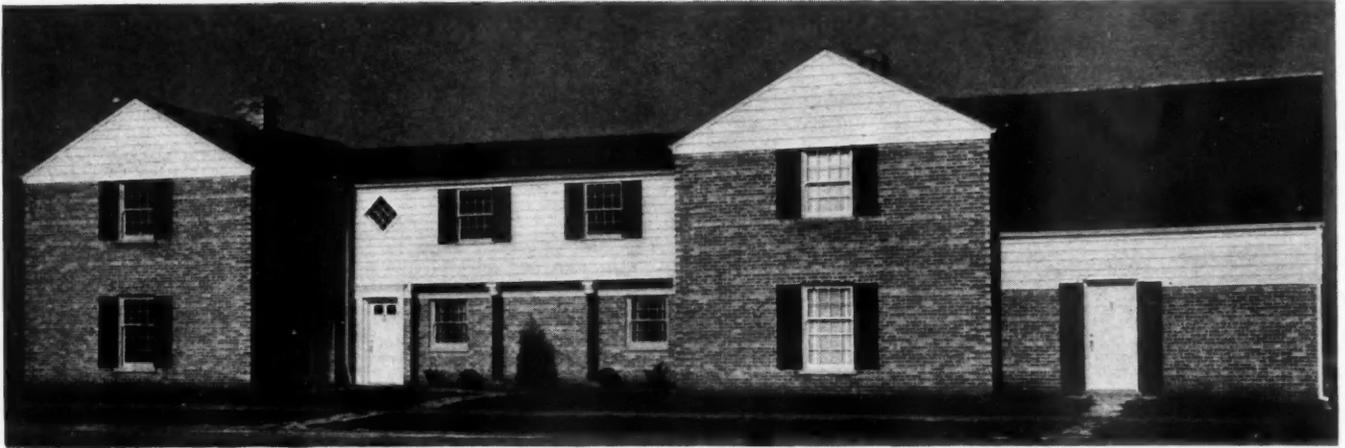
The proof of Mr. Turner's contention lies in the fact that he thoroughly enjoys his job, is having the moral satisfaction of building a truly fine house, and seems to be making profit besides. What more could a builder desire?



THE Turner basic plan is simply framed within an overall of 30 by 25½ feet. By projecting the living room and changing the porches, interesting variations are secured as shown opposite. Wall section indicates construction details. View at the right shows the stairway arrangement out of the dining room.



ABOVE: Foundation completed, wall sections are built on plywood subfloor; precut rafters and roof sheathing go up rapidly.



DESIGNED for his own use by Architect Glenn Q. Johnson, this Elmwood Park, Ill., duplex also provides over-garage office space.

## Income Duplex with Architect's Office

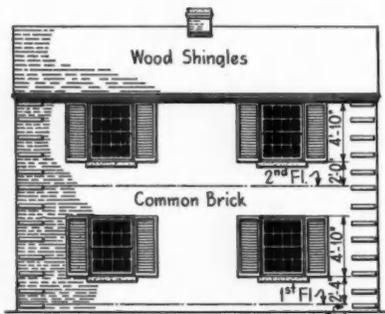
**T**HIS duplex design incorporates a number of unusual features which make it a most interesting project. It was planned and built by Architect Glenn Q. Johnson, Elmwood Park, Ill., as his own residence with connecting office space over the two-car attached garage. The other unit provides an income property.

The exterior styled in conservative Colonial design is pretentious due to its extended length, but still fits into the neighborhood of surrounding single-family residences. The connecting center portion is unexcavated, and on the first floor houses a well lighted laundry for the use of both tenants. French doors in the living room open out onto the court in front.

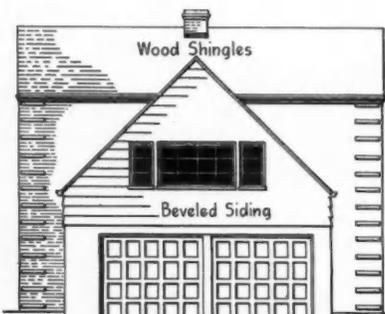
Materials and equipment include the following: Concrete foundation; structure of common brick with Hay-

dite block backup, reinforced concrete and frame; red cedar shingles over roof sheathing; interior partitions of wood studs, lath, 3-coat plaster; oak floors throughout except linoleum in kitchen and bath; Metallated Ecod lath on ceilings; Alfol insulation; Rudy gas-fired winter air conditioning systems; Rezo interior doors; Crawford upward-acting garage doors; Whitehead metal kitchen cabinets and Duocrat units; Pratt & Lambert paint on interior and exterior surfaces; Chase lighting fixtures.

The novel use of space above garage for Architect Johnson's office is particularly worthy of note. This space is divided into a good size drafting room with a wide expanse of windows in the gable end, reception room and lavatory. Access is either by a side entrance from the street, or directly through one of the bedrooms.

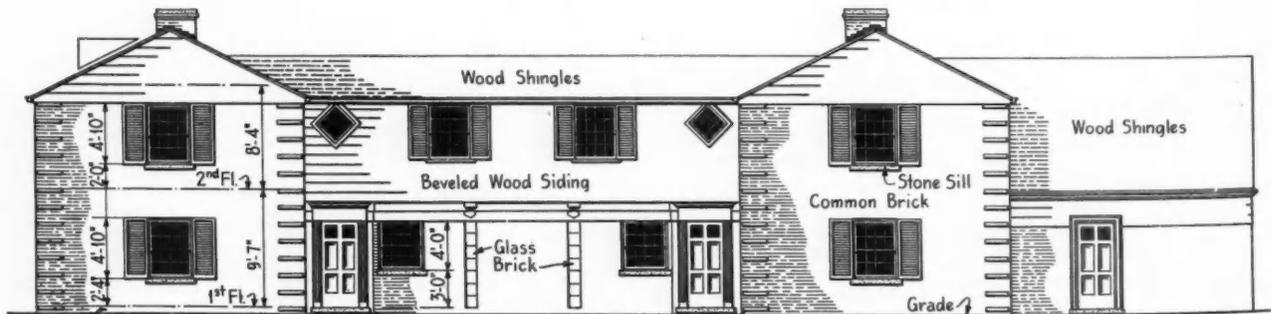


WEST ELEVATION

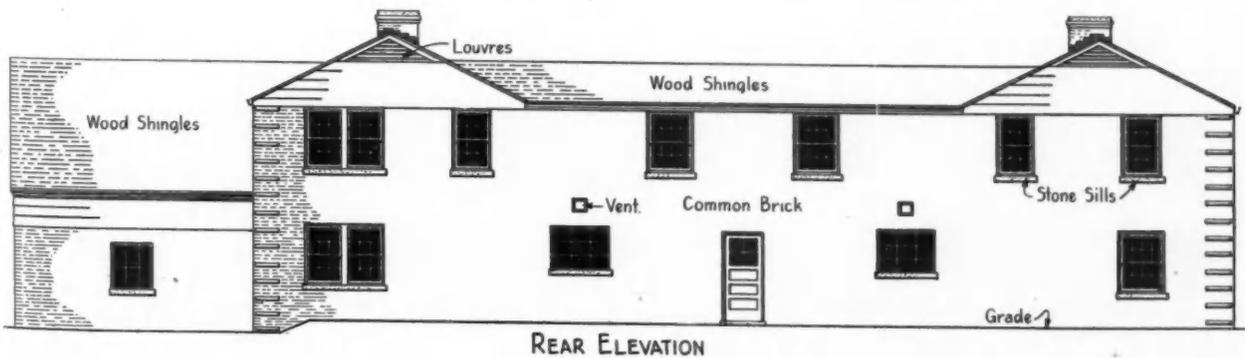
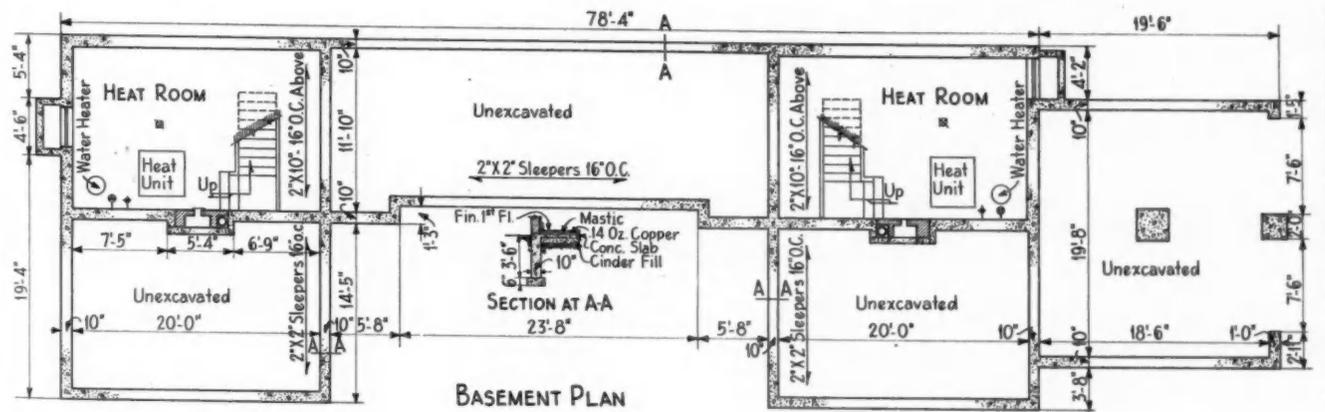
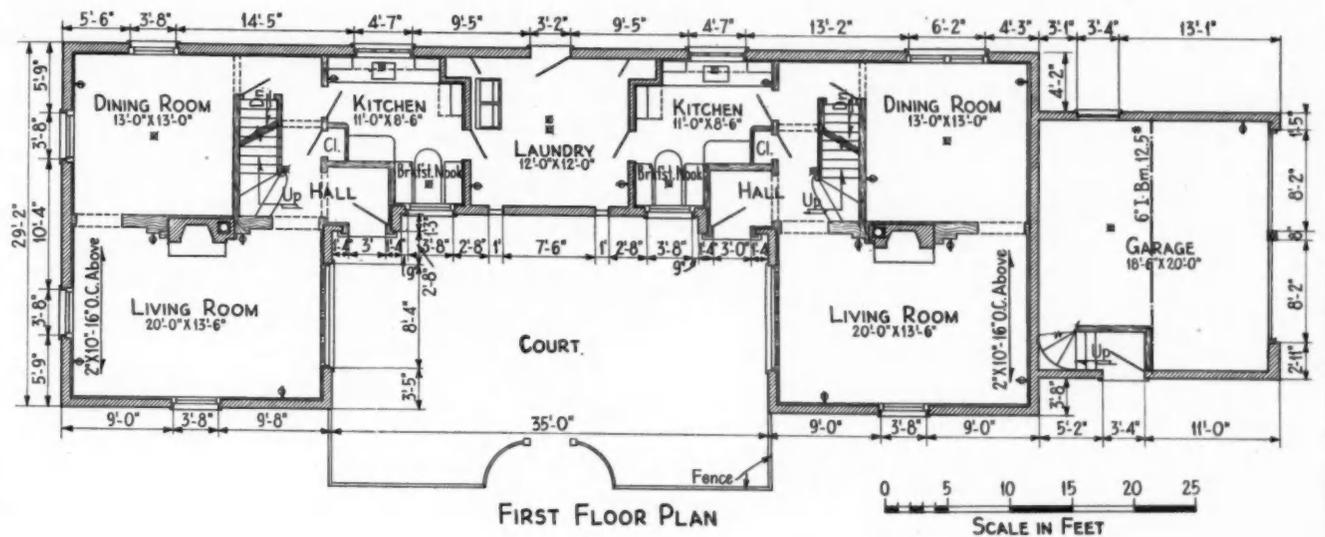
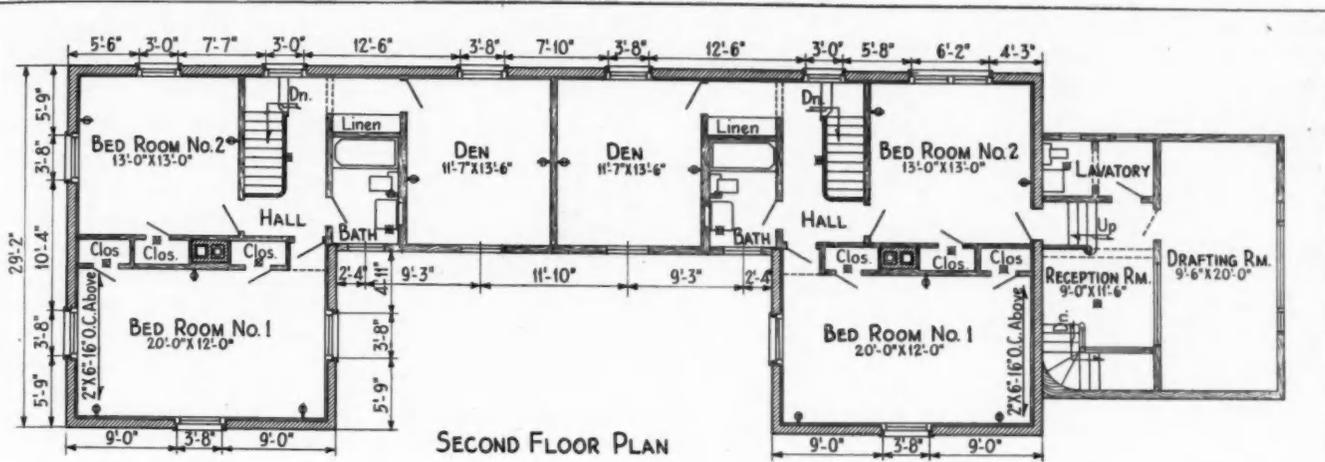


EAST ELEVATION

AN entirely different design approach is found in this Colonial styled duplex of Architect Johnson. The view above shows the structure before complete landscaping and minor items of trim had been added; it is seen here from the side street on which the corner lot site faces. Plans on opposite page indicate how practically all advantages of light and air in detached house design were obtained without sacrificing trim appearance.



FRONT ELEVATION



ABOVE plans show practical layout of combined duplex and office designed by Architect G. Q. Johnson for his own use.



## Rustic Cabins and Filling Station

**Redwood Siding Used to Good Advantage with Rustic Trim  
in Building Group of Small Cabins Near Bethel, Conn.**



A. LAMONTE, owner of the cabins, points out the rustic rough cedar porch railing which adds to the attractive rustic effect.

**A**N EVER growing, ever changing market that represents real business for builders is to be found in the roadside camp cottage and filling station line. Every new highway opens new possibilities. Along the old highways the builder who is smart enough to develop a new idea that will bring in customers can create jobs for himself.

One of the important trends in roadside cottage construction is the tendency towards a rustic woody effect. Cottage builders are spacing the houses further apart, surrounding them with more grass area, shrubbery and trees. The cottages as well as filling station structures and roadside restaurant buildings are being built of log cabin siding and other natural looking materials that fit into the country surroundings.

The reason for this interest in the rustic design is that when people leave the city or towns where they live, they want a change. When they go to the country they want to be in countrylike surroundings with rustic buildings.

An interesting illustration of this type of cabin development is Redwood Log Cabins, Inc., near Bethel, Conn., on U. S. Route 6, managed by J. M. Simpson and A. Lamonte. The filling station structure, restaurant and cabins are all built of redwood log siding with rustic trimmings. The work was done by Gustav V. Bergquist, a contractor of Redding, Conn.

The filling station and restaurant are set back from the road quite a distance and are separated by a grassy island. A wide gravel space provides ample room for movement of the cars. Beyond the filling station and restaurant is a large grassy plot of ground with a dozen cabins arranged in a half circle and serviced by an attractive gravel drive.

All of the structures are built of redwood log siding which has been given a natural creosote finish. This treatment has the advantage not only of giving a pleasant, woodlike color but also provides an inexpensive and long-



EVERY effort was made to maintain the "woody nature." Trees were transplanted close to cabin and grass was planted over surrounding area.

lasting wood treatment that requires practically no upkeep.

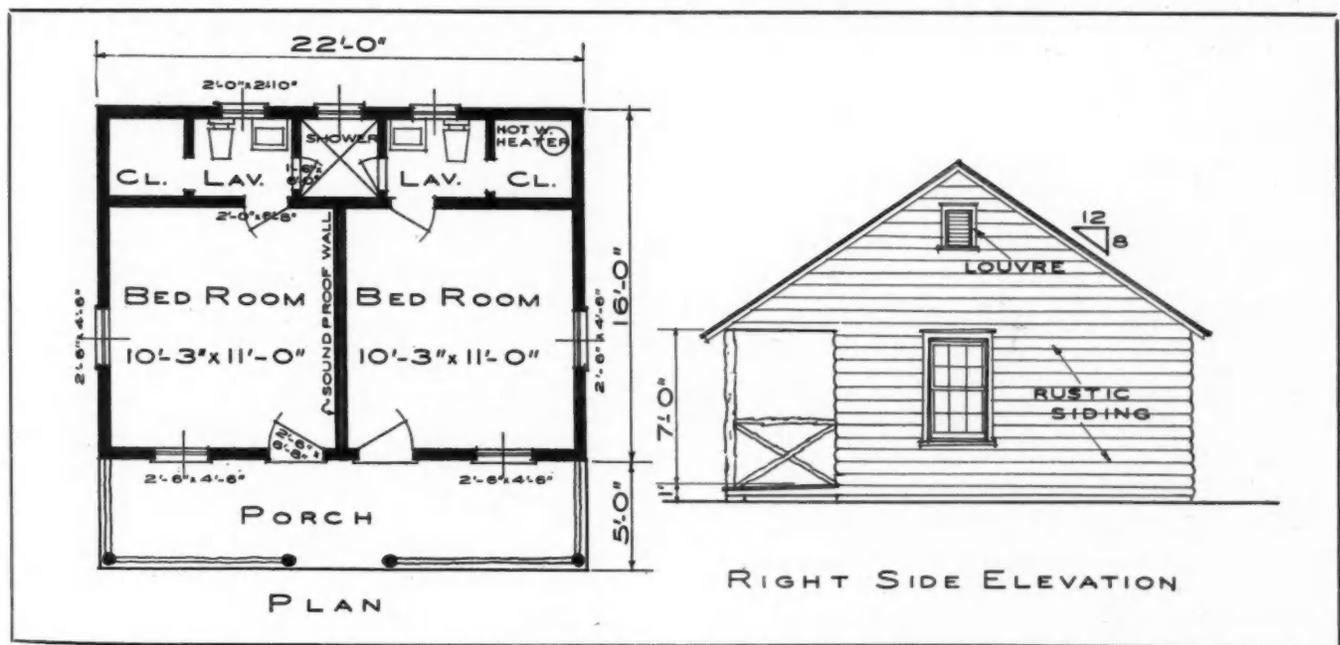
The individual cabins built by contractor Bergquist are 16 feet deep and 22 feet long, with a 5-foot porch running across the front. They are double cabins: that is, each has a 10'-3" by 11' room with shower and toilet facilities. The room arrangement provides space for one double bed and one single bed. Interiors of the cabins are fully lined with 3/4-inch insulating board. Hot water is provided by an automatic hot water heater operated with tank gas. The exterior log siding is 8 inches wide and 2 inches thick. Adding to the rustic effect, rough cedar poles are used for the porch railing and trim.

To carry out the rustic effect, the owners transplanted numerous pine trees and other shrubbery around the houses and established a large grass area all around the cottages and in a circular spot between the driveways and the filling station. The cabins are far enough away from the highway so that occupants are not disturbed by traffic noises.

This is a well-laid-out rustic type of roadside development that any builder with imagination and skill can carry out with materials obtainable locally.



TYPICAL cabin is 22 by 16 feet, with a 5 ft. porch.



FLOOR plan and elevation of the Bethel, Conn., cabins built by Gustav Bergquist having two rooms, with shower and toilet facilities economically arranged.

# Castle Village Apartments

**Floor Plan in Shape of  
Maltese Cross Provides  
River View in All Units  
in 4-Million-Dollar New  
York Project**



**C**ASTLE Village Apartments in the upper Manhattan section of New York City have now been in operation long enough to test the value of a unique and interesting type of floor plan as applied to one of the largest privately financed apartment house projects built in recent years in the United States.

The floor plan consists of a Maltese cross arrangement, with passenger elevators, service stairs and other service equipment grouped in the center. This permits placing of the individual apartment units on the outside boundaries of the cross in such a fashion that every apartment has a view of the river, with the exception of one small unit on each floor.

The floor plan also provides excellent cross ventilation in practically all rooms and reduces the amount of hall space to a minimum. Although at Castle Village the structures rise 11, 12 and 13 stories high, there is reason to believe that this same arrangement might prove suitable for much smaller buildings. The growing demand in apartments for more parklike surroundings and a better view is satisfied by such a plan.

Castle Village marks another milestone in the interesting career of Dr. Charles V. Paterno, physician and builder extraordinary.

The site has been occupied by the "Castle," the private residence of Mr. Paterno since 1906. With Dr. Paterno as builder, concrete work was handled by Walter Kidde Company, New York engineers and builders. The architect was George Fred Pelham, Jr., and the engineer in charge, Victor Mayer. Construction of the reinforced concrete buildings during the bitter cold of the winter of 1938 and 1939 was a notable building achievement. Specially made rope-reinforced tarpaulins were necessary to resist the tremendous winds that struck the exposed frame. Despite precautions a large number of tarpaulins were blown away in a 60-mile gale that developed during the worst storm of winter when the temperature dropped to 8 degrees. The emergency was met by the night shift, which replaced tarpaulins and maintained an adequate temperature to protect the newly placed concrete through use of a battery of 125 salamanders which burned 12 tons of coke in one night.

In addition to the construction features, the apartments themselves are replete with novel and up-to-date features that make them the last word in multifamily homes.

All floors are oak herringbone, cemented to concrete floors, free from annoying squeaks. Kitchen floors are of inlaid linoleum.

Dropped-floor living rooms, with wrought-iron gallery and handrail, unite the foyer and living room in a spacious and interesting group on two levels.

Each apartment entrance door is equipped with an "interviewer" having an automatic gravity latch.

Venetian blinds of high quality are standard equipment. Floor corridors are carpeted and silenced throughout.

All radiators are concealed in cabinets flush with window sills, and therefore do not occupy floor space.

There is a mail chute in each of the five buildings.

In the basement of each building is a central steam laundry for the use of tenants.

Top-floor ceilings are heavily insulated against heat and cold.

Walls between apartments have soundproof partitions, with dead air space between.

Every apartment has a triple corner window.

Every bathtub has a shower overhead.

Construction materials and equipment used include the following:

HEATING—Fitzgibbons oil-fired steel boilers.

FACE BRICK—3 million face brick by the Binghamton Brick Co., Binghamton, N.Y.

BATHROOM TILE—Architectural Tiling Co., Keyport, N.J. Tile accessories by Fairfacts Co., New York.

KITCHEN CABINETS—Specially designed, built and installed by the Kitchen Maid Corp., Andrews, Ind.

HOUSE TELEPHONES—Auth Electrical Specialty Co., New York.

HARDWARE—Harvard Lock Co. All doors equipped with Harvard SecurLock. All knobs and handles are of colored plastic Catalin by the Catalin Corp., New York.

INCINERATORS—Vent-O-Matic improved draft incinerators by Construction Products Corp., New York.

