

SUBJECT SIGN-POST

A Quick Guide to the Business Articles and Designs
Presented in This Issue

GEOFFRELL DESIGN

BUSINESS MANAGEMENT

Why We Should "Build Now".....	37
Business Forecasts for 1931.....	39
Construction Figures for 1930 and Five Year Averages	80
Planning the Year's Work.....	42
More Work in Factory, Less on Job Cuts Costs	56
Planning an Office Building to Pay.....	60
When Does It Pay to Use Power Saws?.....	74
Success in Cement Products Business.....	78
Legal Questions Answered.....	96

DESIGNS AND PLATES

Home of Popular Size.....	50, 51, 52, 53, 59, 84, 93
Homes of Larger Size.....	47, 58, 49, 54
Home Plans, Complete Set.....	84
Tall Buildings for Smaller Cities.....	61-63
Apartment Design	70
Lumber Dealers' Offices.....	66, 108
Builder's Field Office.....	77
Store Designs	68
Public Comfort Stations.....	69
Cement Products Plant.....	79
Exterior Detail Photographs.....	45
Interior Detail Photographs.....	46, 49, 62
Scale Drawings and Details.....	85, 86, 87, 88, 89, 90, 91

TECHNICAL AND CRAFT PROBLEMS

Factory Cutting of Framing Lumber.....	56
Steel Framing for Apartments.....	70
Solid Wood Partitions for Concrete Floor Apart- ments	72
Power Sawing on the Job.....	74
High Arch Hoisting and Erecting Problems....	82
Carpentry Details	90, 91
Practical Job Pointers.....	98, 100

MERCHANDISING AND ADVERTISING

Business Getting Program for 1931.....	42
More Money to Build Homes.....	64
Modernizing Ideas	66, 67
Attractive Field Office Makes Sales.....	77
Size of the Building Market.....	80
Form Letters for Securing Business.....	92
The "100% Modern Kitchen".....	94

DEPARTMENTS

Editorials	37, 38
News of the Industry.....	102, 108
November Building Figures.....	104
Calendar of Coming Events.....	102
The Builder's Library.....	110
New Materials and Devices.....	112, 116
Masthead Page	5
Forecast of February Issue.....	7
Index to Advertisements.....	145

This Classified Index is Presented for the Convenience of Readers Who Are Seeking Features and Designs of a Particular Sort. An Index by Pages in Regular Order Appears on Page 5.



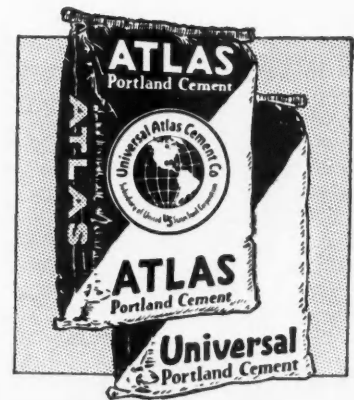
High - Early - Strength concrete approaches to garage and gasoline tanks of Epley Garage Co., Gettysburg, Pa. Universal Atlas methods and cement used. Peters Cement Products Co., Gettysburg, contractor.

Traffic travels this concrete TWO DAYS AFTER PLACING

● ● ● This garage and filling station is located at a stopover point for all overland busses using the Lincoln Highway in the East. New concrete drives to the pumps and into the garage were needed. For business reasons the owners did not want to tie up the station for a longer time than necessary.

By using high-early-strength concrete made with Universal Atlas methods and cement and by curing it with wet burlap, the contractors were able to open the pavement to traffic two days after placing. This two-day concrete reduced to a minimum the time the gasoline pumps were tied up.

High-early-strength concrete, made with Universal Atlas methods and cement, is used for concrete work which calls for speed, greater strength, watertightness and durability. A booklet containing the methods for obtaining it will be sent on request.



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DULUTH
ST. LOUIS
KANSAS CITY
DES MOINES
OMAHA
OKLAHOMA CITY
BIRMINGHAM
WACO

Universal Atlas Cement Co.
Subsidiary of United ^{US} States Steel Corporation
Concrete for Permanence

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NEW YORK
NEWARK
PHILADELPHIA
BOSTON
ALBANY
PITTSBURGH
CLEVELAND
COLUMBUS



AMERICAN BUILDER AND BUILDING AGE

WHY WE SHOULD "BUILD NOW"

THE present business depression has lasted longer already than that of 1921. A revival of general business following a depression always is started by increased activity in one or more important branches of industry. In what branch of industry is increased activity likely to first show itself in the next revival of general business, which cannot be far off?

Spencer Trask & Company, one of the leading investment banking houses of the country, in a circular letter regarding the general business situation issued on December 9, anticipates that a revival of residential construction will be among the first developments which will start the country again upon the road to prosperity. "There appears ample reason," says Spencer Trask & Company, "to expect residential building to begin an upward trend as early in 1931 as any other group of comparable importance in our business structure." The reasons for this conclusion are clearly and definitely stated. The downward trend in residential building began early in 1928, or before the decline in other construction activities, and it continued throughout the year 1930. During the latter part of last year, however, residential building began to show a relatively much smaller decline than other kinds of construction. In November the floor area of new residential contracts showed a decline of only 12 per cent as compared with November of the previous year, while the recession shown by the entire building industry was 35 per cent.

Upward Trend Inevitable

"The definite flattening out of the decline in residential building exhibited during the past several months," says Spencer Trask & Company, "would seem to indicate that this division is rapidly approaching a bottom from which an eventual upward trend is inevitable. . . . It is certainly an established fact in the history of past

depressions that it has been this same type of selective improvement, as is now evidenced by residential construction, that has led the building industry, and frequently general business itself, out of depression and back to a normal state of prosperity."

Building Costs 15 Per Cent Less

Never was there a time when the soundness of the slogan "Build Now" could be supported with more convincing evidence than at present. Various agencies, including the AMERICAN BUILDER AND BUILDING AGE, have gathered information from all parts of the country regarding the comparative costs of building a year ago and at present. The declines of costs vary in different parts of the country, and in different branches of the building industry; but they average at least 15 per cent. Prices of building materials are much lower. The efficiency of labor has increased. The building industry has not benefited as much as most other industries from the sweeping recession of interest rates, but even the costs of credit for building are not as high as a year ago.

Now Is the Time to Build

These more favorable conditions for building are due to the depression, and will not continue indefinitely. The time to take fullest advantage of them is now. Those who begin erecting apartment buildings as soon as practicable will gain a permanent advantage over both those who have built at higher costs in the past and those who will build at higher costs in the future. The man who wants to build a new house or modernize his old house will be able to do so at a smaller expenditure within the next few months than for years afterward.

Builders now have an unusual opportunity both to make money for themselves and to save money for their customers. Every builder who succeeds in influencing

customers to build now will profit thereby not only now but in future, because these customers will know in future that he gave them good advice, and consequently will be more disposed to do business with him.

FIRST REPORT, CENSUS OF CONSTRUCTION

THE building industry has been eagerly awaiting announcement of the results of the first official census of construction, confident that the well-known thoroughness of Uncle Sam and his Bureau of the Census would uncover new facts of importance regarding the size and character of the various factors that function as contractors in this great industry.

The first report of the Construction Census was released on December 12. It covers the District of Columbia and presents a graphic analysis of the fifty-seven million dollars of construction there in 1929.

One of the significant facts revealed was that: 40 operative builders in Washington averaged \$400,000 each of building work during 1929; 57 general building contractors averaged \$353,807 each; 7 highway contractors averaged \$211,429 each; and 123 sub-contractors averaged \$122,569 each.

In addition to the above, reports were also received and analyzed from 66 general contractors and operative builders who handled an average of \$10,000 each, and from 323 sub-contractors who handled \$7,000 each.

The 40 operative builders reported cost summaries that showed that 15 per cent of their costs went to labor directly employed, 22 per cent went for purchase of materials, while 46 per cent went to sub-contractors, leaving 17 per cent for administration expenses. The general building contractors reported quite a variation from these percentages. The general contractors sublet 70 per cent of their work, put 10 per cent into direct labor, 8 per cent materials and 12 per cent administration.

The 226 contracting firms in the District of Columbia, doing \$25,000 or more annually, employed during 1929 an average of 32 skilled and unskilled workmen each. The total record shows that each workman produced an annual output of \$5,000 dollars' worth of construction.