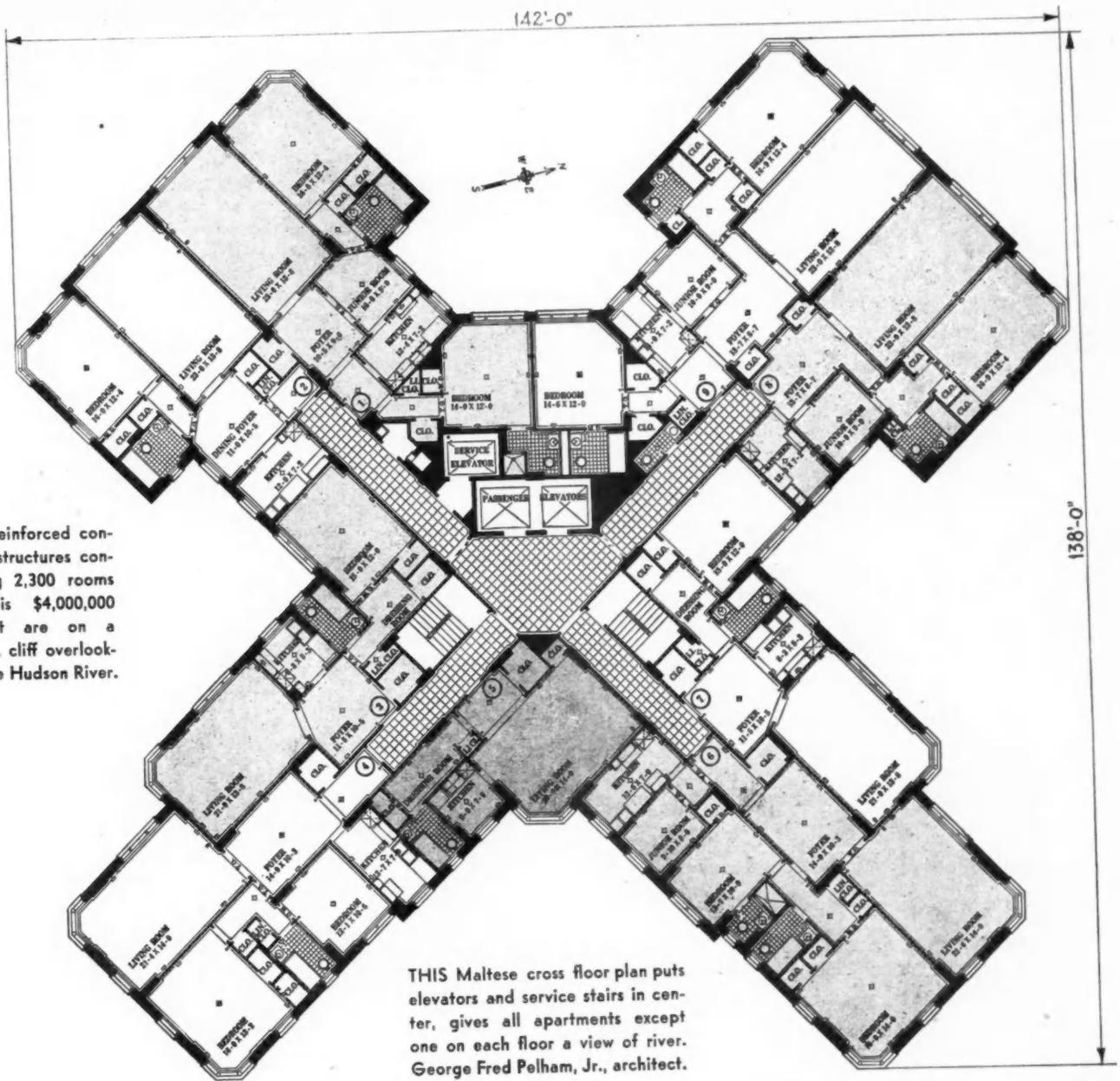
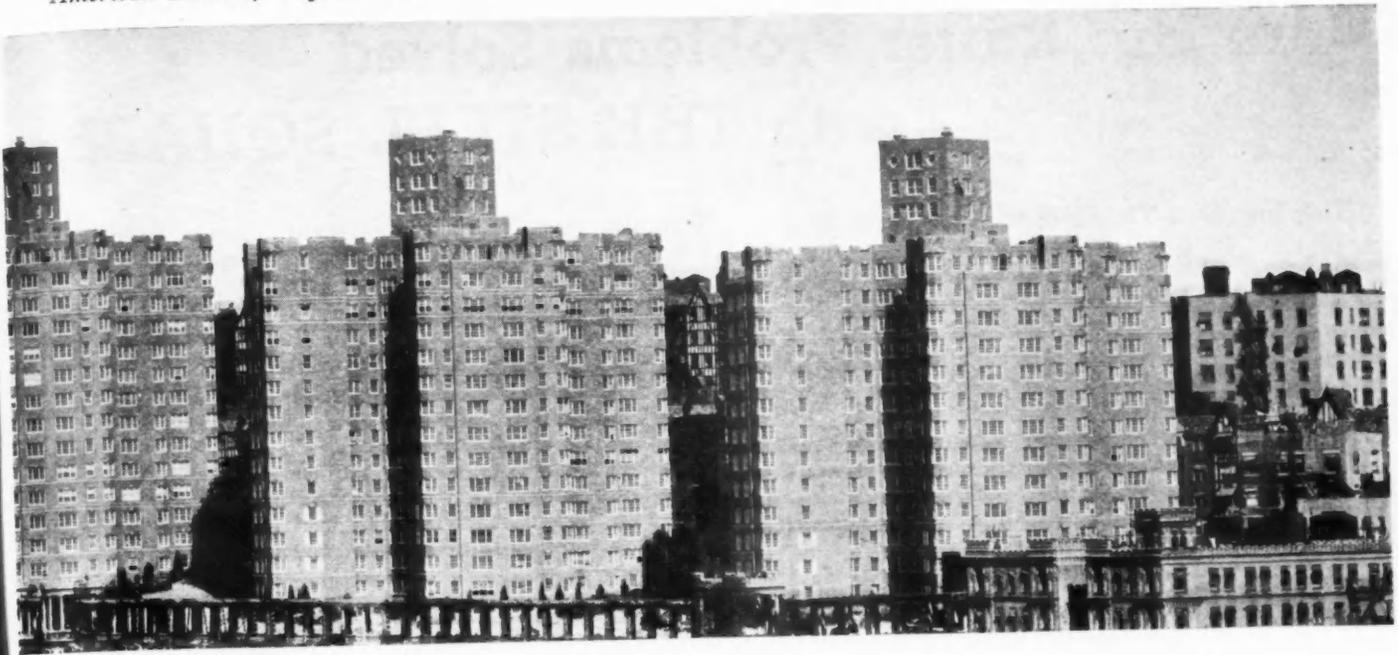
MILLWORK, FRAMES AND SASH—Weisberg-Baer Co. MEDICINE CABINETS, UTILITY HAMPERS, CONCEALED DRYERS AND SINK CABINETS—United Metal Box Co., Brooklyn, N.Y.

PLASTER—Gypsteel plasters by American Cyanamid and Chemical Corp.

LINOLEUM—On floor in 568 kitchens by Sloane-Blabon.

WINDOW SAFETY ANCHORS—Acker & Man, Inc.

HOLLOW STEEL BUCKS, DOORS AND ELEVATOR FRONTS—Superior Fireproof Door & Sash Co., Inc., New York.



FIVE reinforced concrete structures containing 2,300 rooms in this \$4,000,000 project are on a 200-ft. cliff overlooking the Hudson River.

THIS Maltese cross floor plan puts elevators and service stairs in center, gives all apartments except one on each floor a view of river. George Fred Pelham, Jr., architect.

# More Hip Rafter Problems Solved with THE STEEL SQUARE

Laying Out These Members with the Help of This Valuable Tool Is Here Further Considered in an Article

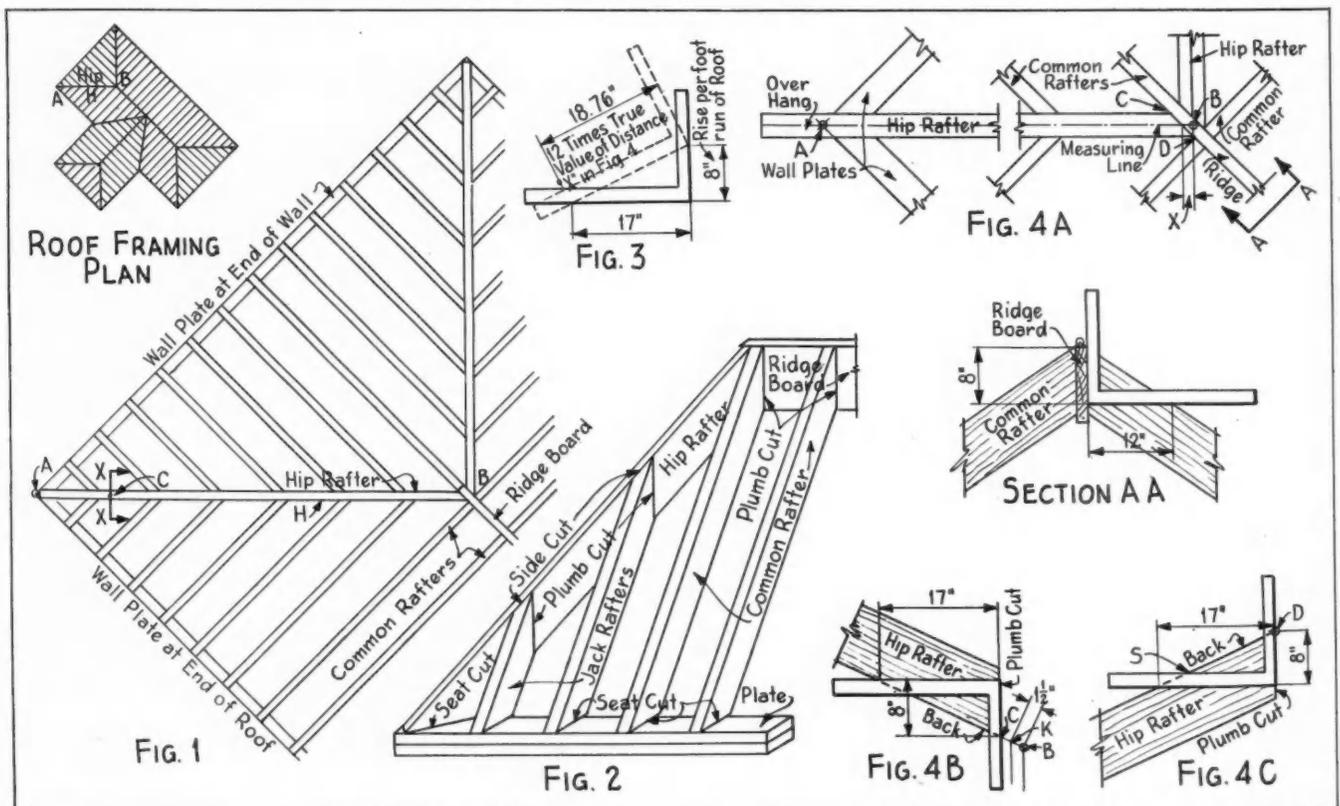
By Gilbert Townsend

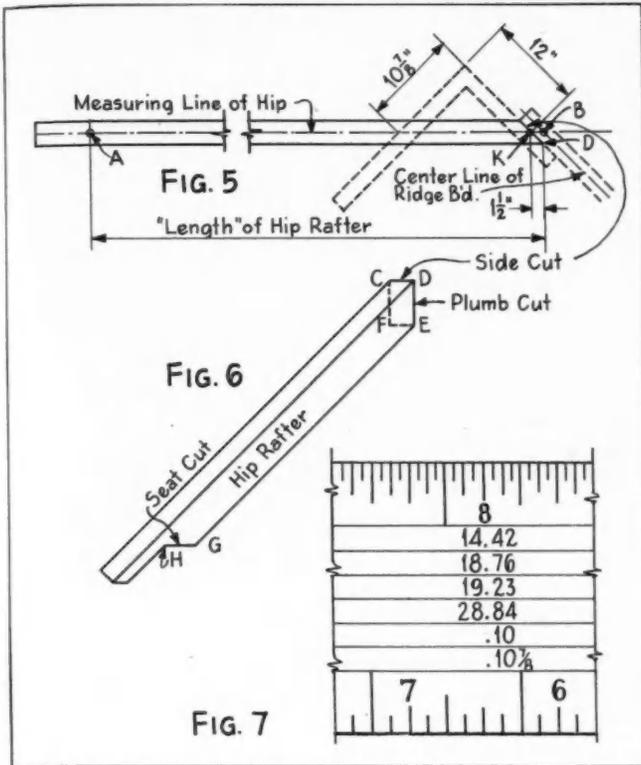
IN THE June article of this series dealing with the uses of the steel square, some of the applications of this useful tool to hip rafter problems were explained and it was pointed out that, after the "length" of the rafter (from the outside upper corner of the wall plate up to the center of the ridge board) has been found, there still remain several knotty problems to be solved before the ends of the rafter can be cut in such a way as to be sure that the rafter will fit properly into the roof frame. There is the "plumb cut" at the upper end of the rafter where it fits against the ridge board and the *seat cut* at the lower end of the rafter where it rests on, or is cut over, the wall plate at the corner of the building. In addition to the plumb cut at the upper end, there is also the *side cut* which is made necessary by the fact that the hip rafter is not at right angles to the ridge board in the plan view. This is illustrated by Fig. 1 which shows the framing plan of the end of a hipped roof and by Fig. 2, which shows a portion of the frame of a similar roof in isometric view.

**SIDE CUT FOR HIP RAFTER:** Fig. 4A shows the hip rafter which is marked H in Fig. 1 separated out

from the other rafters and drawn to a larger scale. At the right hand end it shows a part of the ridge board and at the left hand end it shows the wall plates in their respective positions in the plan view. Point B at the right hand end of Fig. 4A is on the center lines of both the hip rafter and the ridge board. At the right hand end of Fig. 4A the ridge is shown in plan and the side cut on the hip rafter is illustrated in plan view. (See line C-D). The two drawings in the lower right hand corner, Figs. 4B and 4C, illustrate the fact that the hip rafter slopes *down* towards the wall plates from the ridge and that A-B (Fig. 4A) does not show a true view of the top of this rafter, but instead shows only a plan view.

The distance marked X in Fig. 4A measured along the top (horizontal) surface of the ridge board from point B to the side of the ridge board, will be  $1\frac{3}{8}$  times half the thickness of the ridge board for roofs of equal pitch. If X be considered to be a *plan* view of the distance between point B and the point where the center line of the top surface of the hip rafter, (marked "Measuring Line" in Fig. 4A) intersects the side surface of the ridge board then, on account of the slope of the hip rafter, this distance will actually be more than  $1\frac{3}{8}$  times half the thickness of the ridge board and its true value will depend upon the degree of slope of the hip rafter and the thickness of the ridge board. If the ridge board is 2 inches thick, this distance may be found by taking 17 on the outside edge of the blade of the square and the rise-per-foot-run of the roof on the outside edge of the tongue as shown in Fig. 3 (at the upper left hand corner of Fig. 4) and measuring the diagonal distance between these two points as shown in Fig. 3. The result will be almost exactly 12 times the distance





sought, namely the true distance between point B and the point where the center line of the top of the hip rafter meets the side of the ridge board. This distance will be between 1 3/8 inches for a very flat pitch roof and 1 3/4 inches for a roof of 1/2 pitch. It may be taken as 1 1/2 inches for all ordinary roofs.

Fig. 5 shows a true view to scale of the top edge or "back" of the hip rafter looking from the direction shown by the arrow "S" in Fig. 4C. The dotted line drawn along the center may be called the "Measuring Line." Point B is the point where this line would intersect the center of the ridge board. Point A is the point in which this measuring line would intersect the line of the outside face of the wall plates (extended). The distance A-B would be the "length" of the hip rafter. Now from point B measure back along the measuring line A-B (away from the ridge) a distance of 1 1/2 inches to allow for a 2 inch thick ridge board and this will locate the point K (Fig. 5) in which the center line of the back of the hip rafter intersects the side of the ridge board. To mark out the side cut on the back of the hip rafter, apply the steel square to the back of the rafter as shown in Fig. 5 with the 12 inch mark on the outside edge of the face of the tongue exactly on the above mentioned mark "K" on the measuring line drawn lengthwise along the center of the back of the rafter. Keeping the 12 inch mark on this point, move the square around until it is in a position as shown in Fig. 5, which will be determined by the slope or pitch of the roof in inches-per-foot-run of the common rafters. The figure on the outside edge of the blade or body of the steel square which is to be placed on the measuring line is found in the Rafter Tables as follows:

**EXAMPLE:** Assume that the roof has a rise of 8 inches per-foot-run. Find the column of figures in the rafter tables under the 8 inch mark in the inch-line on the outside edge of the face of the blade of the square as shown in Fig. 7. The sixth figure from the top in this column will be 10 7/8 as shown in Fig. 7. Then find the 10 7/8 inch mark in the inch line at the outside edge of the blade or body of the square when it is in the position shown in Fig. 5 and place this mark directly over the

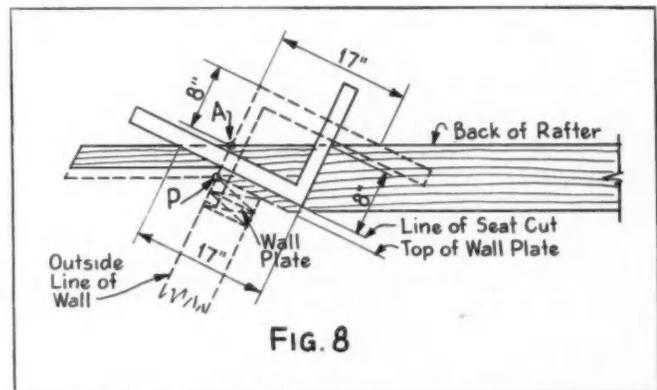
measuring line on the back of the rafter as shown in Fig. 5, while the 12 inch mark on the outside edge of the tongue is still held at the point "K" on the measuring line as shown. With the square in this position, a mark made along the outside edge of the tongue across the top edge or back of the rafter will be the line of the side cut or "cheek" cut for the hip rafter.

**RULE:** To lay out the line of the side cut or cheek cut (at the ridge) on the back of the hip rafter when the rise-per-foot-run for the common rafters is known. Find the rafter tables on the face of the blade or body of the square and in the inch line on the outside edge of the blade locate the figure corresponding to the rise-per-foot-run of the roof. In the column of six figures underneath this figure (See Fig. 7) pick out the 2nd and 6th figures, namely 18.76 and 10 7/8 in Fig. 7. Draw the measuring line lengthwise down the middle of the back of the hip rafter and locate the point A far enough from the lower end of the rafter (left end in Fig. 5) to allow for the overhang over the wall plate. Multiply the 2nd figure in the rafter table column (18.76 in Fig. 7) by the number of feet in the run of the roof, thus establishing the "length" of the hip rafter and lay this length off from point A (Fig. 5) along the measuring line and in this way locate point B at the center of the ridge. From point B measure back towards point A, a distance equal to 1 1/2th of the 2nd figure in the rafter table column (Fig. 7) thus establishing the point K where the measuring line on the "back" of the rafter intersects the side of the 2 inch thick ridge board. Place the square face-up against the top edge or "back" of the rafter as shown in Fig. 5, with the 12 inch mark on the outside edge of the tongue on the point K and the inch mark on the outside edge of the blade corresponding to the 6th figure in the rafter table column (See Fig. 7), also exactly on the measuring line. Then the outside edge of the tongue of the square will give the line of the side cut across the "back" of the rafter locating the points C and D on the sides of the rafter at the top of the plumb cut lines. (See Fig. 7 and Fig. 6).

**The Plumb Cut**

In Fig. 4A, when the side cut line and the points C and D have been fixed on the back of the rafter, apply the square to the two sides of the rafter as shown in Figs. 4B and 4C, so that the figure on the outside edge of the tongue corresponding to the rise-per-foot-run of the roof comes at points C or D, while at the same time the 17 inch mark on the outside edge of the blade rests against the top edge or "back" of the rafter. Then the outside edge of the tongue of the square will give the line for the plumb cuts on each side of the rafter corresponding to lines D-E and C-F in Fig. 6. Then the cut fitting the hip rafter against the ridge board can be made.

(Continued to page 87)





ABOVE: Two views of reception room finished in porcelain enamel; panels of black, brown and ivory harmonize with terrazzo floor; the mural on the wall at the right is done in seven colors permanently fired into surface.

## Improved Porcelain Enamel Panel Finish for Interiors

IN the past few years vast strides have been made in the improvement of architectural porcelain enamel for building purposes. Although the use of porcelain enamel was actively introduced about ten years ago the many possibilities of this unusual material have only recently begun to be thoroughly appreciated. From its early use as a metal roofing tile and other limited building applications porcelain enamel has now been developed to a point where literally tens of thousands of stores, service stations, and other types of buildings have been successfully and attractively finished in this durable, colorful material.

Another recent development of the use of porcelain enamel as a building material is its application for interior finishing. The Chicago Vitreous Enamel Product Company of Cicero, Ill., has been a leading exponent of porcelain enamel as a building material, having installed approximately 13,000 square feet of porcelain enamel in its large research and testing laboratories, erected during 1936.

This company, in completing extensive alterations to its executive and general offices, has just made further and even more elaborate use of architectural porcelain enamel. In contrast, however, to the type of construction employed in the laboratories, the latest method of handling provides a clean, unbroken surface of porcelain enamel. The panels employ no attachment strips, the flanges of the panels being slotted and hung to furring strips by means of concealed hooks. The panels are fabricated from 18-gauge metal to which an insulation board is veneered under high pressure backed up with a sheet of light gauge galvanized metal, thus making a flat, rigid building unit.

In keeping with the use of the latest type of architectural porcelain enamel, the offices have the advantage of modern indirect lighting, sound insulation and complete air conditioning. The new reception room, as shown in two views above, is an excellent example of how the liberal use of architectural porcelain in colors, used in combination with other materials, can create an extremely pleasing effect. The floor of this reception room is terrazzo with bronze detail insets, its color being in harmony with the other colors of the room. General lighting is provided by fluorescent

tubing recessed in ceiling coves. Doors and Venetian blinds are of bronze.

The washrooms in these modern offices are unusual in that all the main walls are constructed of wall panels of satin-matt finish. Flush type enclosures are completely porcelain enameled.

The rooms, by virtue of their easy-to-clean surfaces, have reduced maintenance to the minimum. While the designs of the various rooms are somewhat more elaborate than might be installed in the average manufacturing plant or business building, Roy Blass of Chicago, the architect, purposely made them so in order to demonstrate a few of the many possibilities.



MEN'S room at Chicago Vitreous Enamel Product Co. has enclosures and wall panels of colorful porcelain enamel in blue, red and ivory.