If we can assume this \$5,000 as a typical figure for the annual output of each building craftsman on the average in all parts of the country, we have in this census report an interesting check on that much discussed question—the total size of the construction forces of the nation.

Quoting from a letter to AMERICAN BUILDER AND BUILDING AGE from Dr. Alanson D. Morehouse, Chief of the Construction Section of the Bureau, "To conservative minds it might seem a hazardous guess to estimate the total number of workmen employed in the construction industry throughout the United States upon the basis of preliminary figures for the District of Columbia alone, representing less than one per cent of the assumed total of \$8,000,000,000 for the year. The average amount of work for which one workman is

required, as given in the report, is susceptible of this application, however, provided its limitations are clearly understood. Your derived figure, 1,600,000 workmen, may not be such a wild guess after all, for it agrees pretty closely with the estimate presented in the findings of the President's Conference on Recent Economic Changes, which showed the number of persons engaged in construction (excluding highways) as 1,563,000 in 1927 (Volume II, pp. 474-477)."

Further reports of the Construction Census will be awaited with interest, and it is the hope of this publication that this much needed statistical and survey work of construction may be continued and made a regular bi-annual feature of the Distribution Division of the U. S. Census Bureau.

NEW YEAR'S RESOLUTIONS

THE year 1931 will be one in which the building industry will make a tremendous stride forward or will fail dismally to take advantage of unusual opportunities. The AMERICAN BUILDER & BUILDING AGE is confident that the industry will recognize the opportunities presented and will make the most of them.

To further the best interests of the industry, AMERICAN BUILDER & BUILDING AGE is making the following NEW YEAR'S RESOLUTIONS: The Editors invite all our readers to join us.

We resolve:

- First: To do everything in our power to bring about closer co-operation and better team-work in the industry; to further the formation of local organizations, bringing contractors, architects, building supply men, financing institutions, sub-contractors, and others together to work for the common good.
- Second: We resolve to further better standards of design and construction that the American public may be better served.
- Third: We resolve that we will fight for lower taxes on homes and reduction of construction costs to make home ownership more desirable to the American public.
- Fourth: We resolve to work for improved financing methods that will make buying a house more easy without sacrificing financial security of the loaning agencies.
- Fifth: We resolve to further modern merchandising methods in the conduct of the contracting business, and in selling the services of the building industry as a whole.
- Sixth: We resolve to promote efficiency in construction, to the end that a fair profit may be made through use of new materials, new methods, new equipment and efficiency in business organization.
- Seventh: We resolve to fight for and defend the independent, local builder and help him to compete successfully with nationally organized "mail-order house" companies.

What Outlook for Building in 1931?

BUSINESS FORECASTS

By

WILLIAM GREEN
A. E. HORST
FENTON B. TURCK, Jr.

F. A. MERRICK
MALCOLM R. PRINE
A. J. HAGER

Home Building Will Solve Unemployment

By WILLIAM GREEN

President, American Federation of Labor



William Green

THE outlook for private construction in 1931 is not promising. For some time to come we shall probably have to rely on public building to provide work. The \$400,000,000 worth of public construction authorized in last fall's election, together with the \$110,000,000 which will probably be appropriated by Congress and the work already under way will probably make the first months of 1931 a record period for public construction. These projects will provide work for the unemployed and stimulate activity

in the material industries. But private construction and especially home building are the back bone of the industry. Normally private building forms about 80 per cent of all construction and home building about 45 per cent.

Even though the building industry has cut operations drastically in the last two years, the vacancy rate is still reported to be relatively high. Construction in 1929 was 13 per cent below 1928, judging from the total volume of contracts awarded in 37 states, and in 1930 building was 21 per cent below even the low 1929 level. With the population increasing each year and the normal demand for homes, offices and industrial plants growing, the high vacancy rate which persists after these cuts in construction can only be due to a shrinkage in the income available for rents. Especially is this true in the residential field. Although home building in 1929 was 31 per cent below 1928, and in 1930 was 41 per cent below even 1929 still there are many vacancies.

The shrinkage of workers' incomes due to unemployment, part time work and wage cuts in this depression is a very important matter in the building situation. Wage and salaried workers form about 83 per cent of the population of the United States and receive 57 per cent of the Nation's income. The incomes of wage earners alone have shrunk by \$8,800,000,000 since last year. This means a loss of about \$1,500,000,000 in money available for rent. Add to this the fact that many wage earner families are living with relatives or combining with another family to save expense, and we have an enormous cut in rent payments and consequent vacancies. Wage decreases mean huge losses for all industries depending on workers' purchases—and practically all industries do depend, either directly or indirectly, on workers' buying. Although workers' incomes are depressed at present, rising business activity will increase their buying power. There are 30,000,000 wage earners in the United States who need good homes for their families. They have been living in cramped quar-

ters to economize during the depression. This is an immense group of potential customers for home building programs. It will be good policy to plan construction now so that homes will be ready as soon as incomes increase.

But the problem of providing homes and apartments at reasonable rents or purchase price must also be met. The building industry needs to conquer the problem of mass housing as the automobile industry has conquered the problem of supplying the masses with inexpensive cars. It should be made as easy to buy a home as to buy a car on the installment plan.

This is part of the problem of satisfactory financing, and this problem extends to all types of building activity. Costs of actual construction work have been reduced in recent years while the wage level has risen. Construction costs are 28 per cent below the 1920 peak, 8 per cent below 1923 and 6.5 per cent below last year. But the cost of financing has not been adequately met. It is still one of the greatest hindrances.

The construction industry as a whole needs to co-ordinate its different elements to attack certain outstanding problems of stabilization. The post war building boom is over and instead of the construction deficit which gave opportunity for speculative building, we now have a demand increasing from year to year with the growth of the population. We need intelligent adjustment of supply to demand to take the place of speculation. Probably the most hopeful sign for the future is the increasing interest in these problems in building circles.

Public Works Promising for 1931

By A. E. HORST

President, Associated General Contractors of America

IT is difficult at this time to make predictions as to the probable construction volume in 1931, particularly as regards building construction. Along in February information should be on hand which will more clearly indicate the trends in the building field, especially in that section of it most in doubt, the building to be done for private interests.

At the present time it appears that in 1931 there will be a considerable increase in the totals of construction of a public nature though even this field is spotty. State and Federal Aid highway programs should be very active for instance, the limit to activity depending on the amount of the special appropriations and provisions set up by Congress as emergency legislation. Yet in city, county, township and village road work a recession is expected, because this work is financed through tax assessments hard to negotiate under prevailing condi-



A. E. Horst

LEADERS OF INDUSTRY, REPRESENTING CRAFTSMEN, CONTRACTORS, DEALERS AND MANUFACTURERS, GIVE THEIR VIEWS OF THE OUTLOOK FOR BUILDING BUSINESS IN 1931

tions. Public building, public works and all other types of public construction financed through bond issues or federal funds should be increasingly active since bond issues show phenomenal increases over preceding years.

Contrary to the general impression the wind up of 1930 did not reveal any notable gains in public construction. The progress made in the forepart of 1930 was wiped out by recessions in the last six months. All signs indicate at present that 1931 will be different in this regard.

For private construction the outlook is gloomy as yet though the picture may change in the next two months. During 1930 such operations were off more than a billion dollars from 1929, according to reported contract figures. They were off $1\frac{3}{4}$ billions from the more normal year of 1928. Undoubtedly any surplusage of building space should have been taken up.

Yet so far there is no evidence of recovery in private building. In fact the only data I have available indicates that the volume of private work reported as being contemplated is more than fifty per cent below similar reports this time last year. While contemplated reports are of little value in establishing accurate future volume, they do indicate a trend. Such reports, however, have a tendency toward rapid change, hence by the time this material is in print a different outlook entirely may be tenable as regards private building for 1931.

Reduced Costs to Encourage Building

By FENTON B. TURCK, Jr.
Vice-President, American Radiator Company



Fenton B. Turck, Jr.

A REVIEW of past building activities illustrates the necessity of completely separating the building field into two classes, residential building and non-residential building, which includes commercial and industrial projects.

For general economic interests, residential building is of great importance because its units whether they are single family dwellings or small apartments are not confined to the larger cities but are a part of the normal growth of the smallest village.

Residential building, which normally runs at the rate of three billion dollars per year, has declined from that figure in November, 1928, to its present level of approximately one billion dollars. This prolonged decrease, accompanied by a general business deflation, can most conservatively be held as wiping out any surplus of housing that might have existed.

We notice in recent figures a considerable decrease in costs of residential building. What part of this decrease is in materials or what part in higher efficiency of labor has not been actually determined, but that an owner today can obtain a better and larger building for the same costs as prevailed even a few months ago is most apparent. The importance of this reduction of costs of residential building lies in enabling a larger group of our population to satisfy the universal desire of every individual to better his living conditions. The very bettering of these conditions is a vital cog in the

general business machine. A normal increase in the demand for residential building developing in 1931 will undoubtedly play a major role in the restoration of money turn over and employment. With any developments of general business stability, the accompanying demand of home building will be encouraged by the prevalence of ample funds in building and loan associations and savings banks for the financing of conservative residential construction.

The volume of non-residential building during these past twenty-four months has been maintained at a rate favorably comparable to that of 1928. In 1931 we might be too hopeful to expect a continuation of non-residential building at the 1930 degree of activity. However, any decrease in non-residential building may more than be compensated for by the gradual return of conservative residential construction.

Return to Sound Business Expected

By F. A. MERRICK

President, Westinghouse Electric and Manufacturing Company

THE year drawing to a close has presented a progressively disappointing picture for commerce and industry in general. Following the stock market break in October, 1929, the high tide of business receded quickly to a level which was almost universally accepted as the base line to be expected for the current course of things until the upturn came in sight. This view was encouraged by several favorable factors present which have not usually been found in similar situations. Prominent among these were the plentiful money supply and the general absence of swollen inventories. Existing inventories, however, were then judged in relation to past consumption, and when the stock markets began their pronounced downward slide in midsummer of this year and customer buying was abruptly curtailed in consequence, the inventories loomed larger and prices of all commodities yielded, bringing the result of added stagnation through the natural timidity of purchasers in a falling price market.

The electrical manufacturing industry suffered with all others in this series of changes, except in so far as work on larger types of equipment, requiring considerable time for fabrication, held up the level of employment during the greater part of the year.

While the short time outlook in the industry thus shows a much lower trend than has been the case in recent years, there are many aspects of the situation that promise improvement—the extension of electrical service to the farms of the country is progressing with increasing rapidity—there are important projects of electrification of transportation systems, some now under way and others approaching maturity—many of the important lines of industry are embracing this period of relatively slack business to rehabilitate their plants on most modern efficient basis which generally means increased electrical equipment—all branches of Govern-



F. A. Merrick

ment, Federal, State and Municipal, are joining in an effort to advance construction of useful public works—and even under present conditions there is ground for expectation that the use of electricity in the households of the country will be accelerated throughout the coming year, with attendant market for the appliances which will create this added use.

And beyond all this is the basic fact that goods in the hands of the public are daily being consumed, that the shelves of the dealers are being cleaned up and the stocks of distributors lessened—thus the fundamentals of a normal return to sound business in all lines are working themselves out as must ever be the case.

This is too large and too fundamentally prosperous a country to stand still for any long period.

Confident Outlook for Home Building

By MALCOLM R. PRINE

Past President, Better Home Builders' Association of Columbus, Ohio



Malcolm R. Prine

THERE are about 4,000,000 people or one million more families in the United States today than two years ago. Many thousands of homes have become obsolete. There is a steadily growing tendency toward modernization of older houses in good residence locations. Construction costs have reached their lowest point since 1921, in fact, in actual competitive bidding they are even lower. First mortgage money is available in abundant quantities at low interest rates. Good building lots, fully improved, are to

be had at rock bottom prices.

With these facts as our premise, it would seem that we might look forward to 1931 residential construction activities with supreme confidence. We have, however, many unfavorable factors which will greatly retard any large revival in this field.

Of particular importance in this regard is the total lack of a fundamentally sound method of secondary financing. Hundreds of thousands of the 18,000,000 renters in this country would take their first step toward home-ownership in 1931 if, in addition to the usual 50 or 60 per cent first mortgage, there were any semblance of a sound financing program universally available.

Next in importance we would class the loosely woven condition of the entire industry, resulting in present price levels being maintained, in most cases, at a loss to manufacturer and retailer alike. Undoubtedly this condition has much to do with the backwardness of the financial interests in seriously attempting financial aid, looking toward the stabilization of the industry. Price levels in building materials are 43 per cent higher than in 1913; in all commodities they are but 23 per cent higher. The total costs of construction have increased 93 per cent since the war. These facts reflect a bad condition in the construction end of the industry and show the effect of the ever increasing wage scales of the building trades, without any increase in daily production.

Still another retarding influence is the continued falling off of rents. We believe the supply of homes at the present time to be normal, but rents are only 57 per cent higher than before the war in the face of the previously stated increased construction costs. Residential invest-

ment structures will not be built in any large quantities until the proper level of costs and income is reached.

Summarizing these factors and adding to the favorable ones the fact that many families are aware of and ready to take advantage of present low price levels, and the seeming certainty of an improved general business, lead me to predict a very considerable increase in single residence construction in 1931. Undoubtedly this business will largely consist of those who have sufficient cash to finance themselves by first mortgage, and such others as build their homes through building organizations, or contractors who are financially able to handle the necessary financing.

Dealers Plan Aggressive Merchandising

By A. J. HAGER

President, National Retail Lumber Dealers' Association

THE retail lumber industry has reached its lowest ebb; there will be an upward trend, though slowly at first on account of general conditions.

Surveys show that the normal need of new homes in United States is 400,000 annually, while we have been building only 300,000 annually. This shortage must be met before very long as well as the modernizing of homes ten years old and older, which should make home construction better.

I believe, too, that more aggressive merchandising on the part of dealers will have much to do with diverting much funds into home building that have been going into other lines.



A. J. Hager

How I Beat the Stock Market a Year Ago

By J. HAROLD PETERSON

President, West-King-Peterson Lumber Co., San Diego, Cal.

ON November 1, 1929, I had available considerable funds for investment, and I was advised on all sides to double my money by investing in the stock market. But, like the man who eats in his own restaurant, being in the lumber business, and having recently come to San Diego, I decided to use my available funds by investing in a home.

So, a year ago today in San Diego, I purchased a lot, went to a San Diego architect and had him design a home of generous size, the building of which was completed in March, 1930.

Stocks crashed, the panic was on, and while other unfortunates were covering margins, my wife and I were having the pleasure of covering OUR piece of ground with OUR Home. There has been no crash in this investment, no heartaches, no worries, no decrease in value—but on the other hand, an increase in happiness and the joy of living.

I have been in the retail lumber business for the past fifteen years, during which time I have sold materials for the homes of countless individuals; yet in all my experience I have never met one who later advised me that his investment in his home turned out to be a poor one.

"Cheaper to rent than to build?" Blah! Don't take this advice from renters or stock brokers, but "Ask the man who owns one."

A Well Planned Program for 1931 Will Help You Make It a Year of PROFITS. Lay out a 12-month schedule and then go after the business.



Now is the Time to Prepare

A BUSINESS PROGRAM FOR 1931

PLANNING, everlasting planning, must be the constant concern of the builder, Colonel William A. Starrett, President of Starrett Brothers, has said. He goes on to add that managerial ability is the keystone of good business, and organized forethought the very essence of building success.

This is the time for Good Resolutions, and the best one we can think of is a *planned* business program for 1931 for our readers.

Every successful business is operated on the basis of an all-year, constructive plan. Large corporations make out a definite goal for the year, budget their proposed sales among departments, and then go out and try to beat the schedule. Business men would be the first to agree that you cannot predict exactly what will happen a year from now, but there will be no doubt in their minds that they can do a *better* business if they operated along a well-thought-out program.

To Start the New Year Right

January, the month of inventories, is a good month for contractors and builders to take stock of their businesses to see where they are likely to come out in 1931. This can best be done by a diagram or schedule, setting down definitely in black and white the major activity that will occupy each month. The value of this in advertising and business-getting is immediately apparent; business is not obtained by overnight splurges; it is the result of a concerted month-to-month drive worked out in an efficient manner. An advertising plan should be made out for the entire year.

Laying out an efficient business program for 1931

requires first of all a careful analysis of conditions as they are at the present time. The reasoning may be as follows:

How much business can I expect in 1931? Set down conservative figures for totals that may logically be expected for each month. Much of this may be conjecture, but the figures as put down should be the result of consideration of national and local business conditions, community needs, and contracts already under negotiation. If this first listing shows considerable volume, it will require a check-up of present equipment, man-power, and prospective material sources to see whether they will be adequate.