# SHOPCRAFTER'S Corner

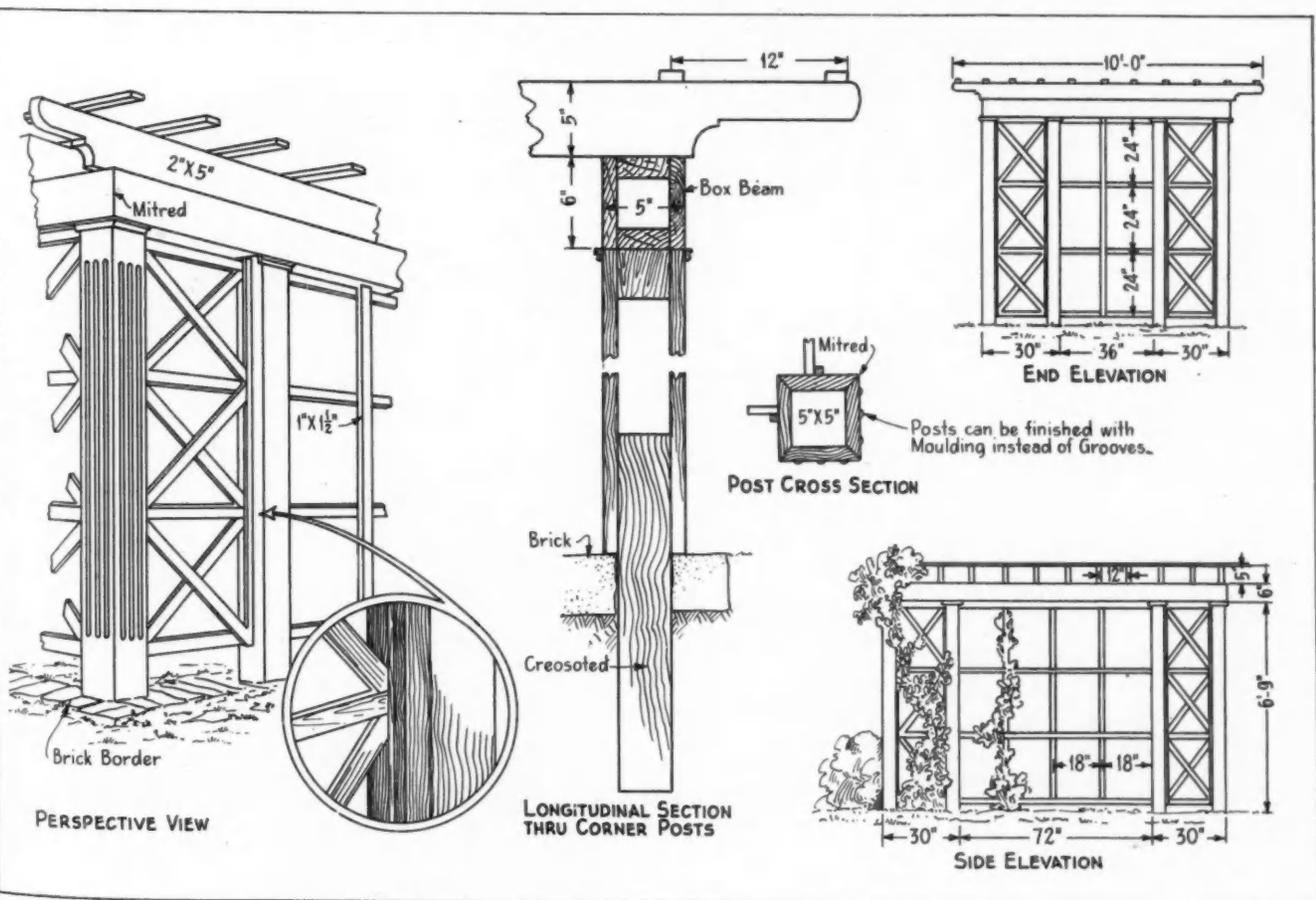
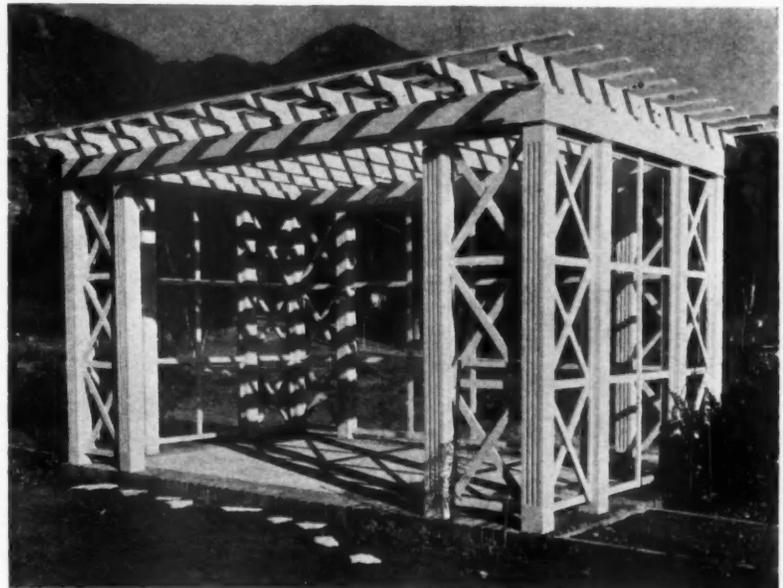
Things To Build for Profit or Pleasure

## Attractive Pergola Helps Dress Up New or Old Houses

THIS attractive garden structure can be located to form a focal point of landscaping for either existing houses where it is desirable to add a garden feature, or in the case of new houses, it can be used as an item to add sales appeal particularly to model homes recently landscaped, where plantings have not matured. The original was designed by Lloyd Steffgen, architect, of Altadena, Calif.

The built-up posts have a creosoted extension core at the bottom set directly in the soil, and the timbers at the top are supported on box beams. Flagstones with a brick border form the floor. The design can be simplified and floor plan altered to meet individual requirements. Dimensions are given below.

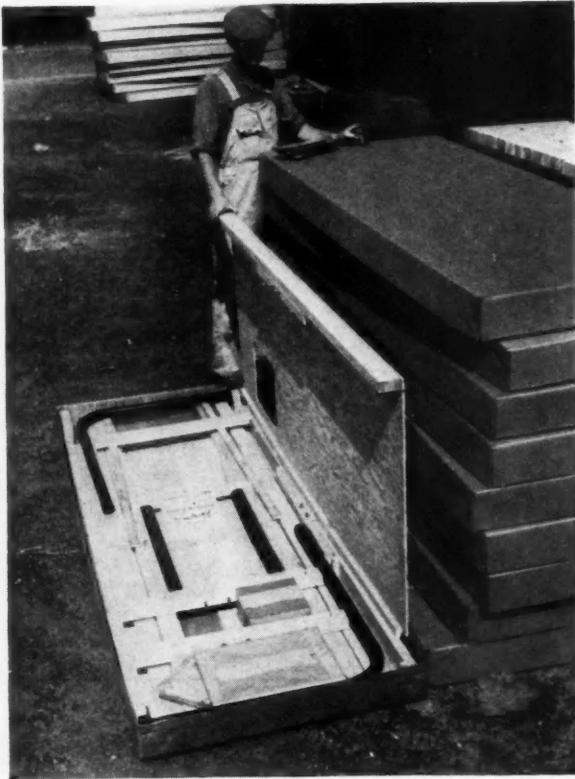
THE handsome garden pergola, as shown at the right, was designed by Lloyd Steffgen, architect, for an Altadena, Calif., home. The classic styling as detailed below can be simplified to the builder's requirements.



# New Items for the Building Industry

## All Complete in a Package

THE STRAND garage door, which was introduced widely to the building industry in a full page announcement, page 4 of February *American Builder*, has been further improved and perfected from a merchandising angle, according to Carl A. Strand, well known building industry figure, who heads the Strand Building Products Company, Birmingham, Michigan. The Strand overhead-type garage door now comes complete in a fiber package with the operating hardware, plywood door units and machined and



STRAND garage door complete in a package, including hardware, plywood panels and bolted wood ribs.

bolted door ribs—all complete for convenient storage in the dealer's stock, easy delivery to the job and quick assembly and hanging. This is the first time, Mr. Strand says, that the one-piece upward-acting garage door "problem" has been solved from the point of view of a truly merchandisable item for the retail dealers and builders.

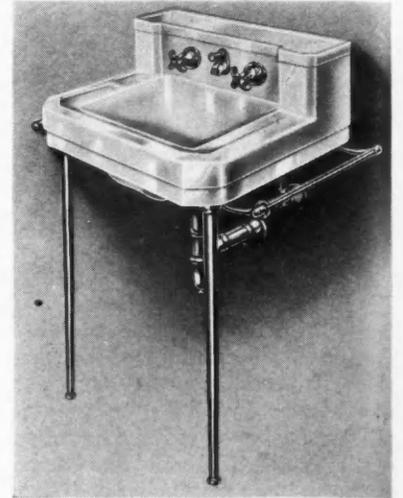
The Strand door package is of convenient size, 7 feet long, 3 feet wide by 5 inches high. Because of the lightness (with strength) of the Strand door, the complete door package is an easy one-man lift.

The simplicity and lightness of this door, and the fact that all parts are compactly assembled in one package, make its assembly and hanging on the job an extremely simple matter. In the Detroit area, where more than 500 Strand doors are being sold and installed monthly, according to Mr. Strand's figures, the average installing time, with one man doing all the work, is less than 60 minutes. The Strand door fits a standard single car opening of 8 feet, or for double door installation 15 feet 11 inches. The standard height of a door opening is 6 feet 11¼ inches. Jobbers, retail dealers, operative builders, and building specialty sales organizations are finding this simple, inexpensive packaged door a real opportunity for volume sales and profits.

## Wilmington Vitreous China Lavatory

THE Speakman Co. of Wilmington, Del., has collaborated with W. A. Case & Son Mfg. Co., Buffalo, N. Y., in presenting the new S-768 Wilmington lavatory with Commander trim. This comes in the popular 22x18-inch size, and has a larger than aver-

age basin area of 15¼x 11¾ inches; the flat shelf area is 21x4½ inches. The front overflow is concealed, and the soap dish built in; the lavatory is made of twice-fired vitreous china, and is available with legs, as illustrated, or in the wall hung model, with or without towel bars, and in white or over 60 colors.



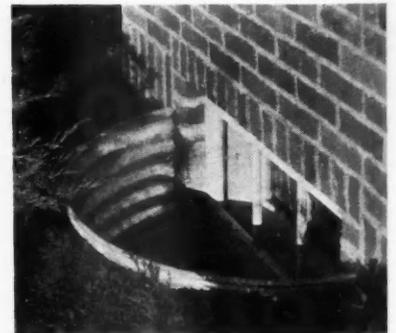
NEW type lavatory with brilliant metal trim.

## Lux-Right Steel Areawall

A METAL window well, designed to be put around basement windows at ground level, and called the Lux-Right steel areawall, is being manufactured by the Saint Paul Corrugating Co., St. Paul, Minn. This device lets in maximum light, keeps water and dirt out, and meets and solves the demand for a window well wall that won't crack, break or crumble under pressure.

Made in one piece from heavy gauge, copper alloy, corrugated steel, hot-dip galvanized after formation in pure zinc, the Lux-Right steel areawall has great strength; it cannot absorb moisture, and is highly rust-resistant, not only because of the copper content, but also because of the hot-dipping in pure zinc after fabrication. The top edge is rolled for safety.

The areawall is a one-piece unit, making it simple to install; no extra angles or attachments are necessary. It anchors tight to the foundation with masonry nails driven into the most convenient masonry joints. Nail holes are pre-punched at each corrugation, and masonry nails are supplied with each unit. The attachment flange on either side is specially flattened so that the unit fits flush with the foundation, which keeps sand and gravel from sifting into the well. The areawall is made in two styles—the round type and the straight type.

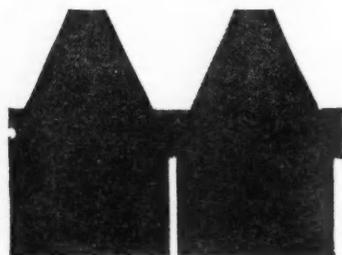


STEEL areawall for basement windows.

## Double Duty Asphalt Shingle

A NEW type of asphalt shingle which can be laid to provide either a square butt or a hexagonal design has just been put on the market in all states east of the Rocky Mountains by Celotex Corporation.

Each unit of the Double Duty shingle is cut from a single sheet  
(Continued to page 78)



ASPHALT shingle can be laid in either square butt or hexagonal design.

● This "Life" Model Home is a part of Wells Quarter Village, Wethersfield, Conn. It was built by Joseph de Paolo.



## A "LIFE" MODEL HOME EQUIPPED FOR MODEL HOME LIFE

● With rapidly gaining momentum, the trend to gas is spreading. Day by day, more architects and builders are specifying gas equipment than ever before.

Why?

Because of one fact alone—it makes houses easier to sell!

Profit figures, re-sale prices, rental statistics . . . no matter how you read them, they show you the nation is "comfort conscious," that the home buyers of today are looking for the "easy living" luxury that gas

and gas equipment have made possible.

On top of this, brokers are finding that sleek, compact gas units are eye-winning salesmen for the houses they've transformed into homes.

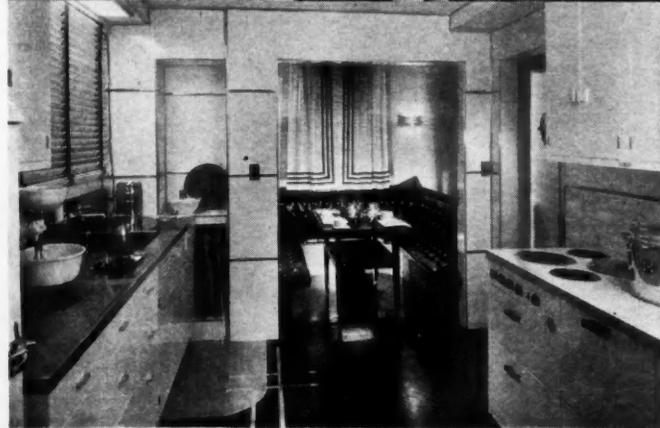
Lower initial cost—better looks—greater convenience—extra comfort—smoother living . . . these are just a few of the reasons for letting "GAS DO THE FOUR BIG JOBS." Ask your local gas company to tell you about the other one—the *extra profit for YOU!*

# AMERICAN GAS ASSOCIATION

LET  
**GAS**  
DO THE 4 BIG JOBS

COOKING  
WATER HEATING  
REFRIGERATION  
HOUSE HEATING

 Be sure the gas appliances you specify bear the Approval Seal of the American Gas Association Testing Laboratories.



**PLEASE THE LADY  
and MAKE THE SALE**

With Walls of Sparkling *Marlite*  
in Kitchen and Bath

● Give her—and him—a generous dash of color and charm in both kitchen and bath—and the house is half-sold. Then clinch the deal by pointing out how Marlite's glass-smooth surface simplifies her cleaning tasks. A damp cloth does the trick . . . Marlite polish keeps it always bright and new. ● It's easy to create outstanding rooms with Marlite—there's over 100 colors and patterns in Marlite, Marlite Genuine Wood-Veneers and \*Carstenite Panels to work with. ● Marlite comes in wall-size panels (4 feet by 12 feet) that your carpenter can easily apply to new or old, curved or flat surfaces in a few hours' time. Write us for our FREE colorful booklet on home interior ideas you can use in the homes you build. See our Catalog in Sweet's 11/34.

\*Carstenite is the trade name of the raw, unfinished panels.  
**MARSH WALL PRODUCTS, INC.**  
73 MARSH PLACE • DOVER, OHIO

See the Marlite Exhibit at the New York World's Fair, Home Building Center.



**FOR CREATING  
BEAUTIFUL INTERIORS**  
WALL-SIZE PANELS IN LUSTROUS COLORS,  
TILE-PATTERNS, MARLITE GENUINE WOOD-  
VENEERS AND \*CARSTENITE PANELS

(Continued from page 76)

to expose two square butts along one side and two hexagonal shapes opposite. The new shingle is extra-sized and is heavier than standard types. It is easy to work with and is quickly applied.

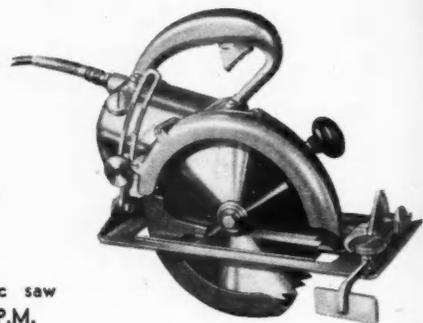
An improved metal expansion seal clip, attached either during application or after the shingles are laid, holds the shingle butt flat to the roof boards. The clip permits expansion and contraction without buckling the shingle and assures maximum roof protection. Tests reveal that these clips will hold shingles in place even with wind velocities reaching cyclone and tornado proportions.

From the viewpoint of the dealer, the Celotex Double Duty asphalt shingle serves four important ends: (1) by stocking a single item instead of two, he can hold his inventory at minimum; (2) the line conserves warehouse space; (3) the Double Duty feature does not limit the variety of colors and textures he may display, and (4) these shingles meet FHA and Fire Underwriters' requirements.

**Dreadnaught Portable Electric Saw**

A NEW, modern type 8" portable electric saw is now being manufactured by the Clarke Sanding Machine Co., Muskegon, Mich. It is designed to give many of the maximum cut advantages of an 8½" saw on either angle cuts or vertical cuts, and cannot be stalled, due to the use of a specially constructed, heavy duty motor.

Powered by a heavy 1¼ HP Universal motor, the Dreadnaught saw is capable of a maximum cut of 2-11/16 inches and a minimum cut of 23/32 inches. On 45-degree angle, the saw cuts a maximum of 2-3/16 inches; blade speed is 3600 R.P.M.

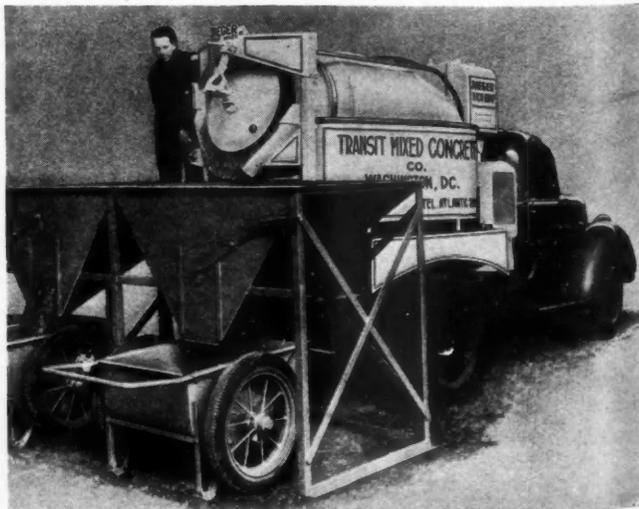


PORTABLE 8" electric saw  
has speed of 3600 R.P.M.

**"High Dump" Truck Mixer**

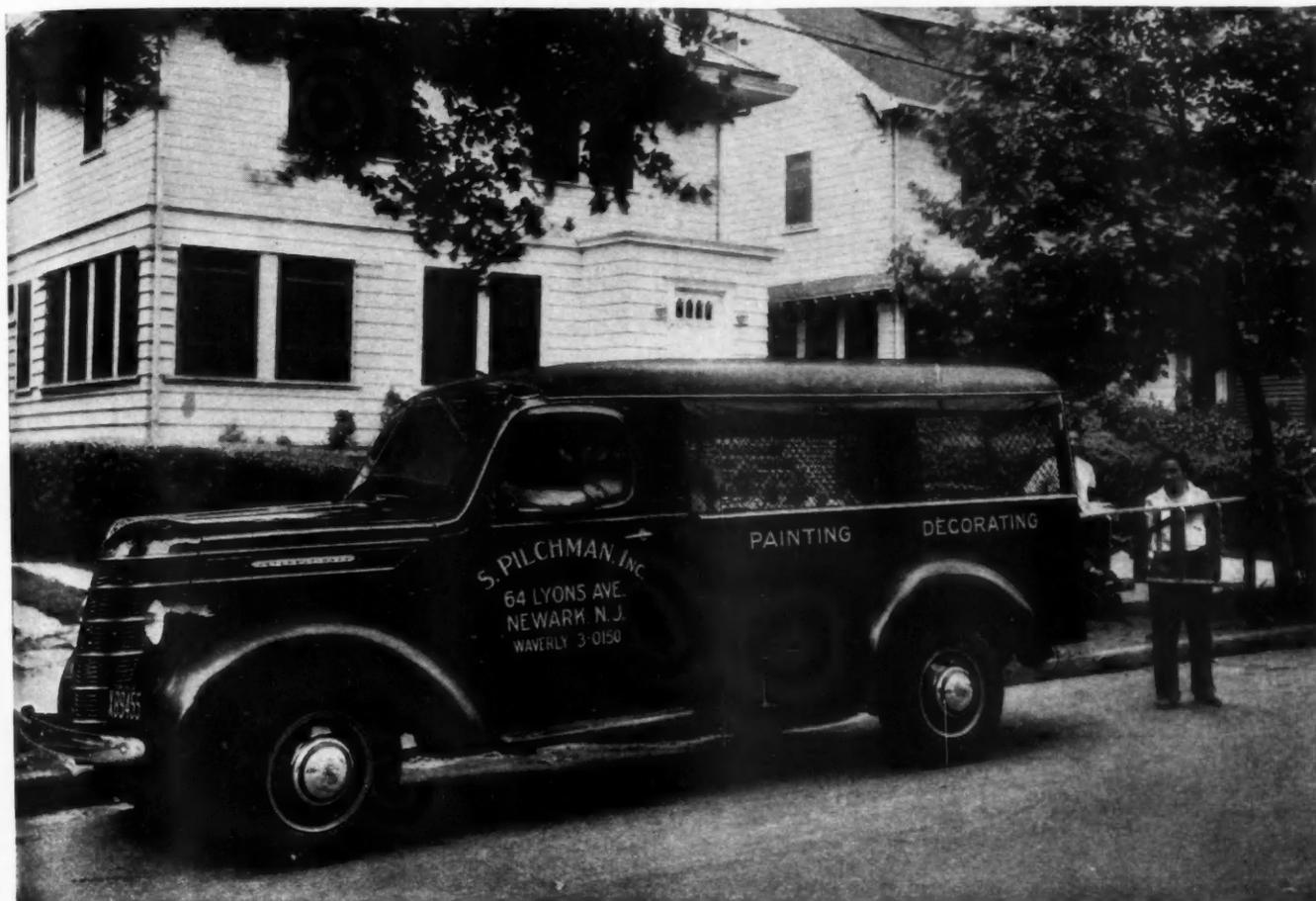
THE Jaeger Machine Co., Columbus, Ohio, has developed a new line of "High Dump" truck mixers and agitators, designed with a high discharge point to meet unusual placing conditions, to deliver concrete, low slump or high, over a wider radius, and to spout it into higher forms, over material piles, into floor hoppers.

"High Dumps" are supplied in three sizes—2 yd., 3 yd. and 4 yd.—with approximately 50 per cent greater capacity when used as agitators. Heavy duty truck mixers are made in sizes up to 6 cu. yds.



"HIGH DUMP" truck mixer in operation.

# ***It takes a TRUCK ENGINE to Stand the Gaff!***



An International Truck, with express body, owned by S. Pilchman, Inc., Newark, N. J., painting and decorating firm.

A passenger car engine is called on to deliver from a *fourth* to a *half* of its full power most of the time. The average heavy-duty TRUCK engine delivers from *three-fourths* to *all* of its power practically all of its working time.

In terms of delivered energy, the output of a TRUCK engine is perhaps *four times as great* per mile of travel. If the average car is disposed of at 50,000 miles, hundreds of hard-working trucks should be entitled to retirement in a few months' time. Nothing could be further from the minds of either the builder or the owner of the good truck. Thousands of International Trucks have traveled

upwards of *two or three hundred thousand miles*, every mile a *truck* mile.

The automobile tests many a fine quality in an engine, but the TRUCK puts up with a *great deal more!* For more than a generation the builders of International Trucks have built ALL-TRUCK trucks—and TRUCKS ONLY. This will give you some idea as to why men buy more heavy-duty Internationals than any other make.

For complete details on International Trucks, ask the nearby International dealer or branch. Sizes from Half-Ton units to powerful Six-Wheelers.

**INTERNATIONAL HARVESTER COMPANY**

(Incorporated)

**180 North Michigan Avenue, Chicago, Illinois**

# **INTERNATIONAL TRUCKS**

This colorful and highly practical floor of Armstrong's Asphalt Tile, in the Eastman Kodak Company's showroom in Milwaukee, was specified by Architects Kirchoff & Rose—installed by J. F. Durner Co.