Survey the Work Ahead

The preliminary survey of business possibilities for the coming year may very likely reveal a gloomy prospect. Very few builders indeed, this year, will be able to set down enough work, at this time, to keep them profitably busy throughout 1931.

Putting it down, however, will bring out the facts, bad as they may seem, and you can then start out from scratch knowing exactly how you stand. With this as a beginning, an aggressive, lively, all year selling and merchandising program can be planned to get the business coming your way.

The best time to plan a selling campaign is a number of months *before* it will get into full swing. Now, right now, is the time to begin the business-getting activity that will bring in all the contracts you want next summer.

January, the quiet month in construction, leaves much time for profitable contact-making. Have you been at-

tending meetings of your local business-men—Rotary, Kiwanis, etc. If not, now is the time to make friends there.

One builder in a small Eastern town set out methodically to make a friend in every business establishment in town. He checked them off each day—a certain number. Business was bad, he had plenty of time, and he made use of it by making friends. He kept a record, and five years later he was able to show that practically every call he had made during the winter months had brought him business at a later time.

Definite Merchandising Plan

Next in importance in this all-year program is a definite merchandising plan. You are going to spend a certain amount on advertising—now is the time to schedule it carefully to see that it will do the most good over the whole year.

Both newspaper and direct-by-mail advertising should be planned to have special appeals for each month. For instance, in early spring there is the special drive for new home business from people who from force of habit think of starting to build them. In June many builders feature homes for June brides. In September or October a fall modernizing campaign is effective. Later in November and early in December the Christmas appeal is emphasized in newspaper advertisements and direct-by-mail folders.

It is a well-proven axiom that advertising, even though it is small in amount, is most effective when continued month after month, keeping the name of your business constantly before the minds of the public.

Knowing how much advertising you are likely to do, you may be able to save money by making a year-contract, and getting the advice of your printer, newspaper advertising manager, or direct mail experts in preparing lively copy.

In planning your merchandising efforts for the coming year, now is the time to consider the use of radio, of posters or sign-boards, a model home, etc. Each of these may be able to perform a special service in your community at a given time, and a year-around plan will enable you to space them properly.

Turning now from the selling end of your business, it will be well to consider the internal question of costs. Ask yourself, How can I plan my business for 1931 to enable operation at a reduced cost? Consider two divisions: first, cutting costs through organization and management; second, cutting costs through more efficient production.

Records and Control

A careful check-up at the beginning of the year is especially valuable when directed towards business organization and control. Where can shifts be made to reduce management costs without losing proper supervision? How has your cost record and bookkeeping system been working,—would this not be a good time to overhaul it and set it up on a more efficient basis? Has your estimating been accomplished with accuracy and without undue expense this past year? Perhaps now is a good time to correlate all your figures for ready reference in estimating new work.

Production costs as differentiated from management

A FULL SCHEDULE FOR 1931 Suggested Program for 12 Months—Fill in Your Own Items

JANUARY

Lay out business program, overhaul accounts, bookkeeping system, check up on cost records to improve estimating, build up mailing lists, continue interior modernizing and improvement work

FEBRUARY

Make special drive for business contacts, solicitation of new business, calls on local men of influence. Lay out advertising campaign for entire year, plan new merchandising and selling methods.

MARCH

Start advertising and merchandising campaign and increase selling efforts; get under way with jobs on hand. Call on building supply men, getting new selling stunts and new materials; arrange improved financing methods for later months.

APRIL

Increase newspaper advertising and letters to prospects; get salesmen making house-to-house canvas. Start radio programs announcing new features of Spring houses; work up new floor plans; push work on hand.

MAY

Arrange display of new house designs and floor plans; send salesmen out with portfolios showing past work; announce construction of model home, inviting people out Sundays to watch program; call attention to houses being built by items in newspapers.

JUNE

Special advertising campaign, Homes for June Brides; feature new designs, new improvements in materials; erect sign-boards.

JULY

Organize crew for efficient handling of new work; announce opening of model home; record construction costs for use in estimating; take construction photographs for later use in selling portfolio.

AUGUST

Advertise "Build Now" campaign with special inducements for people wanting new house by Xmas; start modernizing campaign; check over materials on hand.

SEPTEMBER

Push fall modernizing campaign; send out letters and folders showing advantage of starting work in fall; re-double selling efforts; wind up summer projects; work out series of collection letters.

OCTOBER

Overhaul and put away equipment; store materials; lay off extra help; continue modernizing and "Build Now" campaign; replace construction men with salesmen, and send them out after business.

NOVEMBER

Start winter work program; advertise modernizing of interiors; start "Better Homes for Christmas" program; increase contact and business-building work.

DECEMBER

Xmas selling campaign under way; push "Give a Home for Xmas"; arrange special Xmas display and feature Xmas theme in advertisements and letters; collect and catalog photographs, selling data, cost records, etc., for later use.

Setting Down in a Methodical Way Your Month-by-Month Program for the Coming Year will Enable Better Planning and More Efficient Control of Business.



This Builder Set Out Methodically to Make a Friend in Every Business Establishment in Town.

Last of all, but by no means of least importance, January is a good month to review your construction methods. Compare notes with other men in the business, study new developments as revealed in the *AMERICAN BUILDER AND BUILDING AGE*, and recent technical books. Men in every other profession are constantly on the alert for new methods; building construction is developing probably more rapidly than any other field you can name. Leave a place in your 1931 schedule for investigation and trying-out of the latest construction methods.

The year 1931 is bound to be a better one than that which has passed. Every indicator of importance points to the fact that building will be on the upturn this year. Never has a comprehensive, well worked-out business program been more needed. Now is the time to start your business year right!

Opportunity—1931 Model

HERE are a few thoughts about the New Year, and the opportunity it presents.

Good business is twelve months nearer at hand than it was a year ago.

The census shows that there are more people in the country now than then. There is more real cash money in the savings banks, less installment buying.

In the meantime, wear and tear, depreciation, and desire, are just as much with us as ever.

The combination of these obvious facts certainly spells opportunity to the lively, energetic builder. A year from now, many of you will look backward and wonder how you happened to miss the golden building opportunities of 1931. History has shown that, in times like these, the seeds of many a successful business have been sown.

Already builders who are on their toes are taking advantage of conditions by *working* instead of *wishing*. They are taking advantage of low labor costs, low material costs, and improved financing opportunities.

Perhaps it won't be such a bad year after all!

costs should be considered through examination of equipment, use of new materials, use of new building methods. In the busy summer months you will not have time to investigate the advances being made in these departments; now is the time to do it.

Gather all available data on the cost-cutting possibilities of added equipment. Would the addition of an electric saw, a surfacer, a new truck, or new concrete mixer make possible the elimination of a high labor charge?

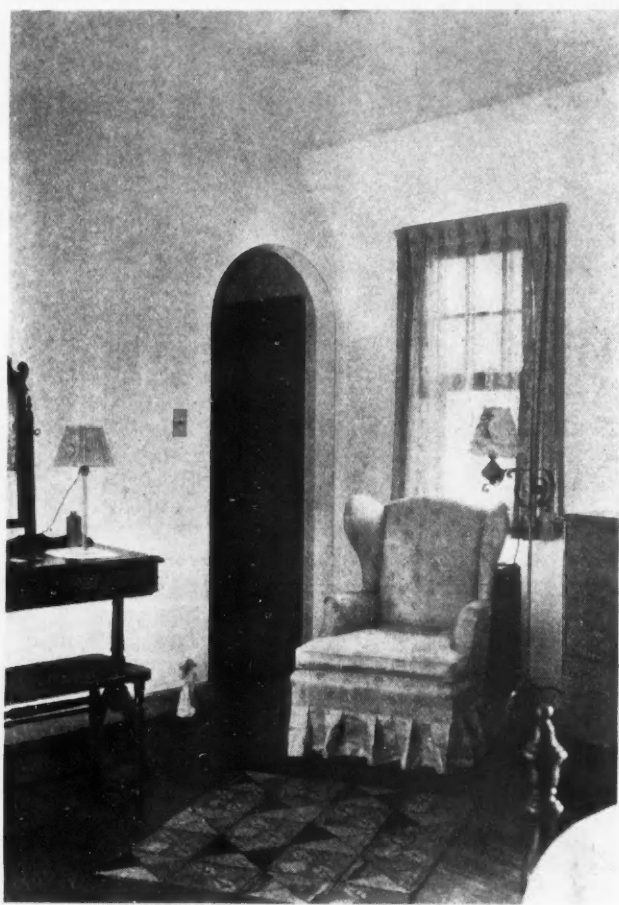
Now is a good time to check up on the claims of material manufacturers of progress made in new products intended to enable you to give your customers a better building for less money. Call on your building supply men and find out what's new in the industry.



E. J. HALL Photo

Enter here for

SNUG AND SECURE HOMES



Comfortable Interiors

Plain, substantial, livable and inviting—these interiors as well as the exteriors opposite reveal a house designed without frills and not bound by set archaic rules, a free and independent interpretation of a home for comfortable living—frankly American. This house fits its site and rests quietly beneath the large protecting trees—it does not "shout" at the passerby but it extends a cordial welcome to those who live within its walls and to those who pause at its entrance.

Simple, straightforward and honest in character it is in good taste and does not offend—inside or outside the house the feeling is the same. The plan arrangement shows an eye for economy of cost and convenience in service.

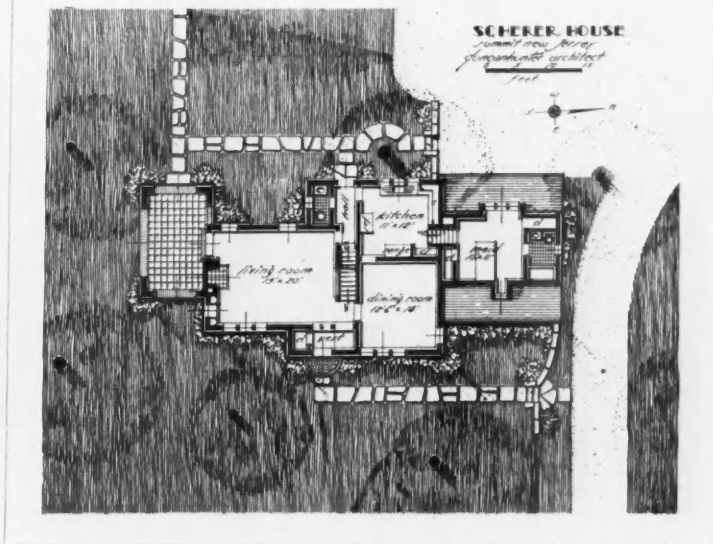
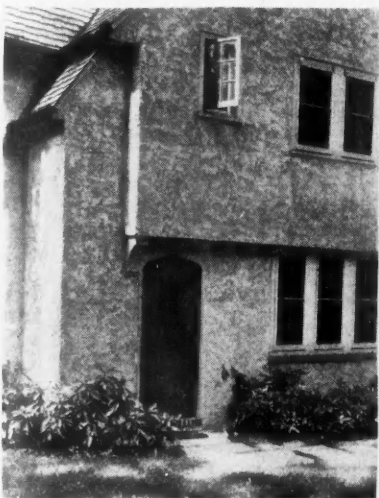
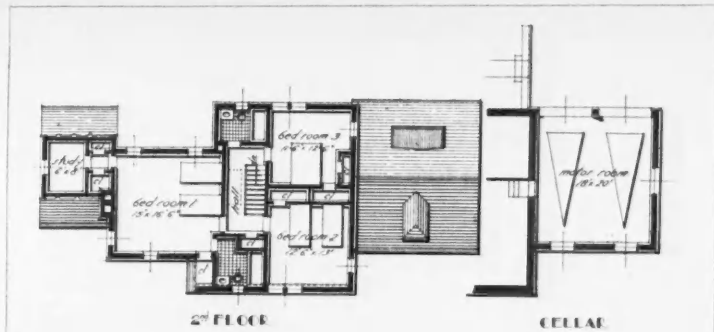


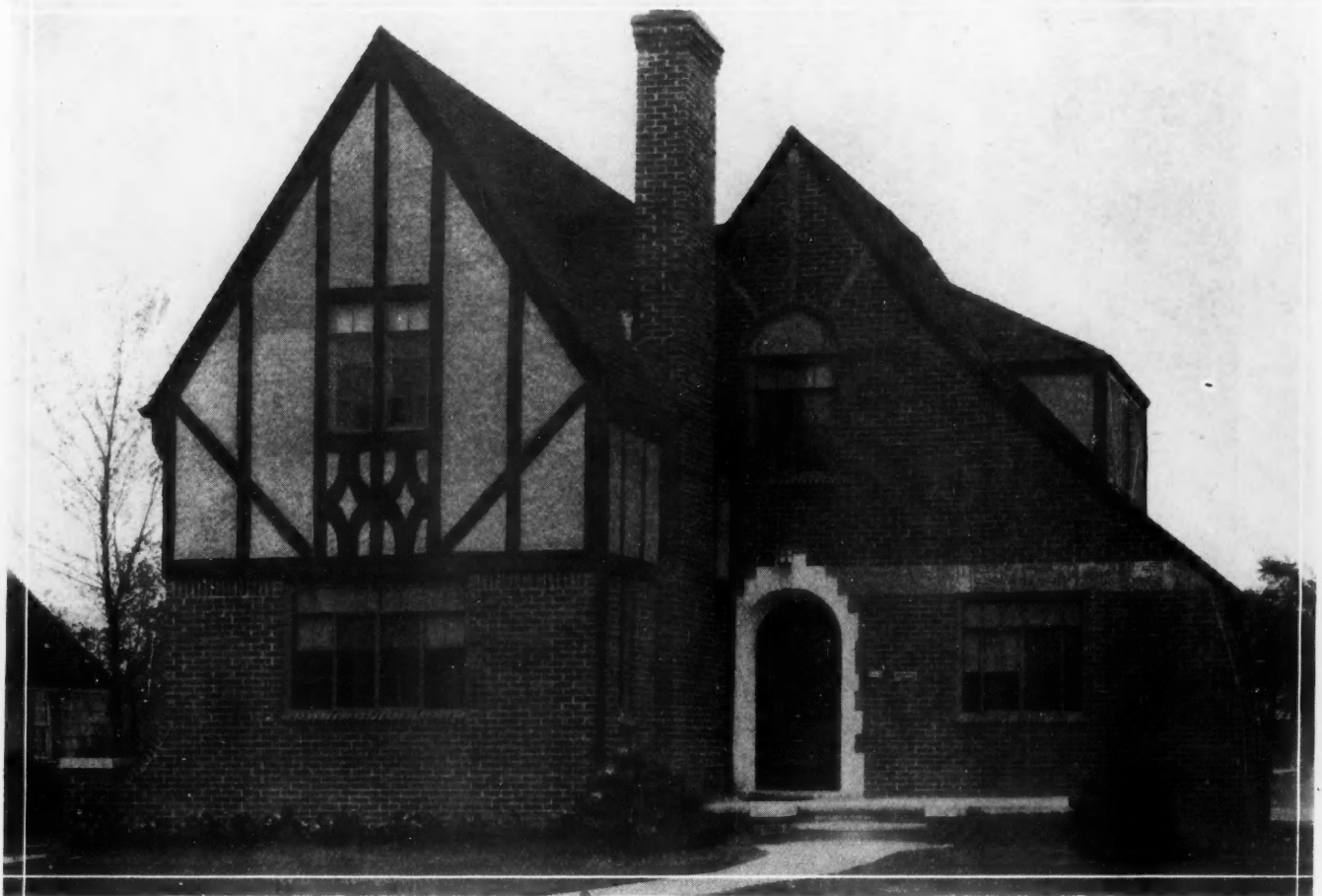
Frankly American

Home of H. A. G. Scherer at Summit,
New Jersey.

Duncanhunter, Architect.

Matteo Brothers
and Zaches & Kurrle,
Contractors.





MILLER-STORM CO., Inc., Architects and Builders

The Present Vogue for English Residential Architecture Is Based on Enduring Qualities Which Make It Something Far More Than a Passing Fad.