## CAN YOU TALK FLOOR ECONOMY TO YOUR PROSPECTS?

**Y**OU increase your chances of getting prospects to sign if you can point to trouble-free, decorative floors. That's why Armstrong's Asphalt Tile is a wise—as well as an economical—flooring choice.

From a would-be tenant's point of view, this resilient material is a money-saver. Maintenance is easy and inexpensive—simply routine sweeping and occasional washing and waxing. Costly re-finishing is not needed. The smooth, even surface of the floor will not become a catch-all for dust and dirt. Its rich colorings run right through the material so they will not scuff or wear off. Furthermore it can be laid in bright smart designs like the one illustrated above.

From *your own* point of view, low-cost Armstrong's Asphalt Tile is a wise choice when your building budget is limited. It is quick and economical to install. It is available in attractive plain and marble effects—suitable for every type of interior and almost any color scheme imaginable. Furthermore, it is the only type of resilient floor which is recommended for use over concrete in direct contact with the ground.

### Send for Idea Booklet

For full information, see Sweet's or send for free, illustrated booklet, "Floor Beauty at Low Cost." Write today to Armstrong Cork Company, Building Materials Division, 1233 State St., Lancaster, Pennsylvania.



## ARMSTRONG'S FLOORS ASPHALT TILE

Rubber Tile - Linotile (Oil-Bonded) - Linoleum - Cork Tile - Linowall Wall Covering

# News of the Month

## Building Activities and Meetings

### Residential Building Volume in May Sets New High, Exceeding April

**F**OR the month of May, residential contracts in 37 eastern states set a new high record since August 1929 at \$145,912,000, according to F. W. Dodge figures. This represents an increase of 8 per cent over April, and 9 per cent over May last year. The number of houses built this May increased 29 per cent over May 1939—the figures being 22,939 and 18,262, respectively. The first 15 days of June showed a decrease from the same period of May, but were approximately 25 per cent ahead of June 1-15 of last year.

Statistics for the four classes of construction are as follows:

	June 1-15, '40	June 1-15, '39	May 1940
37 Eastern States			
Residential .....	\$ 60,107,000	\$ 48,708,000	\$145,912,000
Non-Residential .....	35,382,000	35,587,000	90,164,000
Public Works .....	37,148,000	32,816,000	81,261,000
Utilities .....	8,043,000	5,444,000	11,577,000
Total .....	\$140,680,000	\$122,555,000	\$328,914,000

### Cassidy and Hart New J-M Officers

**L.** M. CASSIDY and L. C. Hart were recently elected as vice presidents of Johns-Manville. Mr. Cassidy was at the same time appointed general manager of the building materials department and a member of the Officers Board. Mr. Hart, in addition to his new duties, will continue as general sales manager of this department. The reorganization has been effected to fill the vacancy caused by the recent death of P. A. Andrews, vice president in charge of the building materials department.

Immediately following Mr. Cassidy's graduation in 1926 from the Wharton School of Finance and Commerce of the University of Pennsylvania, he began his career with Johns-Manville as a salesman in metropolitan New Jersey. In 1932 he became manager of the Newark office and in 1933 was transferred to New York headquarters as assistant to the vice president in charge of building materials. Three years later he became general merchandise manager.

Mr. Hart joined Johns-Manville as an acoustical engineer in New York City after receiving his engineering degree from Massachusetts Institute of Technology in 1913. After holding several posts with the company in its Western Division, he became in 1933 assistant sales manager and in 1935 general sales manager of the building materials department.



NEW J-M vice presidents, L. M. Cassidy (left) and L. C. Hart.

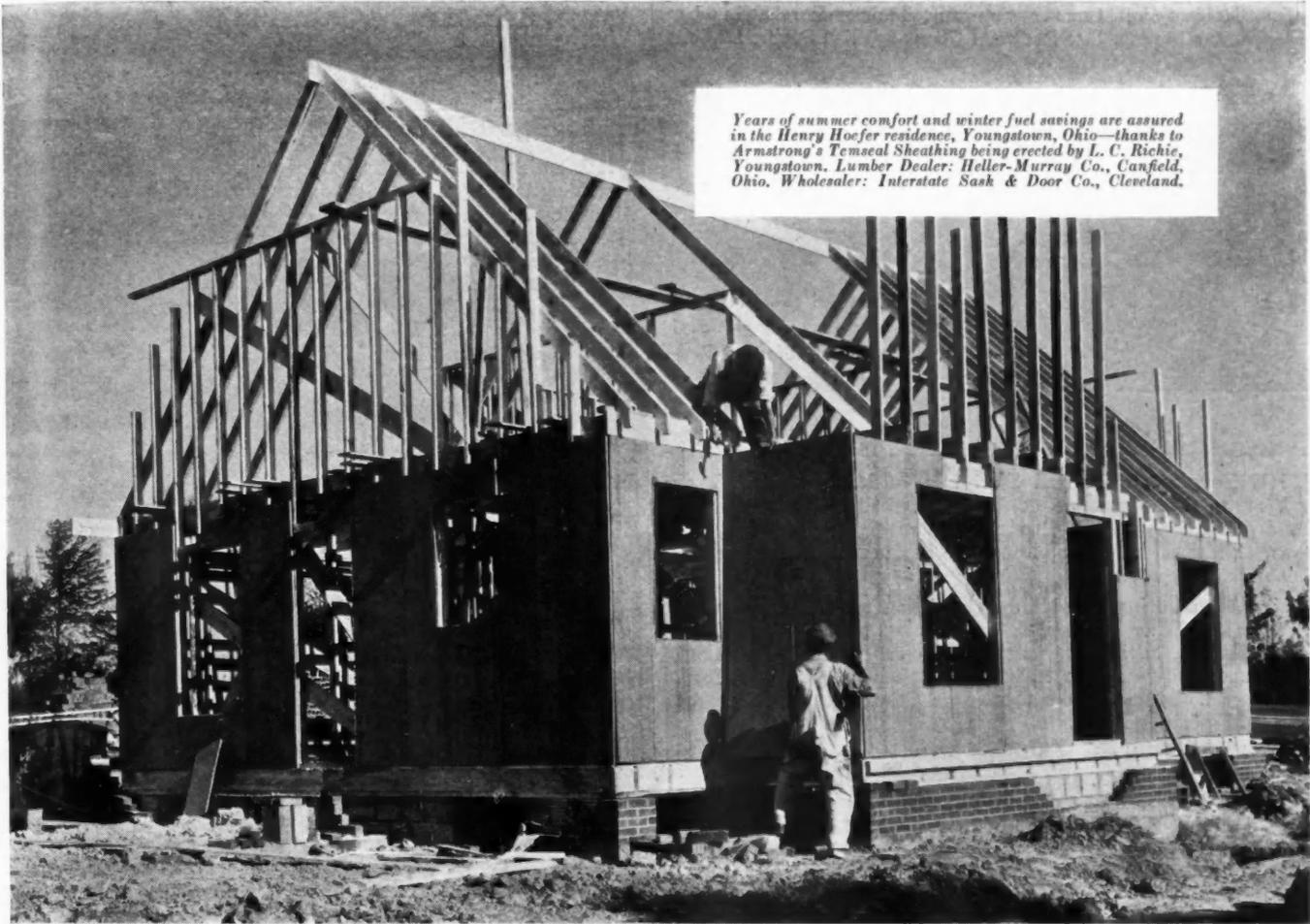
### Kenneth Smith to Promote Redwood

**K**ENNETH SMITH of Los Angeles has been appointed executive vice-president of the California Redwood Association, San Francisco, according to an announcement by Leonard C. Hammond, president of that association.

He was formerly secretary-manager of the Lumber and Allied Products Institute of Los Angeles, composed of the retail dealers in that market—one of the largest in the country. In that capacity, and previously as sales manager of E. K. Wood Lumber Company, Los Angeles, he acquired an intimate acquaintance with the problems of the retailer.

The California Redwood Association, which he now directs, is composed of seven large-scale producers of redwood lumber—Dolbeier & Carson Lumber Company, Hammond Redwood Com-

(Continued to page 82)



Years of summer comfort and winter fuel savings are assured in the Henry Hoefler residence, Youngstown, Ohio—thanks to Armstrong's Temseal Sheathing being erected by L. C. Richie, Youngstown. Lumber Dealer: Heller-Murray Co., Canfield, Ohio. Wholesaler: Interstate Sash & Door Co., Cleveland.

## CAN YOU TALK *Fuel Economy* TO YOUR PROSPECTS?

**YOU CAN—IF YOU INSULATE WITH TEMSEAL SHEATHING!**

**Q**UESTIONS on the tips of prospects' tongues generally have to do with the comfort and economy features built into your houses. Home owners want their homes to be cool in summer—warm and inexpensive to heat in winter. And that's what you can assure them—for years on end—when your houses are sheathed with Armstrong's Temseal Sheathing!

Temseal's insulating efficiency is long-lasting, because it's double-sealed at the factory. First it's coated with flexible, non-cracking asphalt, and then with tough kraft paper. Infiltration of air and moisture is prevented.

Armstrong's Temseal Sheathing has many money-saving features for the builder, too. The use of building paper or felt is unneces-

sary. It sheathes and insulates at one low cost, and in one time-saving operation. In addition, this efficient material provides 50% more bracing strength than standard wood sheathing laid horizontally—as much as standard wood sheathing erected on the diagonal.

Temseal Sheathing is available in the standard thickness of  $2\frac{5}{32}$ " , in boards 4' wide by 8', 8½', 9', 9½', 10', and 12' long; also in the convenient 2' x 8' size. Near-by stocks assure prompt delivery.

Next time specifications call for insulation, use this dependable, double-purpose sheathing made by the makers of Armstrong's Lino-leum. It will save you time and money on the job, add extra sales features to your houses, and assure lasting satisfaction for your customers. Write *today* for a sample and complete information about Temseal Sheathing. Address Armstrong Cork Co., Building Materials Division, 979 Concord St., Lancaster, Pa.



### ARMSTRONG'S TEMLOK INSULATION

De Luxe Interior Finishes • Lath • Sheathing • Hardboards • Monowall

pany, Hobbs Wall Lumber Company, Holmes-Eureka Lumber Company, Monterey Bay Redwood Company, The Pacific Lumber Company, and Union Lumber Company.



KENNETH SMITH, new executive vice-president of the California Redwood Association.

### Adams and Densmore Join Mullins

THE Youngstown Pressed Steel Div. of Mullins Mfg. Corp., Warren, Ohio, has announced that Marshall Adams has joined its organization and will direct the merchandising of "Youngstown" kitchens, and R. E. Densmore has been appointed as national sales supervisor.

Mr. Adams brings a wide merchandising experience from the electrical appliance, heating, air conditioning, plumbing and building industries, having previously been connected with Westinghouse and with American Radiator and Standard Sanitary Corp. Mr. Densmore comes from the Norge Corp., Detroit, where he was field sales manager of all appliances.

### Mellecker Goes to Protection Products

JOHN B. MELLECKER, formerly director of the research laboratory, Curtis Companies Inc., has joined the staff of Protection Products Manufacturing Company, Kalamazoo, Mich., manufacturers of Woodlife. Mr. Mellecker will represent Protection in the field of technical sales and service.

## Tile Industry Accepts Consent Decree

Department of Justice Building Probe Leads to Agreement to Permit Unrestricted Use of Floor and Wall Tile

THE anti-monopoly drive by the federal government against building industry restraints won important results early in June when the "Tile Case" was settled before Federal Judge Michael L. Igoe, Chicago, by means of a consent decree, agreed to and signed by the tile contractors associations, and the tile setters unions. Thus the anti-trust division of the Department of Justice with Thurman Arnold, Assistant Attorney General, in charge has cleaned up what has been generally considered the sorest spot, restraintwise, in the entire field of building, and has restored ceramic tile to a place where it can again become a popular and widely used building material.

In reporting the settlement of this significant and spotlighted case in the department's building industry anti-trust campaign, Edwin A. Lahey of the *Chicago Daily News* staff wrote:

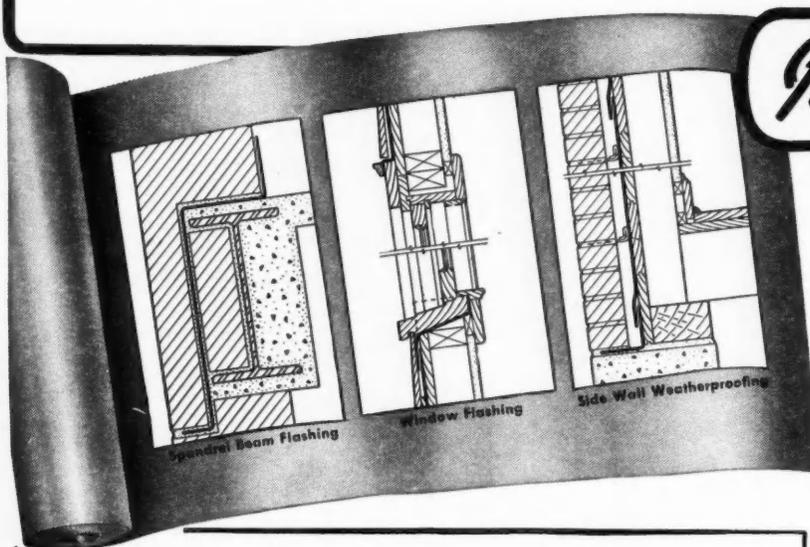
"The building tile industry in the United States took a perpetual pledge before Federal Judge Michael L. Igoe today to abstain from price fixing and monopolistic practices. The pledge was contained in a consent decree revolutionary in character, in that an international union—the bricklayers—and a national association of contractors assumed the responsibility of policing the industry and enforcing the Sherman anti-trust act."

The *Daily News* then went on to say that the decree was a decided victory in the government campaign against monopoly and restraint in the building industry, since it opens an important section of the building field to free and honest competition.

Thurman Arnold, assistant attorney general in charge of the anti-trust division, came from Washington to present the decree with his Chicago assistant, Leo F. Tierney. Mr. Arnold termed the decree "one of the most important forward steps in the department's attempts to eliminate unreasonable restraints in the building trades." He said that the attitude of the Bricklayers' International Union was "most commendable, and it is hoped that

(Continued to page 84)

Seal against water, moisture and vapor with metal!



*It's Best by Test!*

Anaconda "Electro-Sheet" Copper is rustproof, verminproof, non-inflammable, strong and impervious to air, water and dampness. When reinforced with building papers, fabric or asphaltic compounds, it is ideal for sealing buildings against heat, cold and wind.

Recent tests showed that of twenty-one different materials, metallic products including four reinforced "Electro-Sheet" types were the only ones impervious to water and water vapor both before and after accelerated aging.

Write today for free samples of these materials and names of the manufacturers. (We do not make or sell "Electro-Sheet" bonded to other materials, but furnish the plain copper to leading manufacturers.)

#### ITS USES AND AVAILABILITY

In thicknesses of 1 oz. (.0013"), 2 oz. (.0027"), 3 oz. (.004") and 5 oz. (.0065")—bonded to high-grade building papers, fabric and asphaltic compounds—"Electro-Sheet" Copper is widely used for door and window flashing . . . foundation waterproofing . . . and side wall weatherproofing behind wood, stucco, brick and stone veneer; also for concealed spandrel beam flashing and shower pans.

Reinforced "Electro-Sheet," supplied in compact rolls, is extremely flexible and easy to install. It is generally available from material dealers.

4081

**"ELECTRO-SHEET"**  
**Anaconda Copper**

THE AMERICAN BRASS COMPANY  
General Offices: Waterbury, Connecticut

In Canada: Anaconda American Brass Ltd., New Toronto, Ont.  
Subsidiary of Anaconda Copper Mining Company



# THE GARAGE DOOR OF TOMORROW

The TOWN OF TOMORROW at the New York World's Fair displays all that is newest and best in the building industry. Its homes, large and small, are designed for comfort, convenience and lasting efficiency.

And there you will find The "OVERHEAD DOOR" with the MIRACLE WEDGE . . . the door that wedges tightly, yet opens easily, blends with every type of construction, fits any purse or purpose. Use this garage door of tomorrow in the homes of TODAY! It is priced as low as a good door can be made.

EXPERTLY INSTALLED  
BY A NATION-WIDE SALES-INSTALLATION SERVICE!  
**OVERHEAD DOOR CORPORATION**  
HARTFORD CITY, INDIANA, U.S.A.



Demonstration Home No. 11—  
THE LITTLE GREY HOUSE



Demonstration Home No. 1—  
THE GARDEN HOME



Demonstration Home No. 3—  
THE THRESHOLD REGENCY HOUSE



Demonstration Home No. 12—  
THE NEW ENGLAND HOME



Demonstration Home No. 8—  
THE DUAL DUTY HOME

The  
**"OVERHEAD DOOR"**  
MADE WITH  
WITH THE  
**MIRACLE WEDGE**

Please send information and free literature on doors for the purpose checked:

AB-740

NAME .....

ADDRESS .....

CITY ..... STATE .....

- Private Garage
- Public Garage
- Warehouse
- Factory
- Greasing Station
- Other Buildings
- Wood Sections
- Steel Sections
- Hand Operated
- Electric
- Standard Model
- Master Model

**OVERHEAD DOOR CORPORATION**  
Hartford City, Indiana, U.S.A.

**EVERY BUILDER'S  
BEST BET!**

**TRU-FIT**  
Durable Douglas Fir  
Entrance Doors

- DURABLE
- FACTORY-FITTED
- PACKAGED
- SCUFF-STRIPPED
- TRADE MARKED

You can order all stock Douglas Fir doors pre-fitted, at slight extra cost, and grade-marked!

● Entrance doors are important. Their beauty helps sell a house . . . their durability helps keep it sold. You get both beauty and long life in Tru-Fit Douglas Fir entrance doors. Made in 27 handsome designs from old-growth Douglas Fir, the wood that lasts longer, Tru-Fit entrance doors come pre-fitted, ready to hang, without excessive sawing and planing. They come individually wrapped and scuff-stripped, which means a clean, trim, perfect door every time. Tru-Fit entrance doors cost no more than other good doors. Write Fir Door Institute, Tacoma, Wash., for free color catalog. Then order from your dealer.

(Continued from page 82)

its action will become a model for the elimination of restraints by labor unions in other industries."

The decree is national in scope, and grew out of three indictments involving local tile contractors associations and locals of the Bricklayers' International Union in Chicago, Detroit and St. Louis.

In view of the indictments involving their subordinate organizations, the Tile Contractors' Association of America, Inc., and the Bricklayers' International Union and their officers became defendants and subscribers to the consent decree.

The police powers of the union are dedicated in the decree to strict enforcement of a highly particularized program of good conduct. Hitherto, in this and other industries, the police powers of unions have been used, so it is claimed, to enforce price-fixing conspiracies between bosses and business agents. Previously, it has been alleged, the union boycotted contractors not approved by the contractors' associations; refused to install tile of manufacturers not in "good standing"; refused to allow individual contractors to work with tools; refused to work for a contractor who sold unset tile to individuals; curtailed the freedom of contractors in the employment of workers; denied its own members freedom of transfer from one local to another; limited the amount of work a tile layer could perform.

All this, and more, the union agreed should be prohibited perpetually, under pain of punishment for contempt of court.

The tile contractors' associations agree to discontinue bid depositories, stool pigeon activities against nonmembers, and collusive arrangements with union officials.

The decree provides that the attorney general under reasonable conditions, shall have access to the records of the international union and the tile association and their subsidiary locals to determine at any time whether they are violating the decree.

The right of the union to strike and to "lawfully seek to attain and carry out the legitimate and proper purpose and functions of a labor union" are protected in the consent decree.

### How to Avoid Illegal Restraints

IN an address before the annual meeting of the National American Wholesale Lumber Association on June 4 at Rye, New York, William W. Woodbridge, Secretary-Manager of the Red Cedar Shingle Bureau, told of his conferences with Thurman Arnold and others in the Department of Justice as to what is proper and what illegal for building industry organizations to do in view of the present anti-trade-restraint drive. Referring to his own association activities, he said:

"As many of you well know, there is possibly no branch of American industry which has suffered more than has wooden shingles from the attacks of groups, organizations and associations determined apparently to thrust our product into oblivion. I believe that many of these activities have definitely been restraints of trade. These matters are being given our most exhaustive study—we have on file reports and surveys of more than a thousand pages prepared by members of our staff since the first of this year 1940. We are convinced that we can show that in many instances shingles have been unjustly restrained. It may be that Mr. Thurman Arnold or his department will be of great value to our industry—most certainly we could not reasonably protest his activities when our industry, we believe, has suffered so seriously from unjust restraints of trade.

"On the other hand, it may be that our association is in some manner restraining trade. If it is, we want to know it, and so we go to Mr. Arnold and the Department of Justice, asking for guidance and advice. Recently with him I discussed at some length his activities in the field of trade association. He seemed to wonder why some of the trade associations have not more closely followed the recent developments in their fields.

"'There's the Madison Oil Case,' Mr. Arnold said to me. 'It is a sweeping decision which should be studied by all trade associations. It raises many questions as to past practices. Any trade association, however, which is puzzled about how the law affects it and desires to clarify its position, can use the procedure which the Department of Justice has established to meet such cases. The procedure is based on the Appalachian Coals case. In that case, a number of coal concerns established a marketing agency. The validity of that agency was questioned by the Department. The case was appealed to the Supreme Court, which said in effect that

(Continued to page 86)

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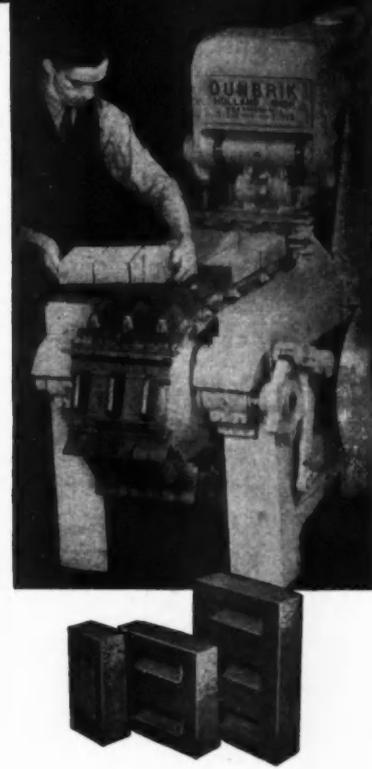
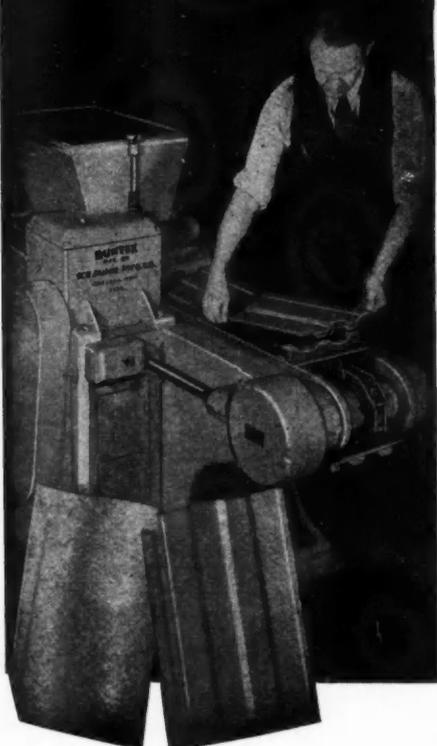
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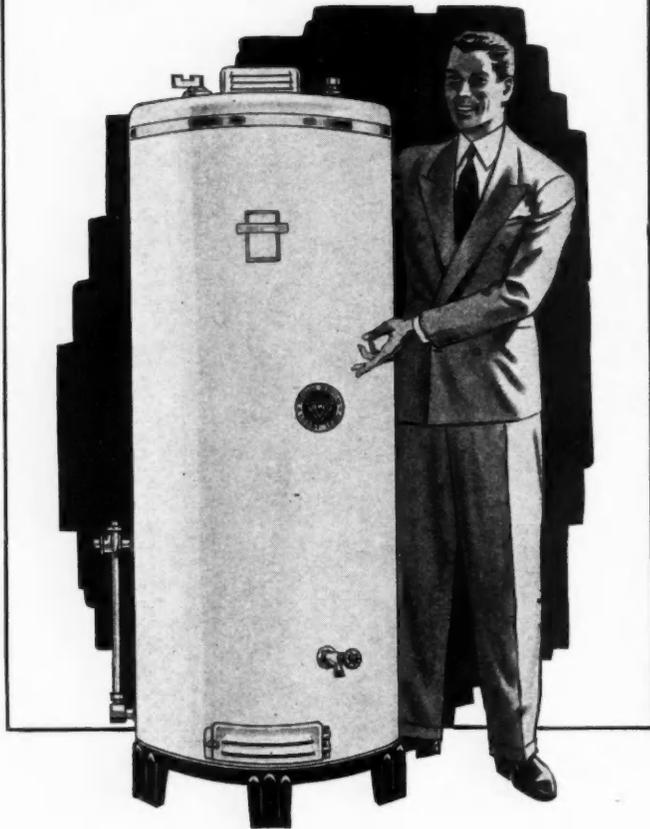
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(Continued from page 84)

there was not sufficient domination of the market to make the plan on its face illegal; however, Mr. Justice Hughes said that the case would be kept open, and in the event of actual performance of the plan resulting in a legal restraint of trade, the government could proceed at a later time by way of injunction.