Sweeping Roof Lines

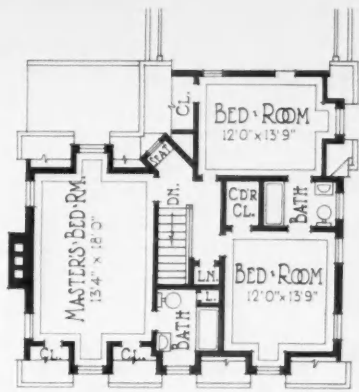
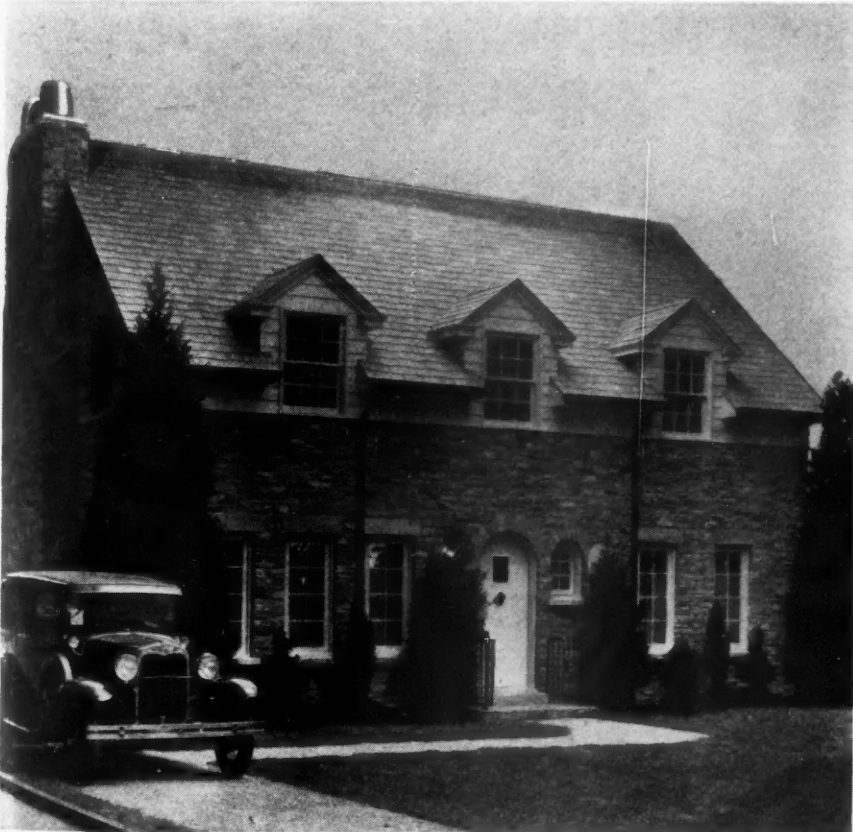




R. W. MILLER, Architect; INDIANAPOLIS HOME BUILDERS ASSOCIATION, Builders.

Indianapolis Model Home

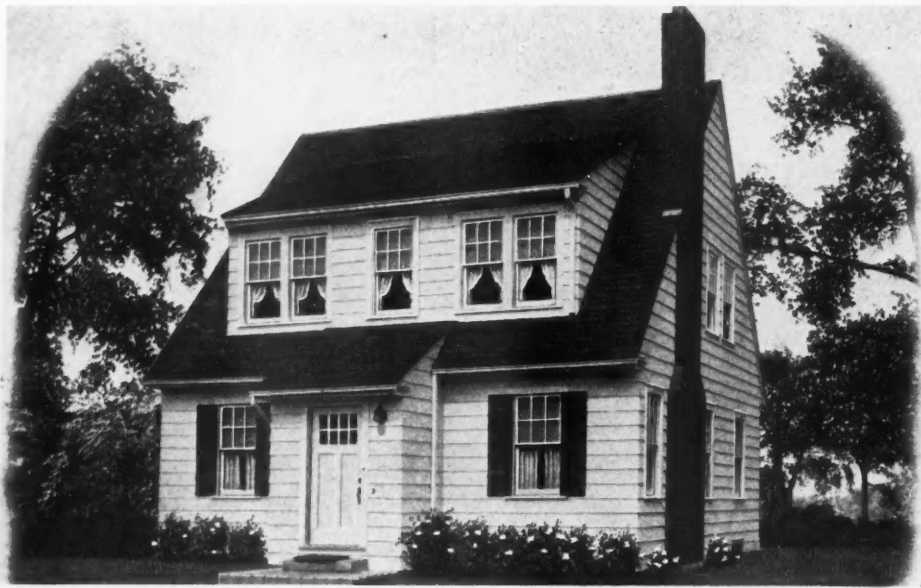
This Home Has Been Admired by Tens of Thousands.



◦ SECOND FLOOR PLAN ◦



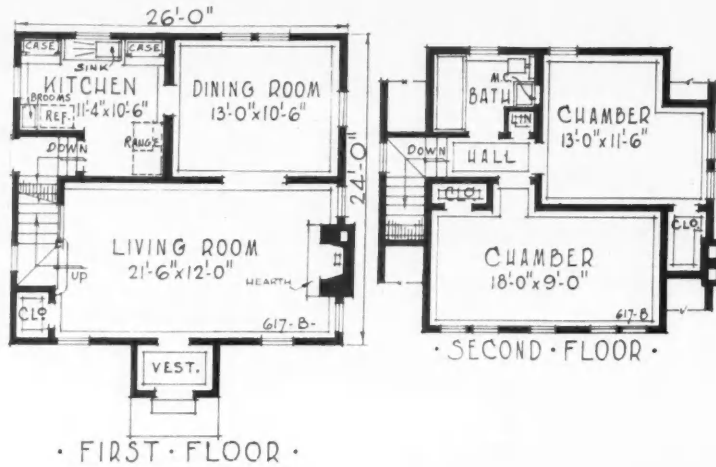
◦ FIRST FLOOR PLAN ◦

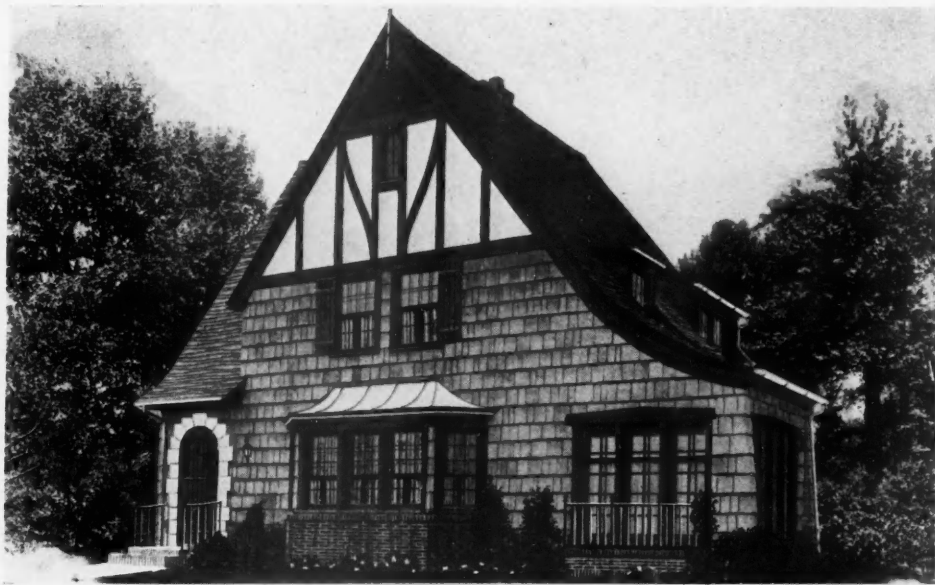


NATIONAL PLAN SERVICE Designs

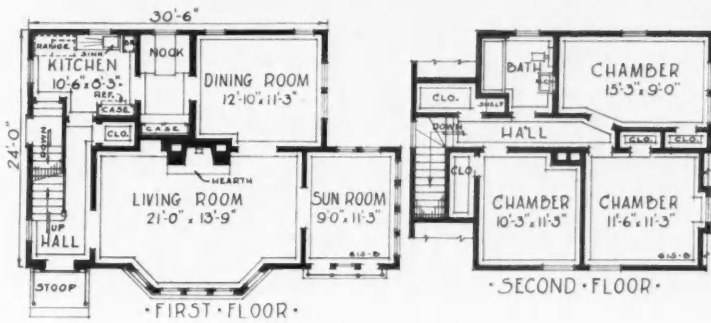
**Personality Plus.
Expense Minus**

These Little Homes Have a Message for Those Who Want the Best Yet Must Count the Construction Cost.



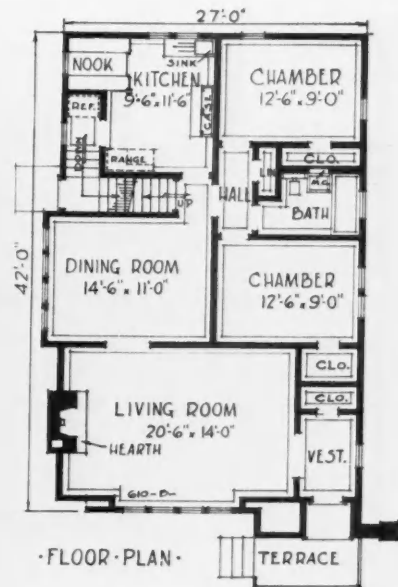
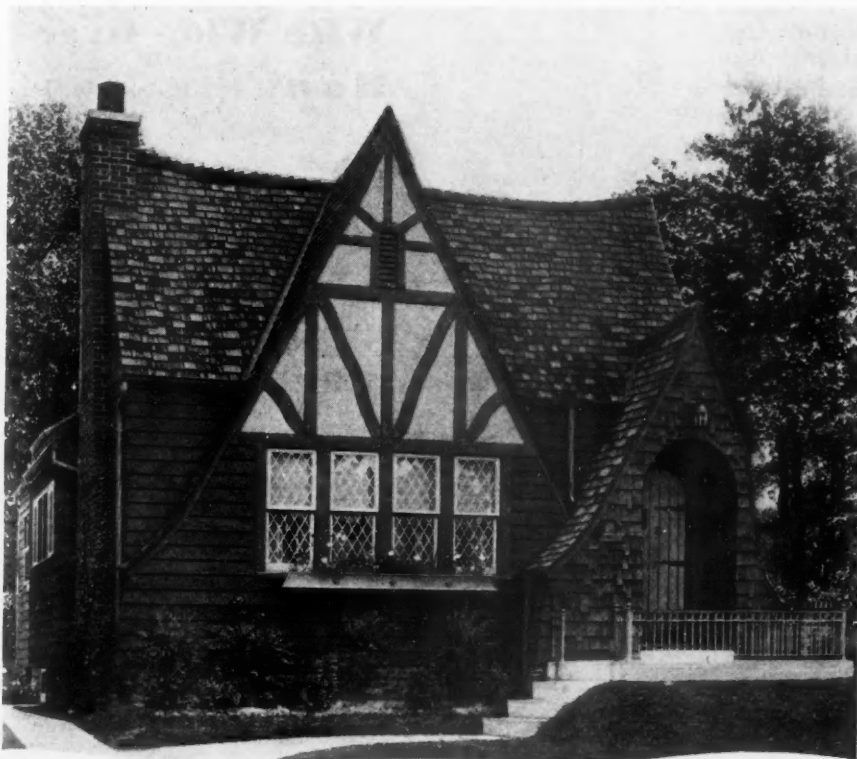


NATIONAL PLAN SERVICE Designs



**Individuality
without
Extravagance**

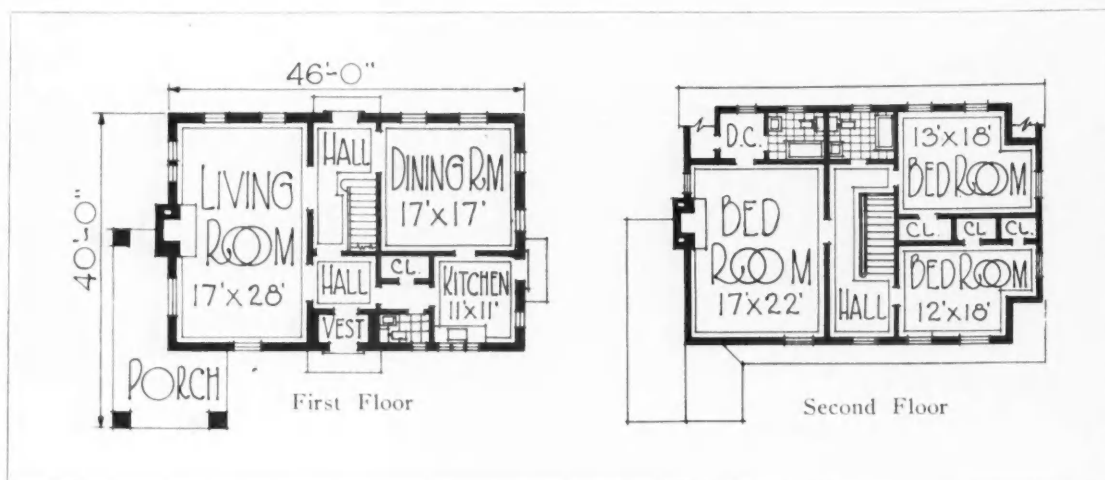
Richly Stained Shingles Combined with
Paneled Stucco Produce a Charming
Effect Here That Is Unusual.





Built on a plan that is basically Colonial the design of this house has been made unusual by the addition of the large covered porch at one corner of the living-room, a detail which is to be found on many houses showing English influence. Here the supporting posts of brick give the appearance of being solid enough to carry the heavy roof and superstructure over the porch. The walls of the house are of old brick, making an interesting wall of good color and texture.

With Wide Over- Hanging Roof



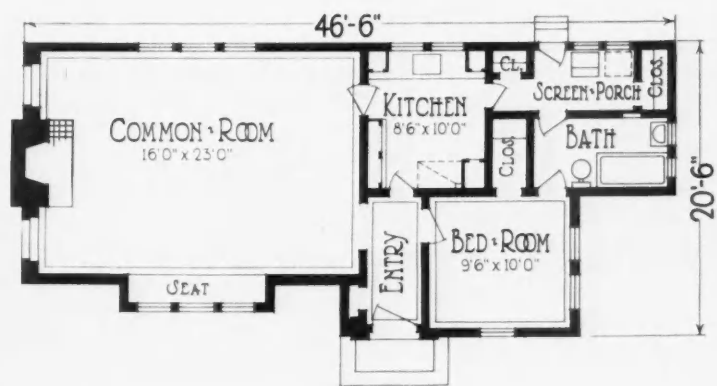


NEWTON AND MURRAY, Architects

A Studio Home in California



A Redwood Door Makes an Effective Entrance to the Studio Home of Stanley Williams at Hollywood, Especially When Combined with White Siding Painted White. An unusual treatment known locally as channeling has been given this siding.



Floor Plan



Our Front Cover Home

THIS home, which is also illustrated in colors on the front cover, was designed and built by Fred La Fave, of Elmhurst, Ill., who has established a reputation for the construction and sale of quality homes in the Chicago west suburban area. It is the type of better class small dwelling which commands the admiration of the prospective home owner, and the respect of the financing organizations.

The latter point is one of primary importance in this period when the financing of residential construction is the principal stumbling block in the path of building revival. A house of such character and quality, to be occupied by the owner, cannot fail to appeal, even to the most cold-blooded banker, as a first class investment.

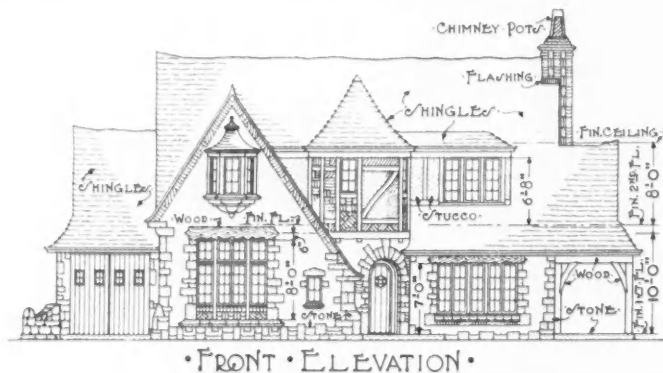
The design is taken from the picturesque cottages of Normandy, a style which is steadily gaining in favor among those who appreciate true excellence of architecture. The Normandy

cottage type has, of course, been skillfully adapted to more modern requirements and equipped to meet the most exacting demands of the American point-of-view, schooled in highly perfected labor saving equipment and conveniences.