"There are many such cases," continued Mr. Arnold, "where a reasonable plan may be unreasonable because of the unexpected way it appears to operate. Mr. Justice Hughes' method relieves from criminal prosecution anyone with a border-line case who submits such a plan. There is no penalty to a civil suit, and so all that happens, if the plan does not work out, is an injunction. The Department of Justice has not the men nor the funds available to present to the courts all of the memoranda and plans which are brought before it. Therefore, it is using the precedent of the Appalachian Coals case in this way. If a trade association submits the facts of a proposed plan to the Department, the Department will do one of two things. First it will say positively that it is illegal on its face; or, two, it will tell them nothing, but simply state that the legality of the plan depends on its performance. This means that if in the future the plan is questioned it will be on the civil side of the docket. The consent decree is unnecessary in the ordinary case. However, it does give the following advantages:

"1. It is a very speedy method of settling any questions which may arise between the association and the Department because it requires the institution of no new suit.

"2. It automatically eliminates the danger of criminal prosecution because the question will be brought up before the court that signed the decree on an informal order.

"3. It gives a definite charter for the activities of the association which is much more detailed and explicit than simply the submission of a plan to the Department with a letter of acknowledgment.

"Consent decrees in one branch of an industry are not precedents for any other branch of that industry. What combinations are reasonable are too dependent on the particular facts to be allowed to use these decrees for any precedent whatever. They should be looked at as a protection for particular defendants, not as a precedent for other defendants."

Mr. Woodbridge, reporting these points of guidance from the Assistant Attorney General, then said to his wholesale lumber audience:

"Some question has arisen about the consent decree in the Southern Pine Association; and a consent decree entered into in the container industry, which seems to allow the use of a price formula and thus seems to give the container industry more freedom than the lumber industry. That has been called to the attention of the Department of Justice. I am informed that the container decree was negotiated some time before the Madison Oil case. The Department now feels that because of the Madison Oil case it should make a motion to modify the container decree."

\*\*\*

### Colored Nails to Match Wallboards

THE Independent Nail & Packing Co., Bridgewater, Mass., is now manufacturing Kolorpins, which are strong, thin, hardened steel nails with sharp points and small, inconspicuous heads enameled in colors to match or blend with the various shades and colors available in colored wallboards.

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## The STEEL SQUARE—

(Continued from page 73)

As will be seen from Figs. 4A, 5 and 6, this cut will not be made square across the hip rafter but will be made at an angle with the edges of the rafter.

### The Seat Cut for Hip Rafters

At the left hand end of Fig. 8 is shown the position of the steel square on the side of the piece of stuff from which the hip rafter is to be cut. In this case the edge of the stuff which is to be the top edge or "back" of the hip rafter is *away* from the workman, and is used as a "measuring line." Starting with the point A, the square is placed as shown by the dotted lines in order to locate (along the outside edge of the tongue) the line of the outside of the wall. If P is the point on the side of the piece of stuff where the outside upper edge of the wall plate intersects the side of the hip rafter as this rafter rests on (and is cut over), the wall plate, then the square in marking off the line for the seat cut must be placed on the stuff a short distance *away* from the point P in the direction of the ridge or, in other words, away from the lower end of the rafter as shown by the full lines. This will have the effect of locating the seat cut a little higher up on the rafter than it would be if it passed through the point P and when the rafter is put in place after the seat cut is made it will be set down slightly lower and its top edge or "back" will not project above the two roof surfaces (which intersect each other in the hip line) as it would do if the hip rafter were to be set in the frame in such a way that the hip line would lie on, or *below*, the top edge of the rafter. It is very hard to understand why it is that the two upper edges of the hip rafter will project above the roof surfaces unless the rafter is dropped. In Fig. 1 imagine the hip rafter A-B to be cut with a saw straight through along the line marked X-X, the cut to be made at right angles to the top edge or "back" of the hip rafter and to be made right through the roof boarding which is understood to be laid on top of the rafters. Let Fig. 9 be a sectional view looking straight at the cut end of the hip rafter. Lines C-F would be the lines in which the saw would cut through the under side of the roof boarding which rests directly on top of the rafters and also represent the lines of the top edges of the *jack* rafters, which would be seen sloping downward towards the wall plates. The points marked L would be the two outside top edges of the hip rafter and the illustration shows how they would project above the lines of the tops of the jack rafters and the under side of the roof boarding and would interfere with the laying of the roof boarding, unless these projecting corners are cut off.

The cutting off of these corners is called "backing" the hip rafter and will be explained later in this article, but as backing is troublesome, another method will be described first.

Fig. 10 shows how the trouble can be overcome by dropping the hip rafter down a little way so that its top outside edges will come below the under side of the roof boarding. This can be accomplished by adjusting the

(Continued to page 88)

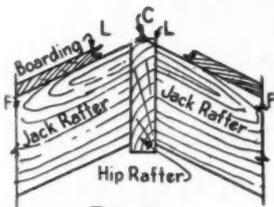


FIG. 9

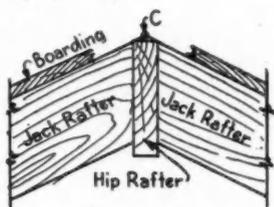


FIG. 10

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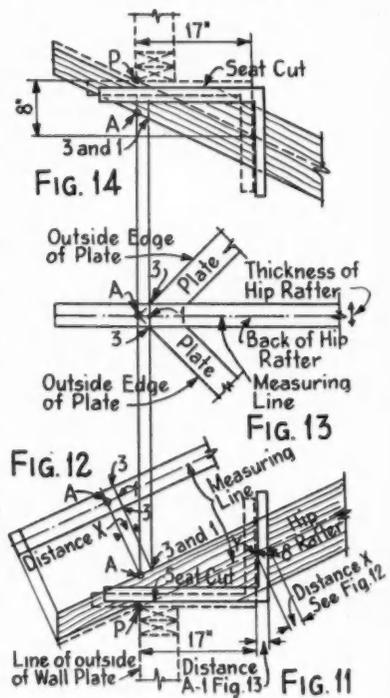
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## The STEEL SQUARE—

(Continued from page 87)

steel square properly when the seat cut is being laid out as illustrated in Figs. 11 to 14 inclusive. Fig. 11 shows that the square must be moved up and back from the position which it would occupy if the outside edge of the blade or body passed through the point P, and Fig. 13 shows how the distance through which the square should be moved back is determined and that it depends upon the thickness of the hip rafter. Fig. 13 is similar to the left hand end of Fig. 4A, showing the wall plates and the hip rafter, and shows in plan view the wall plates at the corner of a building and the top edge or "back" of the hip rafter as it would appear if one were looking straight down upon it where the rafter is cut over the wall plates. In Fig. 13 let 3 and 3 be two points one on each side of the hip rafter and on the outside edges of the top surface or "back" of the rafter directly above the points in which the top outside edges of the wall plates intersect the two sides of the hip rafter. Then the distance 3-3 is the same as the width of the hip rafter—about 3 or 4 inches. Let point 1 be a point on the line on the top surface, or back, of the hip rafter joining the two points marked 3, 3 and let this point 1 be exactly in the middle of the back of the hip rafter and therefore on the "Measuring Line" drawn lengthwise down the middle of the back of the hip rafter. Let point A (Fig. 13) be another point on this Measuring Line located directly over the corner where the two outside edges of the two wall plates meet. Now a little study of Fig. 13 will show that if the top surface, or "back," of the hip rafter is square with the two sides of the rafter, then the point marked 1 must be at the same height as the two points on the edges of the rafter marked 3, 3. Because the hip rafter slopes up towards the ridge from the point A, it will be seen that point 1 must be higher than point A. Therefore, the two points on the edges of the back of the rafter marked 3, 3, must also be higher up than point A. Then, if point A is in the roof surface, points 3 must be higher up than the roof surface and must project above the roof surface because all points in the roof surface on lines parallel to the outside top edges of the wall plates are at the same level. The two points marked 3 are on the outside edges of the "back" of the hip rafter and these edges cannot be allowed to project above the roof surfaces, therefore either these projecting edges must be cut off, that is, the rafter must be "backed" or else the entire hip rafter must be dropped down or lowered until the two points marked 3 in Fig. 13 lie in the roof surface. Of course when the rafter is dropped, the point A is dropped with it and will consequently be somewhat below the roof surface.

In order that the hip rafter may set lower down in the roof frame than it would be if the center line of the back



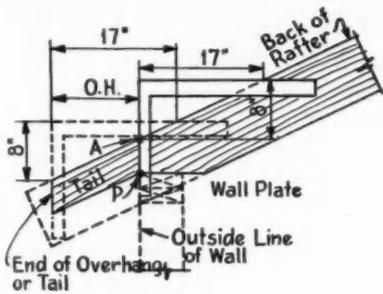


FIG. 15

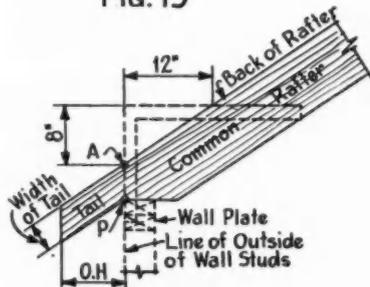


FIG. 16

of the rafter was in the same position as the theoretical hip line (the line in which the two surfaces formed by the under side of the roof boarding on each side of the hip would meet), the steel square must be applied to the stuff when marking off the seat cut in such a way that the seat cut will be in the proper position with reference to the top surface or "back" of the hip rafter. This condition is illustrated by Fig. 11, but before the correct position for the square

can be settled, a little preparatory work must be done.

In Fig. 8, is shown the end of the piece of plank from which the hip rafter is to be cut. The top edge (which will be the "back" of the rafter) should have been dressed straight and true. The first thing to do is to locate the point A and next to lay out the line A-P which is the line of the outside vertical edge of the wall plate at the corner of the building as shown in Fig. 11. In Fig. 15 place the steel square near end as shown by the dotted lines with the 17-inch mark on the outside edge of the blade and the figure on the outside edge of the tongue corresponding to the rise-per-foot-run of the roof (8" in this case), both exactly on the dressed top edge which will be the "back" of the rafter. Now a line scratched on the side of the stuff along the outside edge of the tongue of the square will be the end of the overhang at the lower end of the hip rafter. Measure off along the outside edge of the blade of the square when it is in this position a distance O-H, in Fig. 15, which will be equal to  $1\frac{3}{8}$  times the horizontal distance from the outside face of the wall studs to the ends of the common rafters where they will overhang the wall at the eaves (distance O-H in Fig. 16). Make a mark at this point and slide the square along to the position shown by the full lines in Fig. 15, so that the outside edge of the tongue will pass through the mark just made and so that the 8 on the outside edge of the tongue and the 17 on the outside edge of the blade will both continue to be exactly on the dressed top edge. Now draw a line A-P (Fig. 15) along the outside edge of the tongue and this will be the line of the outside vertical edge of the wall plate at the corner and the point where this line crosses the top edge of the stuff will be the point A. Another point on this same line which it will be necessary to locate is the point P, where the outside top edge of the wall plate meets the side of the hip rafter as this rafter rests on, or is cut over, the wall plate. The line described above (line A-P in Fig. 15) will be a *plumb* line and there will be a similar *plumb* line on the side of each of the common rafters in the roof frame as shown by line A-P in Fig. 16, which is a side view of the lower end of a common rafter in the same roof frame which contains the hip rafter shown in Fig. 15. The point A in Fig. 16 will be the point on the top edge or "back" of the common rafter where the line of the outside face of the wall studs (extended) intersects the line of the back

(Continued to page 90)

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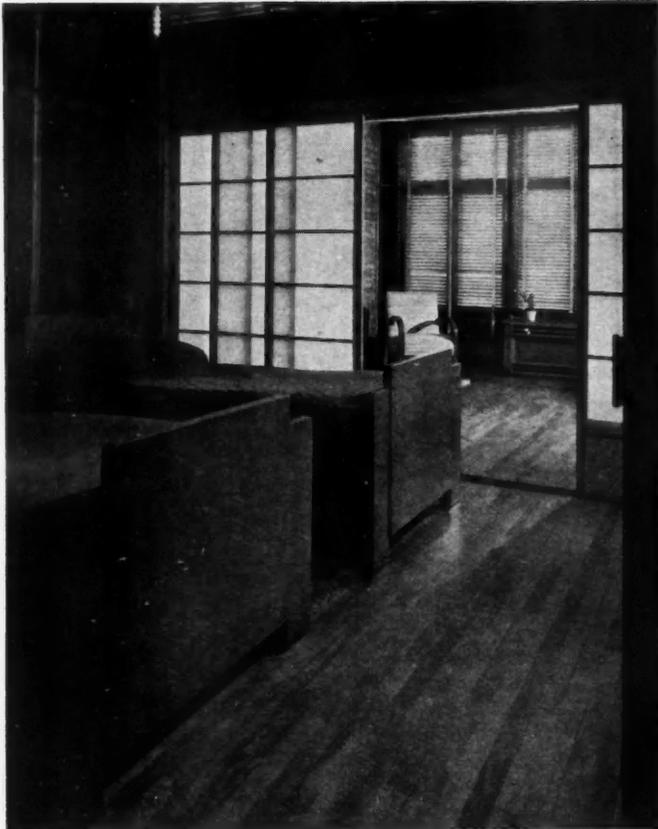
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## The STEEL SQUARE—

(Continued from page 89)

of the common rafter and is selected far enough from the lower end of the common rafter so that the horizontal or level distance O-H will be equal to the required horizontal or level overhang of the tail of the common rafter beyond the line of the outside face of the wall studs. The distance A-P on the side of the common rafters (Fig. 16) will have been chosen and made sufficient so that the common rafters will have a good enough seat on the wall plate and so that the tail of the common rafters will have the desired width. This plumb distance A-P (Fig. 16) having been chosen for the common rafters, then the plumb distance A-P for the *hip* rafter (Fig. 15) will be the same, both lines being plumb lines and both being the line of the outside face of the wall plate. In this way the position of the point P (Fig. 15) where the top outside edge of the wall plate intersects the side of the hip rafter will be determined.

Having found the point P (Fig. 11) on the side of the hip rafter, the "Measuring Line" can be drawn through it parallel to the dressed top edge of the rafter. Then the steel square can be laid on the side of the piece of stuff as shown by the dotted lines in Fig. 11 with the 17 inch mark on the outside edge of the blade or body of the square on the point P' and the inch mark on the outside edge of the tongue corresponding to the rise-per-foot-run of the roof (8 inches in this case), also on the measuring line further along to the right (point Y in Fig. 11). This would be the correct position of the square for marking off the seat cut if the hip rafter were not going to be dropped down in order to keep its edges from projecting outside of the roof surfaces. In order to make the hip rafter take a lower position in the roof frame and avoid the necessity for trimming off the upper outside edges—(a process which is called "backing the rafter"), it is necessary to move the square along the measuring line to the right and away from the point P (Fig. 11) to the position shown by the full lines in Fig. 11. The square will have to be moved along a distance marked "distance X" in Fig. 11, keeping the 17 inch mark on the outside edge of the blade and the eight inch mark on the outside edge of the tongue always on the "Measuring Line." The amount of the distance by which the square must be moved along the measuring line—(marked "Distance X" in Fig. 11), is determined by the distance between Point A and point 1 measured along the top edge of the rafter as shown in Fig. 12. Fig. 12 shows a view of the top edge or "back" of the hip rafter at its lower end where it rests on the wall plate. The dotted "Measuring line" is drawn lengthwise through the middle of the back of the rafter. Point A is a point directly over the outside face of the wall plates where they meet at the corner of the building and point 3 are points on the top edges of the rafter directly over the points where the sides of the hip rafter cross over the outside faces of the wall plates. Point 1 is on the Measuring line where it intersects a line joining the two points marked 3, and distance A-1 is the distance through which the steel square should be moved along the measuring line on the side of the rafter from the position shown by the dotted lines in Fig. 11 to the position shown by the full lines in this figure in order to raise the seat cut and thus lower the position of the hip rafter in the roof frame. It will be seen from a study of Fig. 13 that this distance depends upon the thickness of the hip rafter and is greater when the hip rafter is thicker and less when the hip rafter is thinner. After the square has been moved to the position shown by the full lines in Fig. 11, a line drawn or scratched on the side of the

rafter along the outside edge of the blade will be the mark for the seat cut. Fig. 14 is similar to Fig. 11, but shows a view of the end of the hip rafter looking at it from the other side and upside down so that the top edge or "back" of the rafter is towards the workman. Fig. 14 shows the two positions of the steel square as they would be when working with the back of the hip rafter towards you.

**Backing the Hip Rafter**

If there is any reason why the hip rafter should not be dropped down to a lower position in the roof frame as described above, then the seat cut must be marked off along the outside edge of the blade of the square when it is in the position shown by the dotted lines in Fig. 11, passing through the point P, and in this case the two outside top edges of the rafter must be cut off for the full length of the rafter or, as is said in the trade, the rafter must be "backed." It is very hard, without the aid of the steel square, to figure out just how much should be taken off from each edge of the rafter, but with the square there is a very easy way to find out how to do this. Assume that Fig. 17 shows a section cut right through the hip rafter at right angles to the hip line so that it shows the hip rafter in its true thickness and depth (to scale) and assume that the lines F-K and E-K represent the lines of the underside of the roof boarding which rests directly on the top of the common rafters. The point C will be a point in the middle of the "back" of the hip rafter and it will be seen that the two corners marked CLK will have to be cut away for the full length of the rafter unless the hip rafter is "dropped" as described above. Since the hip rafters are usually "dropped," it is not often necessary to cut off these corners (a process which is called "backing") but when it is necessary, the lines C-K can quite easily be marked off on the end of the hip rafter with the aid of the steel square. As the square is relatively large in comparison with the end of the hip rafter, it is best to make a pattern out of a piece of board of the same width as the thickness of the hip rafter—(about three or four inches wide). Fig. 18 shows such a pattern which should be about thirty inches long.

Make a mark straight down the middle of the pattern (line C-M in Fig. 18). Take the steel square and lay it down on a flat surface such as a large piece of brown paper on the floor or on a table top and mark off 17 inches along the outside edge of the blade and the rise-per-foot-run of the roof along the outside edge of the tongue as shown in Fig. 3. Lift the square and measure

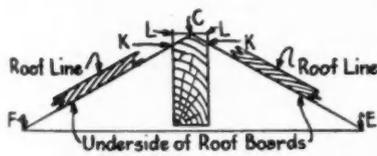


FIG. 17

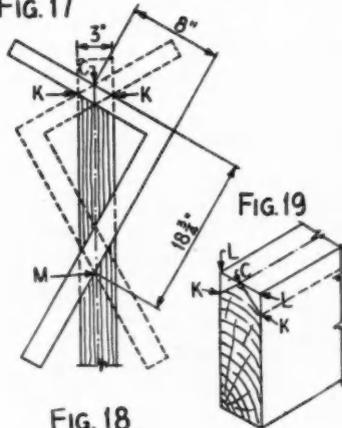


FIG. 18

off the diagonal distance between these two marks. For a rise-per-foot-run of 8 inches, this distance will be 18 3/4 inches and for a rise-per-foot-run of 9 inches, it will be 19 1/4 inches. This distance corresponds to the "Length of the Hip Rafter Per Foot Run" and can be read off directly from the rafter tables

(Continued to page 92)

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Over **50** wood-cutting cost cutting Operations with **ONE** machine!

bridging, fire stops, etc. . . . just another reason why . . . you can't afford to be without DEWALT.

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CLEVELAND, OHIO

## The STEEL SQUARE—

(Continued from page 91)

on the steel square as explained in a previous article of this series, See Fig. 7. Having found this distance—assume it to be  $18\frac{3}{4}$  inches—take the square and lay it on the pattern as shown in Fig. 18, with the “rise-per-foot-run” of the roof (8 inches in this case) on the outside edge of the tongue held at the point C and the distance referred to above ( $18\frac{3}{4}$  inches in this case) on the outside edge of the blade held on the center line of the pattern (the line C-M). Then a line drawn on the pattern along the outside edge of the tongue of the square such as line C-K in Fig. 18 will be one of the marks for cutting the top of the pattern. Now reverse the square as shown by the dotted lines in Fig. 18 and the other mark for cutting the top of the pattern will be given by a line drawn along the outside edge of the tongue of the square in its new position (line C-K'). After the pattern has been cut along the lines C-K and C-K', it can be applied to the end of the hip rafter with the point C held at the middle of the “back” of the rafter and the lines C-K can be marked off on the end of the rafter as shown in Fig. 19. Then lines can be drawn on the two sides of the rafter through the points K and parallel to the top edges of the rafter as shown in Fig. 19, and the corners C-L-K can be cut away for the full length of the rafter thus “backing” the hip rafter.

The next article of this series will explain the usefulness of the steel square in laying out valley rafters and jack rafters.

\* \* \*

## Better Homes for Industrial Workers

(Continued from page 52)

In contrast to this low monthly cost, the average purchaser had previously been paying \$47.50 per month rental. Thus he could buy one of the attractive Edge Moor houses at less cost than the rent he had been paying, and at the same time acquire an equity in a home of his own.

With an almost unlimited number of buyers to choose from, the production of the Edge Moor Terrace homes became largely a matter of skillful planning, buying and construction methods. The man in charge of this work is Ernest H. T. Schechinger, superintendent. Power equipment played an important part in achieving lower construction costs.

The typical Edge Moor Terrace house, as fully detailed with this article, is a 6-room and bath masonry house with attached garage, automatic oil-fired air conditioning unit, located on a 50 x 120 foot lot, is fully graded, sodded, seeded and shrubbed. The wall construction consisted of red brick exteriors backed up with 16 x 8 x 4 inch lightweight concrete blocks with hollow centers. The concrete units were tied in to the brick every third course. The masonry wall so built was warm and dry. One by two inch furring strips were nailed to the concrete blocks and a 3-coat lath and plaster finish applied.

Other outstanding construction equipment and features included Anaconda copper water tubing, Morgan wood-work and trim, Unique sash balances, U. S. Gypsum plaster base with insulating foil backing, 24-inch red cedar shingle roofs, Square D Multi-breakers, Elgin sinks, Lockwood hardware. Gables and second-story areas above masonry were sheathed with Insulite Bildrite insulating sheathing.

While the basic price did not include attic insulation, it could be added (4 inches of mineral wool) for \$75. A full bay window was offered at \$85 extra, and a porch addition for \$125.

The foundations are of 18 inch stone, well water-proofed, with basements entirely unobstructed so that they may be used for game rooms.

The finish floors consist of 5/16-inch top-nailed hardwood flooring, well filled, sanded and given 2 coats shellac. Inlaid linoleum was used in the kitchen laid over 1/4-inch plywood. Bathrooms are attractively fitted with latest modern fixtures and have tile floors and walls.

The builder's standard specifications as used on these houses, a copy of which is supplied to each owner, are:

**GENERAL CLAUSES**

All contractors and sub-contractors shall carefully examine the plans and specifications and visit the site of the proposed building to fully inform themselves of the conditions under which the work must be executed.

These specifications and the accompanying plans are intended to be co-operative and anything mentioned or shown in one or either shall be included in the contract as if specifically called for in both.

Each contractor and sub-contractor shall secure and pay for all permits and inspections, and carefully observe all ordinances and laws of any bureaus having jurisdiction, as if mentioned in detail in this specification.

The sub-contractor is to provide the necessary labor and materials to complete the building as indicated, whether definitely indicated on the plans or referred to in the specifications or not, in accordance with workmanship of good quality and the minimum requirements of Construction for New Dwellings located in the Eastern Pennsylvania District, Federal Housing Administration.

He will be responsible for the storage of materials. He will provide a competent foreman as his representative with the builder.

All drawings and specifications, being instruments of service, are the property of the builder, and must be returned to him when the work is completed.

It is mutually agreed between all interested parties that neither the plans or the specifications shall be used for any buildings other than herein specified, on location herein noted, without the consent in writing of the builder.

**EXCAVATION**

This contractor shall excavate for cellar and footings to the level shown on plans. The bottom of all footings shall be no less than 3'-0" below the finished grade, on solid ground.

Top soil is to be scraped and piled separately. Sub-soil to be piled as located by the builder, convenient for future grading. All excess earth to be removed.

**STONEMWORK**

All foundation walls shall be hard local stone, or approved block, to be laid in natural bed, in cement mortar. In general the top of stone construction is the top of the first floor joists.

The inside surface of stone walls in basement shall be dashed with cement plaster.

Exterior walls, exposed, shall be pointed 6" below finished grade. Mortar shall be one part cement, and three parts sharp sand. Where Block is used in cellar foundation walls, the outside surface will be water-proofed.

**CEMENTWORK**

Cellar floor shall be of 3" cinder-concrete mix, 1 part cement, 3 parts sand, and 5 parts clean cinders. 1" top coat of 1 part cement, 3 parts sand mix.

Garage and walks, 4" thickness-concrete slab. 4" CINDER base on all outside work.

Mixture for concrete steps to be composed of 1 part cement, 2 parts sand, and 4 parts stone.

Garage drive-way to be Penna. Highway Specification H. E. 1 or equal, 7'-0" wide, from garage to street.

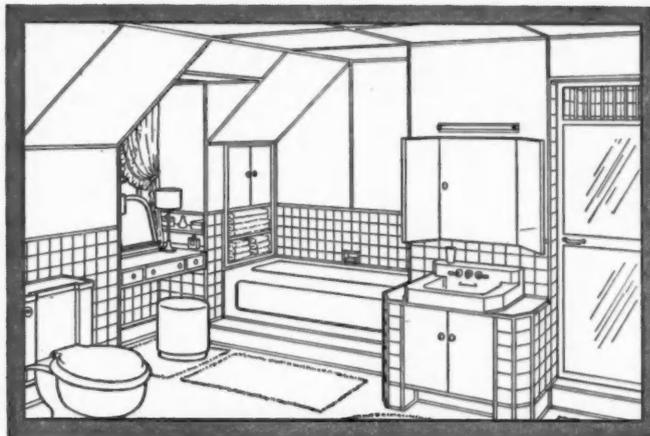
**BRICK MASONRY**

Walls to be Conway or equal common hard brick, laid 2 3/4" top to top, in lime and cement mortar mix, 1 part cement, 1 part lime, and 6 parts sand.

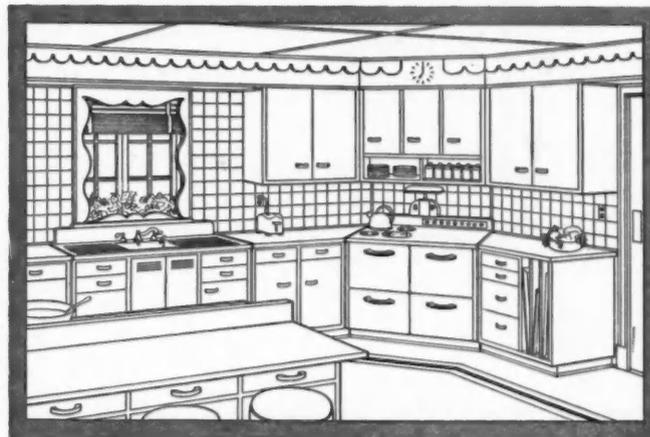
Living-room fireplace where shown to be common brick. Jamb and facing floor and walls to be lined with firebrick. Flue lining for fireplace to be 9"x13", for heating boiler 8"x8".

All exterior brick walls to be backed up with Salmon Hollow  
(Continued to page 94)

**Tile-like walls add cheery smartness to the home**



Tile effects by Masonite Presdwood Temprtle make a big difference in the finished appearance of certain rooms . . . and they're surprisingly inexpensive. This bathroom, for example. Wainscot of Presdwood Temprtle and upper walls of Tempered Presdwood, enameled white. The handy cabinet under the lavatory shows an interesting result achieved by using all-wood, grainless Masonite Presdwood Temprtle with metal molding.



Cut it to fit! That's a big advantage of Presdwood Temprtle, particularly in a kitchen like this. And when it's properly fitted and applied, it will not warp, chip, split or crack. Here, white enamel with red striping makes an attractive color scheme. Masonite Tempered Presdwood is ideal for kitchen cabinetwork because it can stand hard usage without scuffing. Note the "Dutch Kitchen" effect produced with scalloped trim.

If you would care to examine a free sample of Masonite Presdwood Temprtle, below is a coupon for your convenience.



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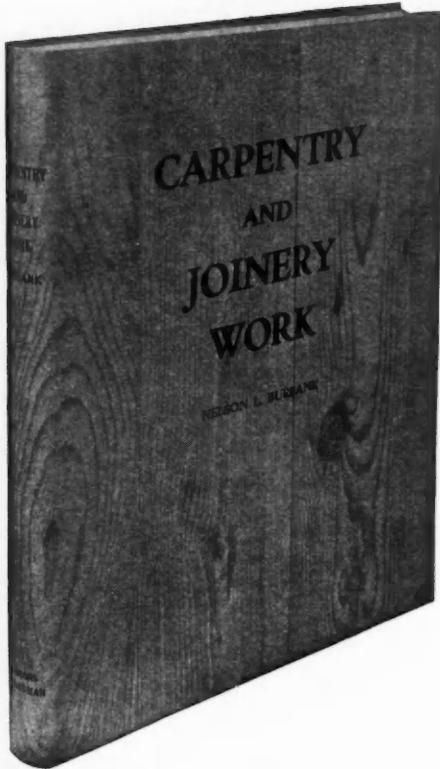
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# New Third Edition CARPENTRY and JOINERY WORK

By Nelson L. Burbank

Formerly Instructor, Building Vocational High School,  
Cincinnati, Ohio



The cardinal principles of present day residential construction are set forth logically in simple language, with the aid of many line drawings and photographs. The new Third Edition contains 80 revised pages, 6 additional index pages, and three full-sized blueprints of a Colonial house. A complete Bill of Material for this house is given in Chapter III.

Designed primarily as a textbook, the program of study presented involves class discussion, practical job work and related studies. These include Architectural Drawing, Plan Reading, Carpentry Mathematics, Business English, Civics and First Aid. Because of its detailed completeness it is an excellent book for home study. The greatly expanded index also makes it useful as an up-to-date reference book for those whose student days are over.

1940. 280 pages, illustrated, 8½x11 inches, Cloth, \$3.00

BOOK DEPARTMENT

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

## Better Homes for Industrial Workers

(Continued from page 93)

Block. All exterior walls to be washed down.

### STRUCTURAL IRON

For fireplace where shown furnish Covert Damper. All exterior openings in brickwork up to 5'-0" wide, to have 4"x3" angles.

One 4" lally column 7' long, for wood beam, 20' long. Furnish wall-plates for beam.

### CARPENTRY & MILLWORK

This contractor shall supply and erect all labor and material indicated or necessary, all rough lumber and scaffolds, rough hardware, erect workman's shack, store materials, etc. He shall provide a competent foreman, who will be responsible for all lines and levels, and who must not be removed from the operation without specific permission from the Builder. This Foreman will act as local superintendent and control the local operation of other trades, particularly in cutting of joists and wall chases for the mechanical trades.

All joists shall be 2"x8"—16" on centers, single bridged, doubled at wells and under parallel partitions, with at least 4" bearing on masonry walls, and 3" firecuts.

Rafters over 15' in length shall be 2"x8", and below that 2"x6". All 24" on centers, securely spiked to wall plate. Dormer framings may be 2"x4". Double rafters at dormers. 2" deeper at ridges and valleys.

All exterior frame walls, shall be beaded clap boards, of white pine, cedar, or cypress, exposed about 8" to weather, upon Bild-Rite Sheathing. The verticals shall be 2"x4" hemlock studs, doubled at corners and around openings.

Sides of Dormer windows shall be 6" beaded Boards. T.G. paper. Where a linoleum finish is specified the floor is to be double nailed.

All studs are 2"x4" in bearing partitions or those containing soil stacks. Non-bearing partitions, and closets may be less.

Plates shall be securely bolted to masonry walls. Bolts 18" long, 3'-0" on centers. All exterior brick walls to be furred with 1x2 or 1x3" lath.

Exterior windows in brick walls shall be reveal type. 1⅜" sash, with Uniq. Balance and Weather-stripping.

Interior doors, 1⅜" two panel type. Fir.

Interior trim, 3"x⅞" stock design. Bases, 4"x⅞" with ¼ round and stock 1¼" top moulding.

### STAIR WORK

Main stair to have 1⅜" oak treads, ⅞" risers. Open string for the first six treads, baluster and rail, 4"x4" starting post. Rest of stair to be boxed-in type, with hand rail running to ceiling. (3-2"x10" horses.)

Cellar stairs to be built on two 2"x10" Yellow Pine horses, Y.P. treads and risers; 2"x3" rail; 3"x4" Post.

### ROOFING

All built-in flashings and counter flashings over heads of openings, around chimneys, at intersections of walls and roofs, valleys, hips, and ridges shall be of corrosion-resisting metal (with block tin coating).

Gutters and downspouts 26 gauge galvanized iron.

Roof to be covered with 24" red cedar shingles (Royals), securely nailed on 1"x2" shingle lath, with galvanized nails.

### PLASTERING

All plaster to be 3 coat work. U.S.G. Foil insulated rock lath to be used where ceilings are under any part of the roof, or slopes of any part of the roof, or dormer windows and garage ceilings.

All internal angles to receive corner rite, and all corners to have Metal corner beads.

Provide Metal lath for tile work in bathroom.

Do all necessary plastering for completion of work.

### TILE WORK

Bathroom shall have 4'0" tile wainscoat of clay tile, color selected by Builder with base and cap mouldings, set in cement on metal lath, supplied and erected by plaster contractor. Tile over tub shall be 5'6" high, off tile floor, marble sill at bath door; provide paper holder, 2 soap cups, 1 tooth brush and tumbler holder; and one towel rack. All work to be level and plumb.

**HARDWOOD FLOORING**

All hardwood floors to be select second Grade red or white Oak. One coat oak paste filler; 2 coats pure white shellac (5 lb. cut). Stairs to be scraped and finished.

**PAINTING, GLAZING & CAULKING**

Exterior woodwork and metal to have 3 coats lead and oil paint. All interior woodwork 3 coats (2 flat and 1 enamel). All glass to be single thickness. Sash to receive prime coat before puttying. All masonry openings to be caulked.

**FINISH HARDWARE**

Front door to have Colonial Type knocker with Corbin front doorlock. Rear door to have galvanized finish on outside, chrome inside with nightlatch. All interior passage doors to have Colonial type interior locks with solid brass knobs. Closets with closet latches, brass clothesrods. Supply 1 set Garage Door hardware. Furnish all necessary finishing nails.

**ELECTRIC WORK**

All work shall be in accordance with local codes, the National Electric code, and the requirements of the local utility. All materials to conform to the requirements of the Underwriters Laboratories.

Outlets will be indicated on finished plans. Radio wiring with plugs in Living Room.

Electric Fixtures to be purchased by the Builder and erected by the electric contractor.

**PLUMBING**

Install complete system of water supply from water mains in street, and drainage to cesspool, and for the following fixtures:

1—18x24 Flat rim enameled sink complete with swinging nozzle faucet, chrome crumb cup and strainer.

1—2 part concrete laundry tray complete with metal stand and swinging nozzle faucet in basement.

Service line for heating and hot water system.

1—5'-0" bathtub, completely recessed; shower rod and curtains.

1—Toilet; complete with white seat and china tank.

1—17"x20" lavatory, with chrome legs to floor, vitreous china.

All water lines to be copper tubing throughout.

Provide one outside hose bib. This contractor shall provide temporary water connections to mason contractors.

Plumber to do all digging and back filling; all pipes located in exterior walls to be insulated against freezing.

1—30 gallon galvanized domestic hot water storage tank complete with side arm gas water heater will be installed in the basement.

**CESSPOOL**

Provide one Dry-well, 8' clear in Diameter, or one septic tank. Depth of well to be 7'6" below inlet.

Well if used to be 25' away from buildings; covered with concrete slab; 1:2:4 mix.

**HEATING SYSTEM**

A winter Air-Conditioning heating system will be installed in such a manner that Air-Circulation will be provided in the summer months.

The heating system will include the following equipment:

One complete "Penn" Air-Conditioning Furnace-Burner Unit.

All necessary galvanized duct work.

275 gallon oil storage tank.

Fill and vent lines for oil tank.

All necessary electric controls.

Flow registers in all rooms.

Return grilles in living room, dining room, and all bed rooms.

Flow ducts will be metal all the way to the register.

Space between studs and floor joist will be made tight and used for cold air returns, metal stack heads to be placed in partitions to receive return grilles.

All equipment to be installed in accordance with the laws and rules of The National Board of Underwriters and local authorities.

This system is guaranteed to heat all rooms to a temperature of 70 degrees Fahrenheit, when the outside temperature is zero.

All workmanship and equipment is guaranteed against defects for a period of one year from date of completion.



- HERE IS WHAT YOU GET:**
- 1 Two roller bearings in each saw guide produce smooth saw action.
  - 2 First quality back saw.
  - 3 Positive saw guide stops and depth stop plates control depth of saw cut.
  - 4 Adjustable spurs in back keep work from slipping.
  - 5 Detachable legs of malleable iron are practically unbreakable.
  - 6 Swivel lever and lift screw automatically raise front saw guide and saw out of kerf cuts when changing swivel position.
  - 7 Swivel and uprights cast in one piece of malleable iron. Practically unbreakable.
  - 8 Quadrant is graduated in degrees and is also numbered for sawing 3, 4, 5, 6, 8, 12, 24 sided figures. Double-locking, self-clamping swivel locks at any point of the quadrant.
  - 9 Stock guides hold work tightly against the back.
  - 10 Length stop for duplicate work.
  - 11 Automatic saw guide catches hold saw above work while putting work in position.
  - 12 Saw guides of malleable iron are practically unbreakable.

**MADE IN 3 SIZES:**

No.	Capacity 90°	Back Saw
2244	8 1/4 in.	24 x 4 in.
2246	8 1/4 in.	26 x 4 in.
2358	9 1/2 in.	28 x 5 in.

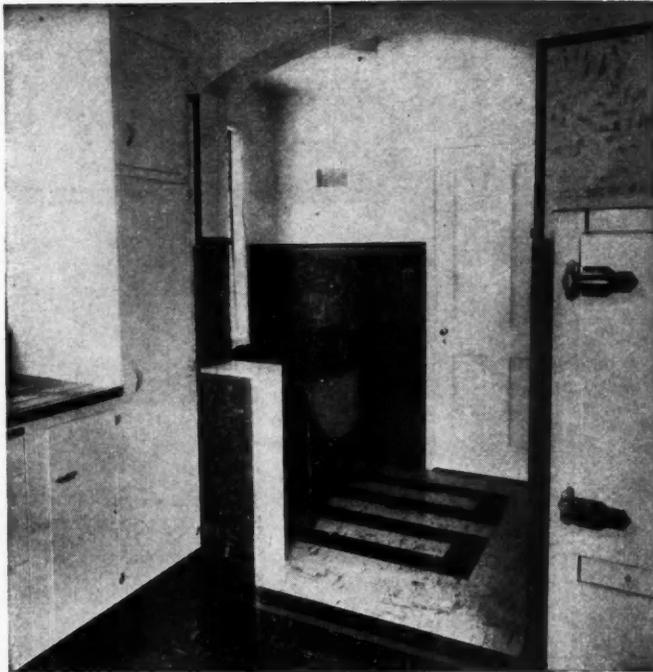
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The prospect for your "low cost" home compares your walls with others by the extras you can offer. Inexpensive Tile-Tex walls and floors in the bath and kitchen give that plus value that clinches the sale.

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There is a Tile-Tex Approved Contractor near you who can give you a fact-filled story on Tile-Tex . . . backed with his own installations. Write for his name and ask for copies of the new Tile-Tex folders on floors and walls.



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The Tile-Tex Company,  
 Chicago Heights, Illinois

If my territory is open, I would like to have complete information on the Tile-Tex Dealer's proposition.

Name .....

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A-7

## Building Craftsmen of Tomorrow

*(Continued from page 47)*

up a Federal Committee on Apprenticeship.

The committee, under the direction of Secretary William F. Patterson, immediately went to work. Now many states in our Union have definite apprenticeship laws on their statute books. These laws differ somewhat in detail, but basically agree on certain fundamentals, as follows:

Apprenticeship is possible in any industry for which workers are required whose learning period is 2000 hours or more.

Apprenticeship can be set up when local committees are formed to draw up labor standards, which includes such items as the definition of an apprentice, his age, his wage schedule (a graduated percentage of the journeyman's scale), a work process schedule, a definite period or time for school training (usually 144 hours per year minimum), the ratio of apprentices to journeymen and similar information.

### Committees Represent Both Sides

Local committees must be representative of both the employer and employee group, the committee being made up of an equal number of each.

An educational representative sits on the committee in a non-voting capacity, often acting as secretary, and in many cases becoming trade co-ordinator. This co-ordinator is the actual "key" to the situation as committee policies and suggestions are carried out with the aid of the co-ordinator who actually goes out on the job, checks with foremen and employers regarding the progress and abilities of apprentices; keeping the committee informed, too, as to the progress of the apprentices in their school training period.

School training must tie definitely into job training; in fact, the only real reason for the school training is to provide an apprentice with the opportunity to learn these things about his trade which cannot be learned on the job. He therefore learns such things as blueprint reading, taking off bills of material, information about the materials he uses, layout work, and in many cases has an opportunity to do some actual advanced tool jobs.

### Results of Apprentice Training to the Apprentice

There are at least four definite results which will follow a well planned program of apprenticeship:

1. The apprentice knows he will graduate at the end of a four-year period (a few trades require five) into a skilled craftsman. This in itself will immediately attract young men into a building occupation. Care is needed to be sure the selection is well done and the unfit, physically, educationally, and socially are rejected. Certainly, one must admit an occupation is no better than its personnel and a wise and intelligent choice of an apprentice, before he has spent much time at the trade, will give good economic returns to all parties concerned—the apprentice, his employer and the customer of the employer—as quality work can be delivered at minimum costs.

2. The apprentice will get a variety of trade experience and hence be competent in the major branches of the trade.

3. The apprentice gets a chance to earn while he learns. His earning is in keeping with his ability. The plan provides for periodic advancement in keeping with ability; however, if he does not attend school, if he does not apply himself, then there is no periodic raise.

4. His opportunity for employment will be increased because of increased ability; he now has something to "sell the employer."

**Results to the Employer**

The economic result to an employer is a most important phase of the plan. Inefficiency on the part of a worker means less profit for the employer and dissatisfaction on the part of the customer—the home owner. Too much cannot be said on the point regarding how much the plan means. The employer need not ask the question "Craftsmen of tomorrow, Who?" if he helps train the oncoming generation; and don't forget the training, when done "on the job," under the direction of a sympathetic and competent foreman, will be the kind the employer wants for his own work—tailor made, if you please!

Labor turnover will be materially reduced; a contractor will no longer have to continually hire and fire. Quality work can only be produced by quality producing craftsmen; quality producing craftsmen can only be secured by providing an intelligent and all around training program for well-selected apprentices. Apprenticeship, however looked at, is gain for everybody—profitable alike to all concerned. It is not a debatable subject; not a problem of domination by labor; nor a problem of domination by the employer group. Apprenticeship as set up by the government requires the co-operative effort of both employer and employee group.

**How to Get the Plan Started in Your Community**

*Five definite steps will put the apprenticeship plan into effective operation:*

1. A group or organization of contractors in any community appoints a small committee. The local employee organization does likewise. These two committees then get together, organize themselves into an apprenticeship committee and develop the labor standards for their trade. A public school instructor or trade supervisor is selected to work with the committee and usually becomes the co-ordinator. By contacting the school superintendent a trained instructor can often be appointed.

This procedure is followed for each trade involved; that is, plumbing is handled by a plumbing committee, painting and decorating committees are made up of painters and decorators, etc.

2. If additional help is needed or the local school set-up is such that no trained instructors are available, then write to Mr. William Patterson, executive secretary of the Federal Committee on Apprenticeship at Washington, D.C. He will be able to send literature and sometimes a field co-ordinator to assist in organization plans.

3. The next step after labor standards are set up and agreed to is to determine the content of the training program to be taught in school. The school official takes the lead here, the apprenticeship committee advising him at all points so as to be sure the school work required of the apprentices will be practical.

4. With the training program set up, next enlist the support of the persons for whom the plan has been set up, namely, the apprentices (usually called by this name but actually not apprentices until they come under the direction and supervision of the apprentice committee). This really means checking on all young men of apprenticeship age (18 to 24 is standard); require them to attend a training class and assist them "on the job" to get the all around training necessary for their complete trade education.

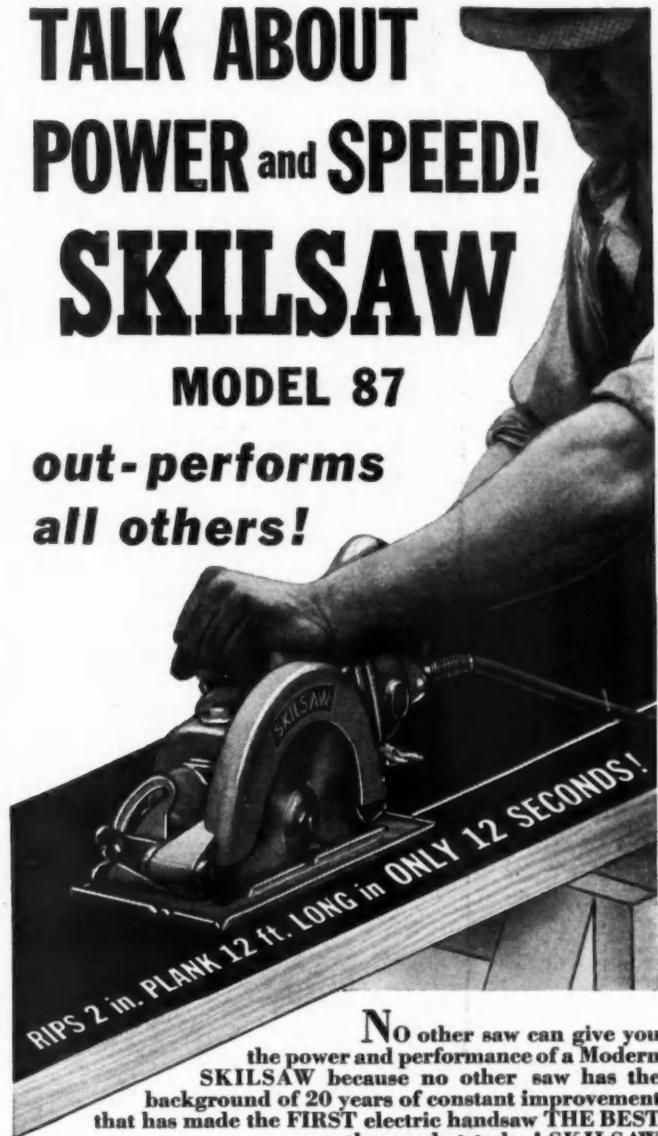
5. The apprenticeship committee now meets regularly and periodically, tests apprentices as to their increased

*(Continued to page 100)*

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SKILSAW**

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No other saw can give you the power and performance of a Modern SKILSAW because no other saw has the background of 20 years of constant improvement that has made the FIRST electric handsaw THE BEST on the market today! SKILSAW out-performs all others on any kind of sawing job—it saws faster and deeper . . . it saves time and labor costs on every cut you make! Modern SKILSAW is more for your money and it will make more money for you—on all your jobs for years to come! 9 powerful models for wood, metal, stone and compositions.

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*American Builder* brings you, during the course of a year, more than 100 of the fastest selling home designs in America, complete with floor plans. In addition you receive all the latest news of the entire building industry—sales and advertising aids—job pointers—elevations and construction details—legal and financial information direct from Washington.

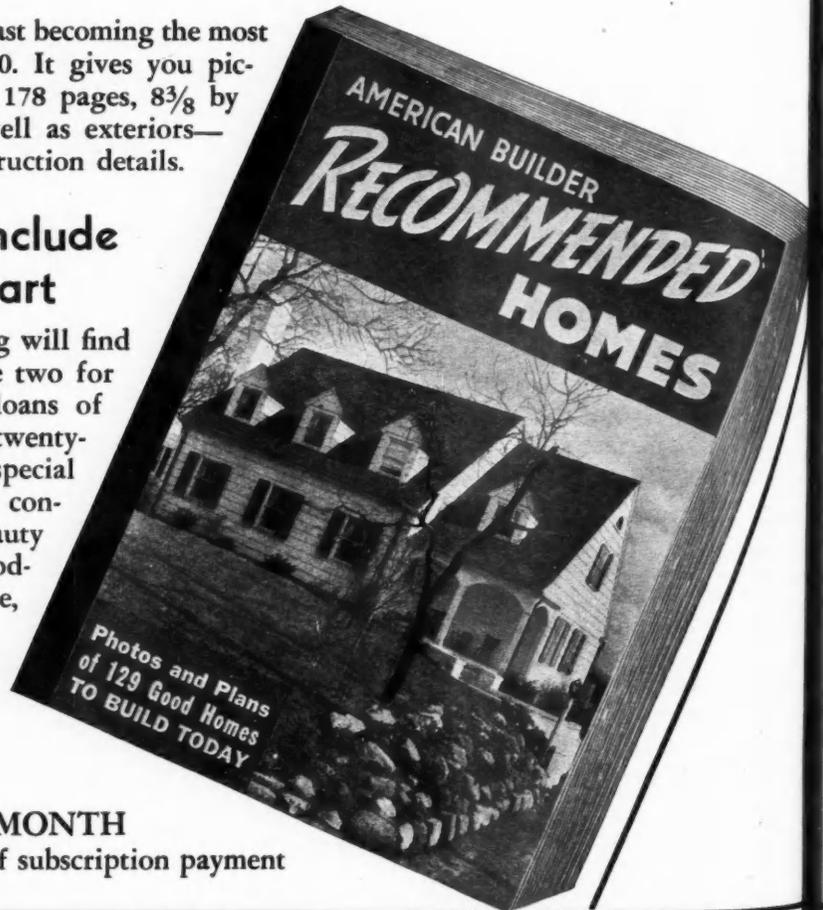
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## Special Features Include FHA Financing Chart

Everyone interested in home building will find continually helpful the chart on page two for quickly figuring FHA payments on loans of varying values and for terms of five to twenty-five years. This is just one of several special features which include an article on wall construction, suggestions for enhancing the beauty of interiors, examples of home and store modernizing, and the special article on page five, "Today All Can Be Home Owners."

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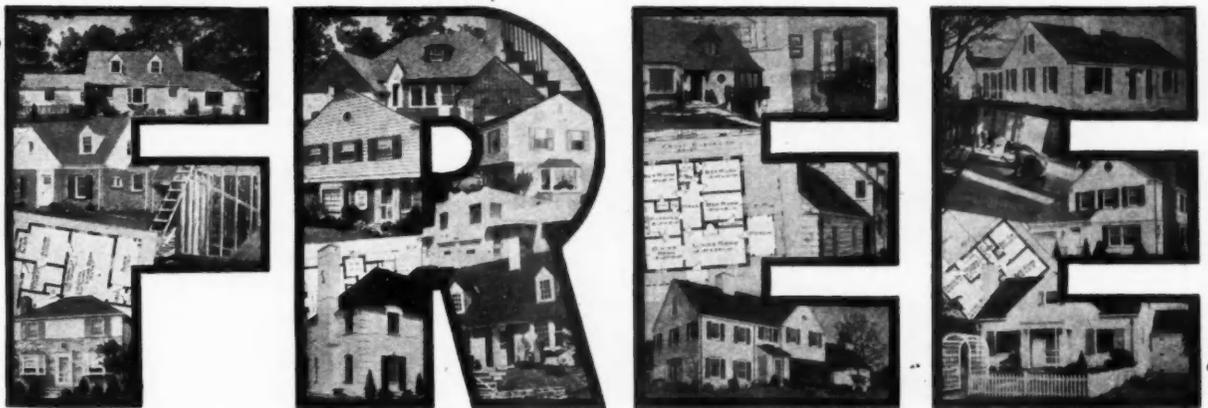
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### The Fire Safe House

This distinctive home is constructed of face brick with terra cotta backing, has asbestos-cement roof, steel and concrete floors . . . two interior views shown in addition to floor plans.

### Authentic Colonial Design

PLUS modern air conditioning for white clapboard house with two side porches, fashioned after New England farm house . . . front and rear elevations included with floor plans.

### Tomorrow's Garden Home

For small family, with glass enclosed conservatory and huge aluminum casement window looking out on garden from dining room, model streamline kitchen, nicely detailed fireplace and corner bookshelves.

### Built on Speculation, Quickly Sold for Cash

House with compact and livable floor plan, completely electric kitchen, sold for cash almost immediately by Montclair Builders.

### The Air Tight Home

Ventilating louvres under windows perfected for Portland, Ore. home . . . construction details for advanced ventilation method in \$3500 5-room home, windows shut at all times and air circulated through special louvres.

### Typical Prize Winners

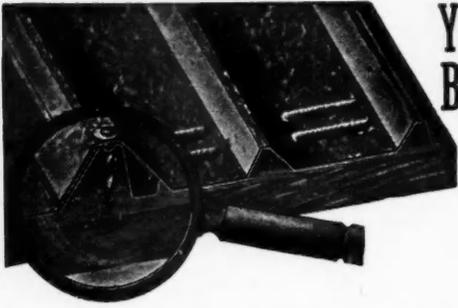
All-Gas Prize Winning Home at Altadena, Calif. . . . 7-Room French Provincial in Stone from Oak Park, Ill. . . . Charming New England Colonial at White Plains . . . Distinctive Dutch Colonial from Columbus, Ohio . . . Unusually Attractive Prize Winner from Tulsa, Okla. . . . Brookline, Mass. Air-Conditioned Colonial . . . Compact 6 room Rochester Home . . . Selected Homes winning prizes in G. E. Home Competition.

### Random Selections

Double Lifetime Home Built in Stamford, Conn., explaining construction details for long life . . . Hollis, Long Island Colonial with unusual Dropped Floor Living Room . . . Distinctive Los Angeles Garden Home . . . Four Practical Home Designs in \$4000 and \$5000 class from Charlotte, N. C. . . . Cape Cod Cottage transplanted to Cedar Rapids, Ia. . . . Modern Functional Layout with Increased Livability for St. Paul home . . . Dallas Bungalow of 4 rooms with Economy Plan and Individual Heaters . . . Basementless Chicago Home of English Design . . . two beautiful Seattle, Wash. Homes, designed by Hugh Russell . . . 6-Room Basementless Bungalow from popular Long Island Development . . . Cement Shingle Cottage of 5 rooms built in Muskegon, Mich. . . . Bride's Home of 5 rooms and bath from Northwood Park, Md.

Also a number of compact low cost homes in the "dollar a day" class such as—Three Cottages for Same Plan built on Long Island . . . San Gabriel All-Gas Cottage . . . Duchess Project Model 5 Room Home . . . Cape Cod Home for 2 or 4 bedrooms . . . and many others.

*These are just a few of the 129 homes and floor plans you'll find in Recommended Homes. Send for them all by returning the coupon with your subscription remittance at the rates shown above.*



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Both Ways**

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**Building Craftsmen of Tomorrow**

*(Continued from page 97)*

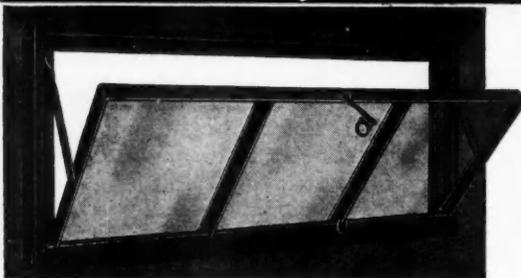
knowledge and trade skills, helps to provide them with varied trade experiences by shifting them from one contractor to another, advises them on their training program, and assists in every way possible to keep the program progressing and upgraded.

**Summary of the Situation**

Certainly a new day will have dawned for many young men if they know training plans have been developed which are recognized by journeyman, foreman and employer alike as necessary and a regular part of the employment setup. If industry does not take the lead on this all important question of trained craftsmen, then many kinds of work which require skilled craftsmen, will not be designed; other types of materials will be substituted. Gradually the beautiful work of the skilled building trades artisans will become a thing of the past, something to be looked at as evidence of the skills of former days, and an acknowledgement this day and age, with all of its improvements and advancements, has failed because it did not recognize the importance and place of the skilled worker.

The plan will rise or fall according to the interest and acceptance of responsibility by industry to foster apprentice plans, promote the organization of committees, work with educational authorities who are ready now to carry the work of organization and co-ordination, securing the co-operation of all persons affected by the plan, thus making apprenticeship training a reality and not just another statute on our law books.

**A POWERFUL SELLING HELP!** — *That's what many builders say about the New Vento-Champion Basement Window*



**The NEW VENTO CHAMPION**  
*Virtually Two Windows in One—*

A generous amount of indirect ventilation is provided by simply opening the window from the top. In this position ventilator deflects drafts upward and retards entrance of rain, snow and dirt. By simply a slight pull at the top of the ventilator any degree of opening up to 100% may be obtained. (See right.)

If owner desires action of top-hinged window, the ventilator may be swung up from the bottom as illustrated.

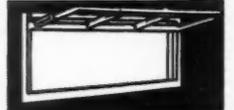
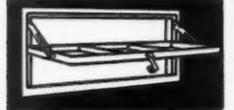
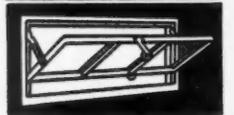
Ventilator is also quickly and entirely removable from frame for ease in glazing either before or after installation, or for full opening to facilitate the passing through of large objects.

It's the easy dual operation, that gives the utmost in ventilation, the greater degree of weather tightness, better construction and many other desirable features that immediately capture the interest of every prospect and permanently please every owner.

In the final analysis, it costs no more to use this exceptionally fine new steel basement window. **TRY IT** and you will be convinced.

With the present keen desire for more livable basements, you're bound to find the new VENTO CHAMPION Basement Window a real selling help and good will builder worth several times the dubious saving that might be made by using the very cheapest product on the market. Ask your dealer to show them to you, or write for complete details.

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**VENTO STEEL PRODUCTS COMPANY, MUSKEGON, MICHIGAN**

## LETTERS from Readers on All Subjects

Facts, opinions and advice  
welcomed here

### FHA Says "No" on "Economical Bracing"

Washington, D. C.

To the Editor:

On page 114 in the May, 1940, issue of the *American Builder* magazine is published a letter from Mr. Ivan C. Wertz of Portsmouth, Ohio, suggesting an "economical bracing" with the use of 1" or 1 1/4" pipe straps.

This is to advise you that the Technical Division of this Administration has analyzed this method of bracing and has advised our local insuring offices that it is not to be considered acceptable on properties the mortgages of which are insured by this Administration.

Our requirements for corner bracing, which have been established for a considerable length of time, are as follows:

"All external corners, except where diagonal sheathing is used, shall have 1 x 4-inch braces let into outside face of studs, set approximately at 45 degrees and extending from plate to sill wherever possible. When openings occur near the corner, knee braces shall be installed from the corner post to the sill and to the top plate, extending over at least three stud spaces."

In order to correct the natural impression obtained from Mr. Wertz's letter that metal strap corner bracing is acceptable to the Federal Housing Administration, we will appreciate it very much if, in your next issue of the *American Builder* magazine, a statement is printed to counteract such an impression. Thank you.

FEDERAL HOUSING ADMINISTRATION,

By Howard P. Vermilya, Director, Technical Division.

## HOW TO END DOOR HEADACHES AND KICK-BACKS --- FOR GOOD!



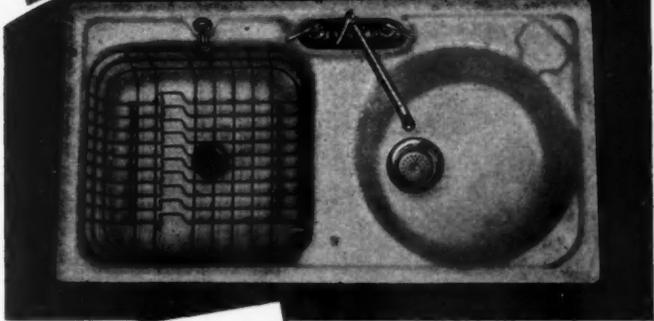
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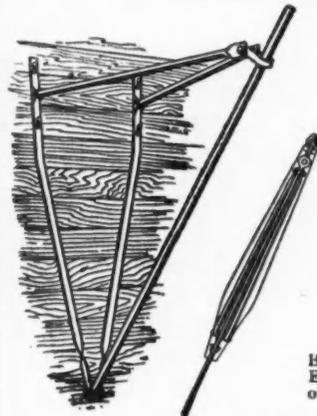
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There's no substitute! The EBCO DISHWASHING SINK is the only sink of its kind—and "The Sink America Is Buying." So you'll want the full details today. It has set a new standard in sinks. Because of its high quality, attractive design, and patented convenience features the EbcO Sink has sold itself to housewives everywhere. It reduces dishwashing to three simple steps. The easily cleaned drain, handy spray fixture, swinging-spout faucet and patented round compartment further add to its convenience and utility. And installation in any cabinet top is easy and economical. Back of wall piping is eliminated. Level rim insures watertight mounting. Also offered in a choice of sizes and colors. And it's a sink that will last! The porcelain enamel over genuine cast iron will last indefinitely. From every angle the EBCO SINK is your best buy.

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RELIABLE Steel Scaffold Brackets can be used on wood or stucco with perfect safety. Remember: A safe workman is a good workman.

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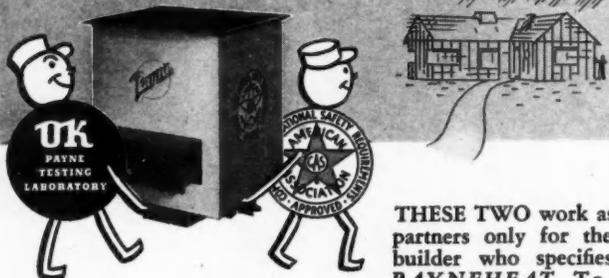
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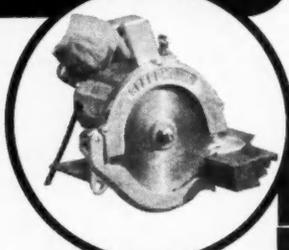
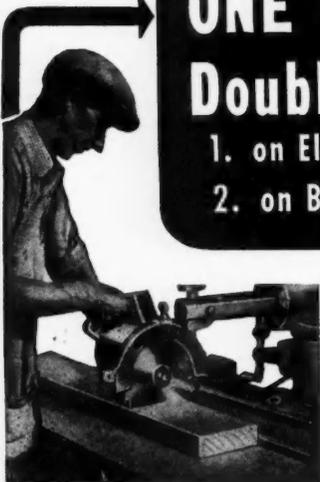
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Trims off roofs



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Use Speedmatic Electric Handsaw alongside any other Saw on the market—compare it, cut for cut, feature for feature. Also consider the convenience and savings of the Porter-Cable Speedmatic Slide Arm! Then you will understand Speedmatic's nationwide popularity. For it does two jobs with equal efficiency—(1) as an electric handsaw and (2) as a powerful bench saw—either "on the job" or in the shop. Get more information on the BIG DOUBLE SAVINGS this builder's helper brings you. Write TODAY!

PORTER-CABLE Machine Co.

1721-G N. Salina St. Syracuse, N. Y.

**LETTERS—**

(Continued from page 101)

**A "Three-Gun" Building Industry Man**

Seattle, Wash.

To the Editor:

Chuck Devlin forwarded to you recently a photograph of "Diff" (W. E. Difford, secretary, Douglas Fir Plywood Assn.) made at the Seattle Gun Club.

You have undoubtedly read of the two-gun men in the early days of the Southwest but these fellows evidently were pikers compared to "Diff"—the three-gun man.

From the sixteen yard line at the traps and shooting my 28 gauge 32" barrel full choke Parker shotgun he smashed 24 out of 25 clay targets; he claims that he had never fired a shotgun before in his life. The man is ambidextrous, or versatile or something, wouldn't you say?

W. F. COLEMAN.



**Suggestions to Keep Building Private**

New York, N.Y.

To the Editor:

I would appreciate 40 copies of your two very excellent editorials.

In future observations you may care to advance the idea that FHA should in advance analyze points of future productive expansion and stimulate private building in such points. One very effective method would be to defer the first monthly payment until the house is occupied. Proper restrictions should be required

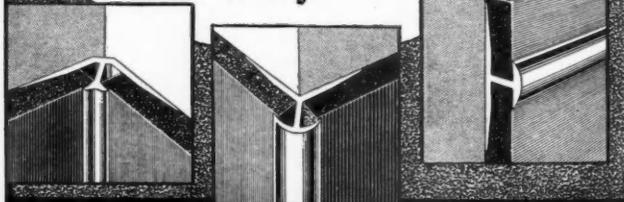
- (1) Applying only to houses in specific locations
- (2) Specific relation to war, expansion areas

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**FOR PLYWOOD, HARDBOARD MASONITE, FORMICA, WALL TILE AND ALL SIMILAR WALL MATERIALS**

Neat decorative trims for every interior wallboard application . . . and for all linoleum, rubber and other composition coverings used on floors, walls, tables, counters, bars, sink-tops, etc. More than 400 types, designs and sizes! A variety of metals and finishes! See this complete line of easy-to-install metal trims bearing the famous B & T trademark CHROMEDGE. Send for your B & T catalog—you'll want its helpful, time-saving installation suggestions and detailed drawings!

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

(3) Specific limit, say, 8 months.

In other words, the government would take a small, but willing risk—but no more than in financing industrial expansion, "education orders," experimental models, etc.

It would have an automatic check upon unnecessary local rent raises. It would check dissatisfaction (real or fancied) that leads to or creates arguments for labor unrest, wage raises and grand capital for strikes.

This may keep house building in private hands, as you desire and advocate.

NATIONAL MINERAL WOOL ASSN.,  
By Wharton Clay, Secretary.

**Good Town Needs Apartments**

Pekin, Ill.

To the Editor:

Will you be so kind as to advise me if you know of anybody who might be interested in building an apartment building in Pekin? Reasons are:

Pekin has only one 9-family apartment building, and people are almost in tears in search of places to live. I, myself, am one. My ad manager, about to wed, is another. Three stood at our counter at one time asking: "Where can we find a place to live?"

Any test will prove Pekin a superior town. It grows steadily. We should have our 1940 census soon—probably over 20,000. County population will exceed 60,000.

F. F. McNAUGHTON, Publisher,  
The Pekin Daily Times.

**Home Duplicated in Indianapolis**

Indianapolis, Ind.

To the Editor:

Enclosed please find clipping of one of the houses featured in our weekly building page of The Indianapolis News. I am sending this to you with the thought it may be of some interest in that the house originally was featured in your magazine.

THE INDIANAPOLIS NEWS,  
By the Real Estate Editor.

**Now Ready  
Simplified Carpentry Estimating**

By **J. Douglas Wilson**

Head of the Building Trades Department, Frank Wiggins  
High School, Los Angeles, California

and **Clell M. Rogers**

Mathematics Instructor, Venice High School, Venice,  
California

Based on a series of articles by Mr. Wilson entitled *How to Estimate Accurately*, which appeared in *American Builder and Building Age* last year, the material has been revised and expanded into this book. Many of the original illustrations have been changed and the number of helpful tables and mathematical short cuts have been increased by Mr. Rogers.

This new book clearly explains the "taking-off" of a bill of materials required for the construction of a house and the rules and methods of making an accurate estimate of costs. The constructional order of quantity survey is used. Many skilled carpenters who have taken Mr. Wilson's evening school courses in estimating have helped in making the explanations given in this book clear and practical.

The seven chapters cover: Estimating Fundamentals, Foundation Material, Framing, Exterior Finish, Interior Finish, Hardware, Building Information and Tables. An index makes for easy reference.

210 pages, 71 illus., 36 tables, 5 x 7, cloth, \$2.50.

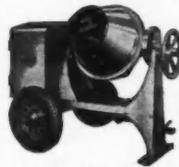
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**3 1/2 HIGH SPEED  
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## "TruCost" Estimating Figures for Home Designs in this Issue



The Editors have prepared a 28 PAGE EXPLANATION of American Builder's "TruCost" system of quick, accurate estimating and offer it to anyone interested at 25 cents per copy. Please enclose payment when ordering. Address American Builder, 30 Church St., New York City.

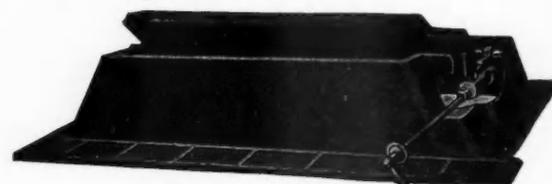
### Page 44, July: Miami Bldg. Corp., Bldr.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 190 lin. ft.; Excavation per ft. deep, 33 cu. yds.; Outside Walls, 14.00 sqs.; First Floor, 9.00 sqs.; Ceiling, 9.00 sqs.; Roof Pitch, 5" rise per ft. run; Roof, 12.50 sqs.; Hips and Valleys, 110 lin. ft.; Cornice, C & F, 120 lin. ft.; Cornice, 8", 120 lin. ft.; Partitions, 90 lin. ft.; Inside Finish OS Walls, 120 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Inside Doors and Cased Opps., 12 opgs.; Windows and Casements, 21 opgs.; Chimney, 15 lin. ft.; Porch and Garage Floor, 2.78 sqs.; Porch Ceilings, 2.78 sqs.; Porch Beam, 80 lin. ft.; Porch and Balcony Post and Newels, 7; Porch Roof, incl. in Main Roof Figures; Porch Cornice, 80 lin. ft.; Porch and Deck Rail, 28 lin. ft.

### Page 53, July: Wilmington Constr. Co., Bldr.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 95 lin. ft.; Trench Walls, 52 lin. ft.; Basement Floor, 525 sq. ft.; Garage Floor, 172 sq. ft.; Excavation per ft. deep, 23 cu. yds.; Outside Walls, 20.00 sqs.; First Floor, 5.28 sqs.; Second Floor, with fin. flg., 6.30 sqs.; Ceiling, 11.58 sqs.; Roof Pitch, 14" rise per ft. run; Roof, 11.50 sqs.; Hips and Valleys, 50 lin. ft.; Cornice, C & F, 214 lin. ft.; Partitions, 150 lin. ft.; Inside Finish OS Walls, 108 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., 13 opgs.;

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Windows and Casements, 18 opgs.; Gable Sash and Louvers, 1 opg.; Chimney, 35 lin. ft.; Main Stairs, 1; Porch Floor, .15 sqs.; Front Canopy Ceilings, .54 sqs.; Canopy Beam, 24 lin. ft.; Canopy Roof, .75 sqs.; Canopy Cornice, 24 lin. ft.

**Page 55, July: Groenevelt & Son, Bldrs.**

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 140 lin. ft.; Utility Rm. Floor, 65 sq. ft.; Excavation per ft. deep, 30 cu. yds.; Outside Walls, 15.00 sqs.; First Floor, 6.82 sqs.; Ceiling, 7.45 sqs.; Roof Pitch, 7" rise per ft. run; Roof, 11.00 sqs.; Hips and Valleys, 84 lin. ft.; Cornice, C & F, 130 lin. ft.; Partitions, 110 lin. ft.; Inside Finish OS Walls, 115 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Inside Doors and Cased Opgs., 12 opgs.; Windows and Casements, 11 opgs.; Gable Sash and Louvers, 3 opgs.; Chimney, 22 lin. ft.; Porch Floor, .12 sqs.; Porch Ceilings, .12 sqs.; Porch Beam, 14 lin. ft.; Porch and Balcony Post and Newels, 3; Porch Roof, .18 sqs.; Porch Cornice, 9 lin. ft.

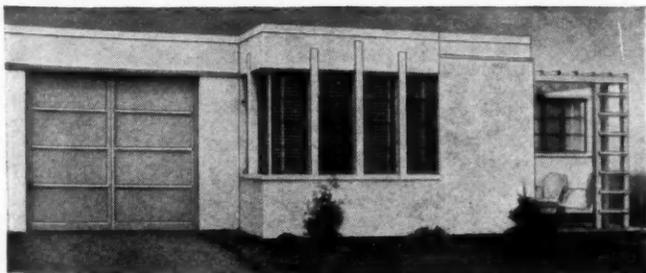
**Page 56, July: Moore & Hutchins, Archts.**

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 370 lin. ft.; Utility Floor, 140 sq. ft.; Garage Floor, 400 sq. ft.; Excavation per ft. deep, 70 cu. yds.; Outside Walls, 26.00 sqs.; First Floor, 19.00 sqs.; Ceiling, 20.28 sqs.; Roof Pitch, 5" rise per ft. run; Roof, 24.50 sqs.; Hips and Valleys, 20 lin. ft.; Cornice, C & F, 350 lin. ft.; Cornice, 12", 350 lin. ft.; Partitions, 200 lin. ft.; Inside Finish OS Walls, 250 lin. ft.; Front and OS French Doors, 4 opgs.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 2; Inside Doors and Cased Opgs., 18 opgs.; Windows and Casements, 21 opgs.; Roof-Vent Louvers, 14 opgs.; Chimney, 20 lin. ft.; Porch Floor, 5.00 sqs.; Porch Ceilings, 5.00 sqs.; Porch Beam, 70 lin. ft.; Porch and Balcony Post and Newels, 20; Porch Roof, 6.44 sqs.; Porch Cornice, 70 lin. ft.

**Page 58, July: Front Cover House**

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls 200 lin. ft.; Trench Walls, 160 lin.

# N.Y. BUILDERS PRAISE NEW CRAW-FIR-DORS



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**TruCost Figures**

(Continued from page 105)

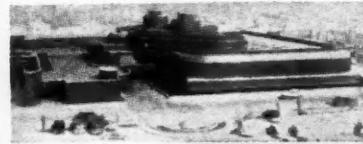
ft.; Basement Floor, 1558 sq. ft.; Garage Floor, 440 sq. ft.; Excavation per ft. deep, 60 cu. yds.; Outside Walls, 40.00 sqs.; First Floor, 15.58 sqs.; Second Floor, with fin. fig., 9.50 sqs.; Second Floor, without fin. fig., 1.40 sqs.; Ceiling, 25.08 sqs.; Roof Pitch, 12" rise per ft. run; Roof, 26.00 sqs.; Hips and Valleys, 100 lin. ft.; Cornice, C & F, 300 lin. ft.; Cornice, 8", 200 lin. ft.; Partitions, 250 lin. ft.; Inside Finish OS Walls, 320 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 3 opgs.; Garage Door 8 ft. wide, 2; Inside Doors and Cased Opgs., 27 opgs.; Windows and Casements, 45 opgs.; Gable Sash and Louvers, 2 opgs.; Chimney, 36 lin. ft.; Main Stairs, 1; Porch Floor, .32 sqs.; Porch and Balcony Post and Newels, 18; Garage Deck, 5.00 sqs.; Deck Rail, 70 lin. ft.

**Page 59, July; Rice & Rice, Bldrs.**

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls 125 lin. ft.; Trench Walls, 100 lin. ft.; Basement Floor, 862 sq. ft.; Garage Floor, 171 sq. ft.; Excavation per ft. deep, 28 cu. yds.; Outside Walls, 27.75 sqs.; First Floor, 7.92 sqs.; Second Floor, with fin. fig., 7.92 sqs.; Ceiling, 15.84 sqs.; Roof, 11.50 sqs.; Wall Coping, 175 lin. ft.; Partitions, 180 lin. ft.; Inside Finish OS Walls, 300 lin. ft.; Front and OS French Doors, 3 opgs.; Rear and Grade Doors, 3 opgs.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 24 opgs.; Windows and Casements, 26 opgs.; Chimney, 28 lin. ft.; Main Stairs, 1; Porch Floor, 1.70 sqs.; Porch Ceilings, 2.00 sqs.; Porch Beam, 40 lin. ft.; Porch and Balcony Post and Newels, 3; Porch Roof, 2.00 sqs.; Porch and Deck Rail, 58 lin. ft.

**Page 60, July; Realty Servicing Corp., Bldr.**

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 260 lin. ft.; Garage Floor, 324 sq. ft.; Excavation per ft. deep, 35 cu. yds.; Outside Walls, 30.00 sqs.; First Floor, 7.75 sqs.; Second Floor, with fin. fig., 6.75 sqs.; Ceiling, 14.50 sqs.; Roof Pitch, 5" rise per ft. run; Roof, 16.60 sqs.; Hips and Valleys, 100 lin. ft.; Cornice, C & F, 180



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**Page 61, July; Wyatt, Archt.**

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 300 lin. ft.; Excavation per ft. deep, 52 cu. yds.; Outside Walls, 21.00 sqs.; First Floor, 13.00 sqs.; Ceiling, 13.00 sqs.; Roof Pitch, 7" rise per ft. run; Roof, 15.00 sqs.; Hips and Valleys, 20 lin. ft.; Cornice, C & F, 210 lin. ft.; Partitions, 170 lin. ft.; Inside Finish OS Walls, 170 lin. ft.; Front and OS French Doors, 2 opps.; Rear and Grade Doors, 1 opp.; Inside Doors and Cased Opps., 15 opps.; Windows and Casements, 21 opps.; Gable Sash and Louvers, 2 opps.; Chimney, 22 lin. ft.; Porch Floor, 1.86 sqs.; Porch Ceilings, 1.86 sqs.; Porch Beam, 41 lin. ft.; Porch and Balcony Post and Newels, 4; Porch Roof, 2.60 sqs.; Porch Cornice, 45 lin. ft.; Porch and Deck Rail, 8 lin. ft.

**Page 62, July; West, Archt.**

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 150 lin. ft.; Trench Walls, 48 lin. ft.; Basement Floor, 1025 sq. ft.; Excavation per ft. deep, 38 cu. yds.; Outside Walls, 27.00 sqs.; First Floor, 10.25 sqs.; Second Floor, with fin. fg., 10.25 sqs.; Ceiling, 20.50 sqs.; Roof Pitch, 10" rise per ft. run; Roof, incl. porch, 12.00 sqs.; Hips and Valleys, 36 lin. ft.; Cornice, incl. porch, C & F, 218 lin. ft.; Partitions, 240 lin. ft.; Inside Finish OS Walls, 300 lin. ft.; Front and OS French Doors, 3 opps.; Rear and Grade Doors, 1 opp.; Inside Doors and Cased Opps., 25 opps.; Windows and Casements, 30 opps.; Gable Sash and Louvers, 3 opps.; Chimney, 35 lin. ft.; Main Stairs, 1; Porch Floor, 1.50 sqs.; Porch Ceilings, 1.12 sqs.; Porch Beam, 22 lin. ft.; Porch and Deck Rail, 8 lin. ft.

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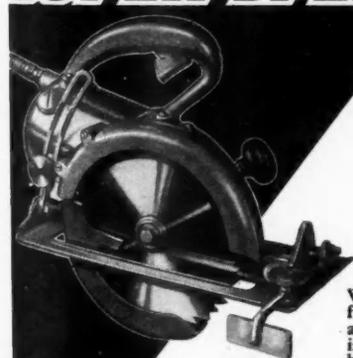
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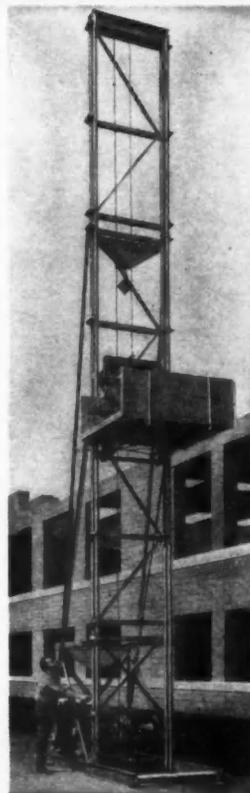
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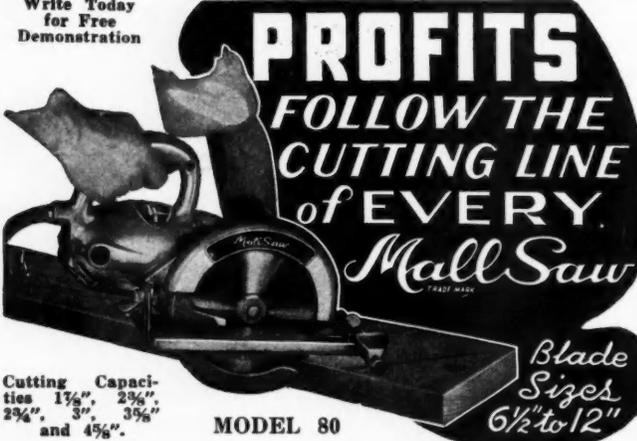
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**"THE STORY OF WESTERN PINES"**—Facts about Idaho white pine, Ponderosa pine and sugar pine trees, and the logging and lumber manufacture in the region where they grow are presented in a new, very attractive 64-page and cover booklet by—WESTERN PINE ASSN., Yeon Bldg., Portland, Ore.

**PRIMER ON WOOD VENETIAN BLINDS**—"Only Wood Blends with Wood" is the title of a well written little 16-page brochure discussing Venetian blinds from the point of view of the decorative harmony.—WOOD-FOR-VENETIANS ASSN., 939 Russ Bldg., San Francisco, Calif.

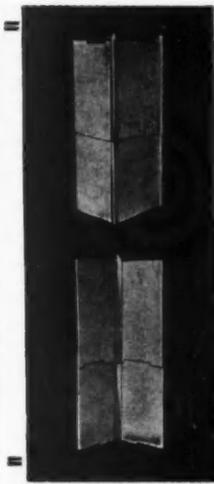
**KIMSUL INSULATION**—A new 16-page data sheet in standard form for vertical filing tells all about Kimsul expanding blanket insulation, and with architectural drawings and clear photographs, shows how it is best used. The economic thickness of building insulation is discussed; also the question of vapor seal.—KIMBERLY-CLARK CORP., Neenah, Wis.

**"MIRACLE WALLS BY TYLAC"**—"It's easy to design beautiful interiors with Tylac wall products" is the central thought of a new 4-page folder and data sheet on commercial and home interiors. In addition to information on Tylac wall sheets, there is also an interesting section on Tylac Presdwood mouldings and rolled, snap-on and extruded stainless steel and white alloy mouldings.—THE TYLAC CO., Monticello, Ill.

**NEW CURTIS WINDOW BOOK**—"Let's Decorate Your Home with Sunbeams" is a 24-page illustrated brochure on modern windows, and how windows aid in home decoration. Many interesting photographs of window installations are included, and considerable emphasis is given to the modernizing market, with before and after pictures showing the value of new windows in modernizing homes, exterior and interior.—CURTIS COMPANIES SERVICE BUREAU, Clinton, Iowa.

**"MODERN WALLS AT LOW COST"**—Armstrong Monowall is featured in full color in a new 8-page booklet. Monowall is a one-piece wall panel of factory-finished hardened wood-fibre board, and comes in 35 distinctive hues in plain, solid patterns, tile designs, marbled effects, simulated wood designs, and new metallic shades.—ARMSTRONG CORK CO., Building Materials Div., Lancaster, Pa.

(Continued to page 110)

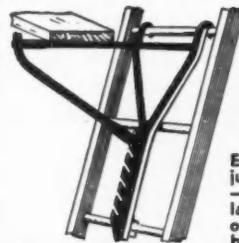


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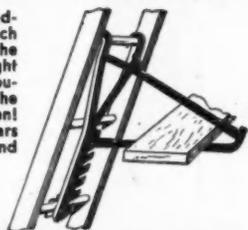
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Use  
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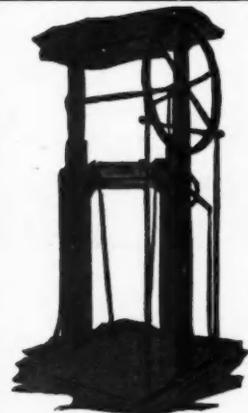
Easily and quickly adjustable—to any pitch—on either side of the ladder! Supports weight on three rungs! "Trouble Savers" are the strongest, handiest Ladder Jacks you've ever seen! Rugged, all-steel construction assures you of years of money-saving service! Write for details and prices TODAY!



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HAND POWER  
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A complete line of efficient Hand Power and Electric Elevators built to suit any requirement. Fitted for rapid installation in your building. These straight-line-drive machines are little giants of lifting power and are surprisingly nominal in costs.

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Give us your problems and let our engineers help you. Full descriptive literature on request.

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WHEELBARROWS  
HAVE THESE FEATURES**

1. 10 Spoke Wheels
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7. Square Bent Leg Shoes
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Heavy Continuous Rod in Top Edge of Tray



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Savutime and side-arm heater together cost only a fraction of the price of ordinary automatic hot water systems. By the touch of a button in bath, kitchen, or laundry, Savutime lights or shuts off the gas water heater. A red light above wall button glows while gas is on. Should the user forget, Savutime turns the gas off automatically. In addition to saving on initial cost, builders can point to Savutime as a special feature of their homes that slashes gas consumption 30-60% while providing unusual safety and convenience.



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GAS WATER HEATER  
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These cords will keep your portable tools on duty. **CORDX** (G-E 60 per cent, Type S) is designed for use where service conditions are severe. It can be dragged over sharp stones, metal, etc., or subjected to heavy blows without injury. It is flexible and long wearing. Resists the action of water, acids, etc.

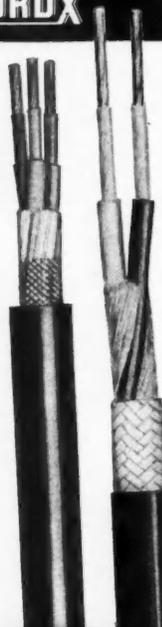
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**GENERAL ELECTRIC**

## CATALOGS—

(Continued from page 109)

"FLOORS THAT ENDURE, BY TILE-TEX"—A 12-page brochure of impressive beauty, much in full color, illustrates Tile-TEX resilience flooring in use and presents specification data, installation details and decorative schemes. A companion piece, "Decorative Walls by Tile-TEX," is an 8-page brochure suggesting new and practical ideas for decorative wall treatments.—THE TILE-TEX CO., Chicago Heights, Ill.

"CASE MODERN BATHROOMS"—Blueprinted plans and specifications for 12 different bathroom layouts are presented in a loose-leaf portfolio for the convenience of architects and home planners. The plumbing fixtures indicated have been selected to give economy of installation and maximum utility within the limitations of each bathroom—no waste space and yet no crowding. Specifications permit of a wide choice of fixtures of various types for varying pocketbooks.—W. A. CASE & SON MFG. CO., Buffalo, N. Y.

"PLASTERER'S MANUAL"—An extremely important and helpful handbook of 32 pages and covers with recommended details of construction and many action photographs has been prepared by the Portland Cement Association. Proved formulae and mixes for various types of work are given and the methods of producing various textures of plaster finish, including Spanish, Californian, Italian, English Cottage, Colonial, Modern American and Italian Travertine, are illustrated and described.—PORTLAND CEMENT ASSOCIATION, 33 West Grand Ave., Chicago, Ill.

MONARCH WEATHERSTRIPPING—"You buy it only once and there are 9 things to look for" is the title of an illustrated folder on selecting weatherstrips. MetaLane weatherstrips for double hung windows, doors and casements are featured.—MONARCH METAL WEATHERSTRIP CORP., 6300 Etzel Ave., St. Louis, Mo.

ALLMETAL WEATHERSTRIP—A new loose-leaf portfolio contains all information about how to sell and install Allmetal

## Now YOU can install METALANE..at Real Profit

We'll show you how to start a real weatherstrip business of your own... with plenty of prospects and a sweet profit on every Metalane job you install. National advertising has made home owners familiar with METALANE... the weatherstrip material that cannot corrode, turn black or stain paint, stone or woodwork in any climate; that lasts as long as the house itself. Write today for details of the new METALANE plan that enables you to make quick, easy profits in your territory. MONARCH METAL WEATHERSTRIP CORP., 6301 Etzel Avenue, St. Louis, Mo.

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Small letters 50c per word.	For Sale and Exchange
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Minimum twenty words.	To Insure Insertion Remittance Must Accompany Order

FOR SALE—used Floor Sanders, rebuilt at factory. As low as 25% to 50% of original prices. Write Box 740 American Builder, Chicago, Ill.

Weatherstrips and how to build up a profitable business. An illustrated price list included shows the entire Allmetal line. A 12-page catalog with price list also shows the extensive line of Allmetal nosings, bindings, edgings and wall trim.—ALL-METAL WEATHERSTRIP CO., 229 West Ohio St., Chicago, Ill.

"PRESSURE GUNS BY KENMAR"—A 4-page data sheet in three colors showing the complete line of caulking, glazing and grease guns developed by Kenmar. Many types and styles of nozzles for these guns are illustrated and priced.—KENMAR MANUFACTURING CO., Albert and Martha Sts., Philadelphia, Pa.

"REZISTAL" TREATED WINDOWS—An interesting 4-page data sheet features Huttig's "Rezistal" water repellent and wood preservative treatment. Builders are shown how to protect their woodwork against exposure to rainy weather, damp or wet plaster, high humidity, black mold or blue stain, fungus growth, termites, rot and decay, by ordering frames, windows and doors "Rezistal" treated.—HUTTIG MANUFACTURING CO., Muscatine, Iowa.

HALL OVERALL GARAGE DOORS—"Up and out of the way" is the title of a 4-page, two color data sheet telling about the Hall upward acting garage door, including specifications and numerous testimonials from many parts of the country.—HALL MANUFACTURING CO., Cedar Rapids, Iowa.

ENDURO STAINLESS STEEL BOOKLETS—Four new booklets on Enduro stainless and heat resisting steel, profusely illustrated, printed in two colors and completely up to the minute in factual data, are entitled "Republic Enduro Stainless and Heat-Resisting Steels," "Enduro—18—8 Types," "Enduro—Types AA, AA—FM, S—1, and FC," and "Enduro—Types HCN, NC—3 and HC" issued by—REPUBLIC STEEL CORPORATION, Cleveland, Ohio.

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**HEATILATOR FIREPLACE . . .**  
 a complete metal form around which any style fireplace is correctly built. Saves time . . . saves materials.

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Accurate, compact and dependable, the Model "A" is built for long years of service. Does complete job from rough lumber to finest trim and finish.

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Use Reid-Way Oscillator on last finishing cut, for a handsome, hand-rubbed effect, without extra labor costs.

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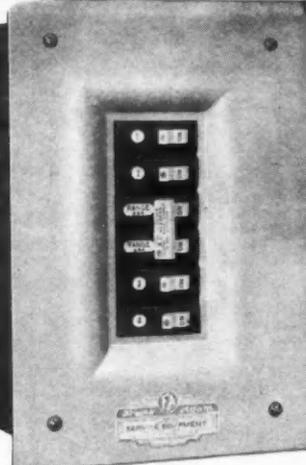
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**TYPE AC CIRCUIT BREAKER SERVICE EQUIPMENT**

Service Equipment with **FA** D.P. 35 Amp. AC Circuit Breaker for range circuit. Also 4 S.P. Branch Circuits.



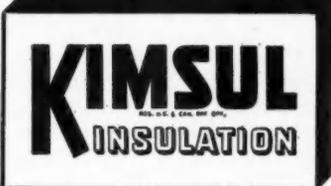
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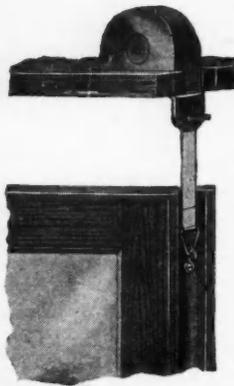
and Load Centers are especially desirable for residential installation — both in new and modernizing construction. With the new thin wall wire, which permits additional circuits in the same size conduit, they are particularly desirable, because they afford more circuits in the space occupied by the old equipment. Besides, they afford modern protection. Reasonably priced, the maintenance cost is negligible.

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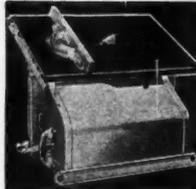
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**New G.M.C. KOSTKUTTER POWER SAWS**  
FOR HIGH SPEED PRECISION SAWING!



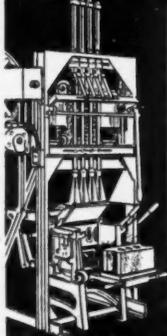
Left—Kost Kutter Jr. Fast, powerful, built to last. 3.6 H.P. Briggs & Stratton Engine. Cuts up to 3 1/4" stock. Right—Kost Kutter Sr. Husky, streamlined, sawdust proofed. Cuts up to 4" stock. Has 6 H.P. air-cooled engine or electric motor.



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