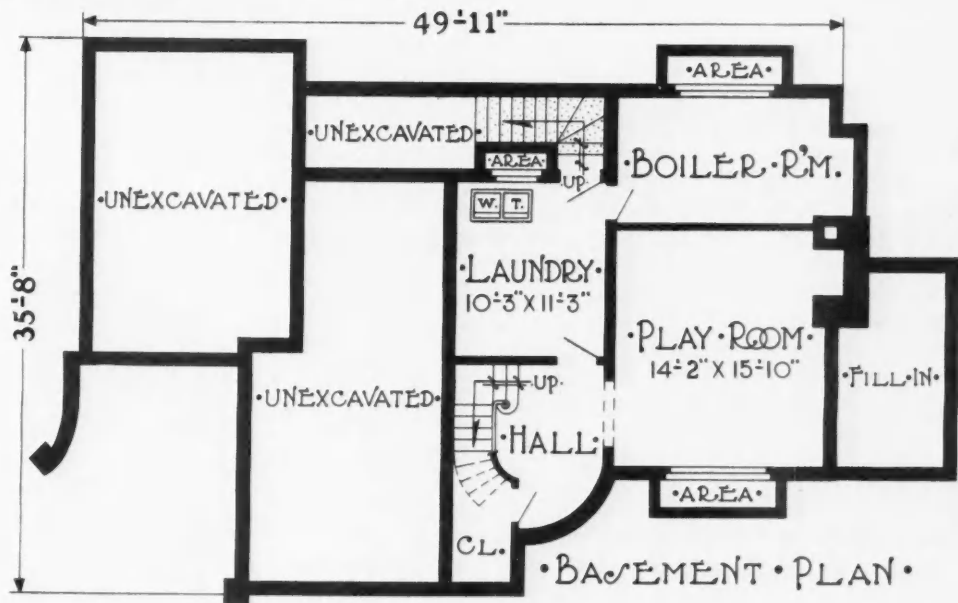
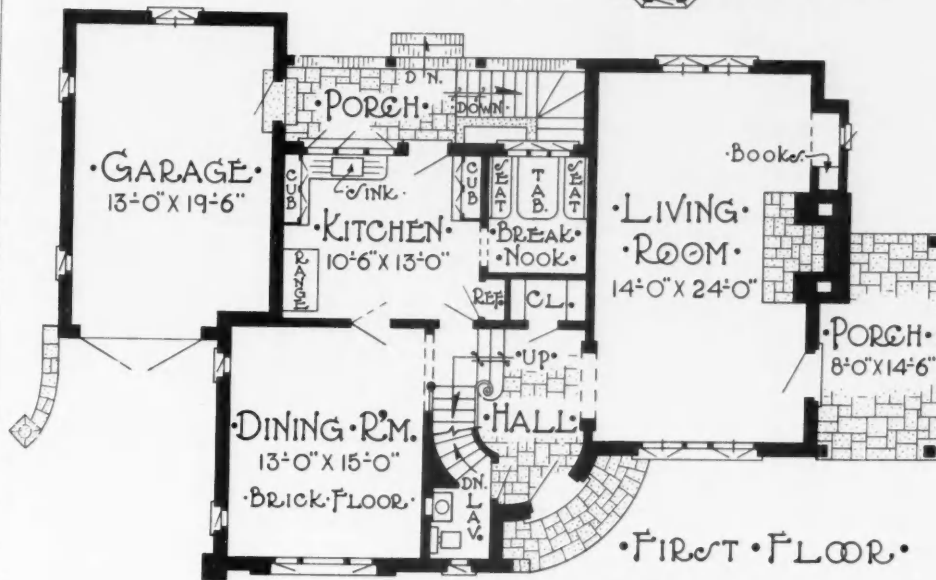
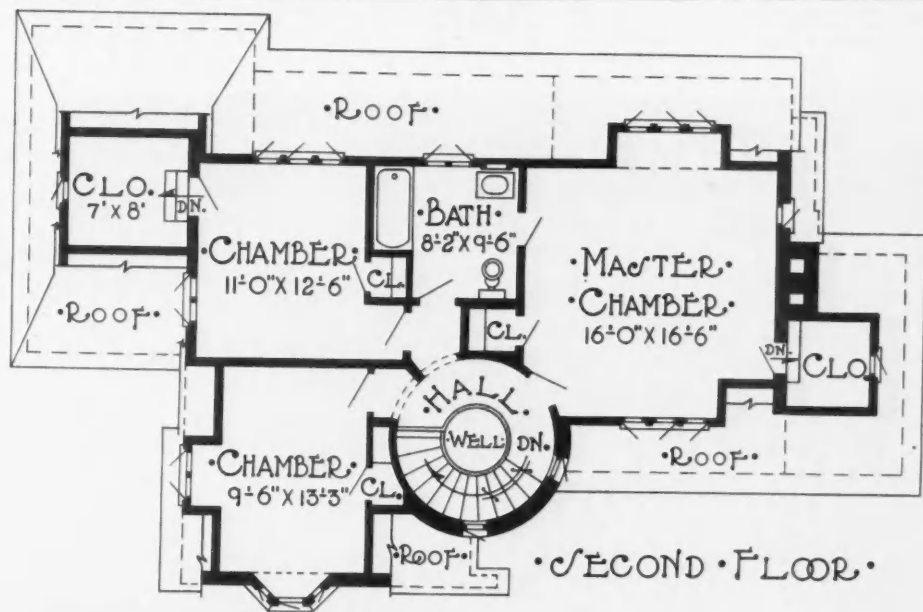
On the opposite page, the three floor plans of this house are reproduced and they tell, far better than can be done in words, the success with which the interior has been arranged, with every point harmonized even to the incorporation of an integral garage without violating the style which is essentially medieval.

Special attention might well be called to the effective, practical use of the circular tower, a characteristic of the Normandy style, which here provides for entrance,

hall and stairway. Another feature is the provision of a sheltered entrance to the garage, without the rather doubtful expedient of a portecochere, or a door directly from the house.

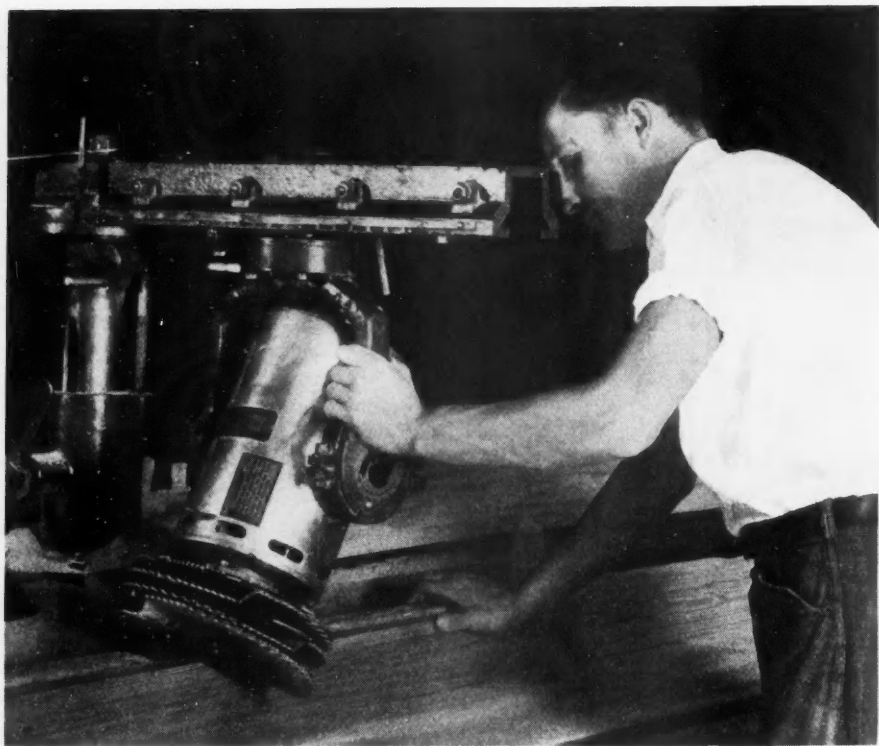


FRED LA FAVE
 Designer and Builder
 Elmhurst, Illinois.



Floor Plans of Normandy Cottage Illustrated in Colors on the Front Cover and by Photograph on Page Opposite; Fred La Fave, Elmhurst, Illinois, Designer and Builder.

Ready-Cut Methods Save—



One-Fifth Cost



Factory Production
of Homes Succeed-
ing in Houston, Texas

By

A. R. HAZARD

General Manager, City Ready-Cut
House Co., Houston



Cutting Rafters and Costs in the
Houston Homes Factory.

WITHIN the next fifteen years, ninety per cent of all houses will be cut-to-length or ready-cut houses. Home building is the one and only thing that has shown little or no progress in the past few decades or even centuries. Men are using the same old tools and the same obsolete methods of building houses today that were used by our forefathers who hauled their material with oxen.

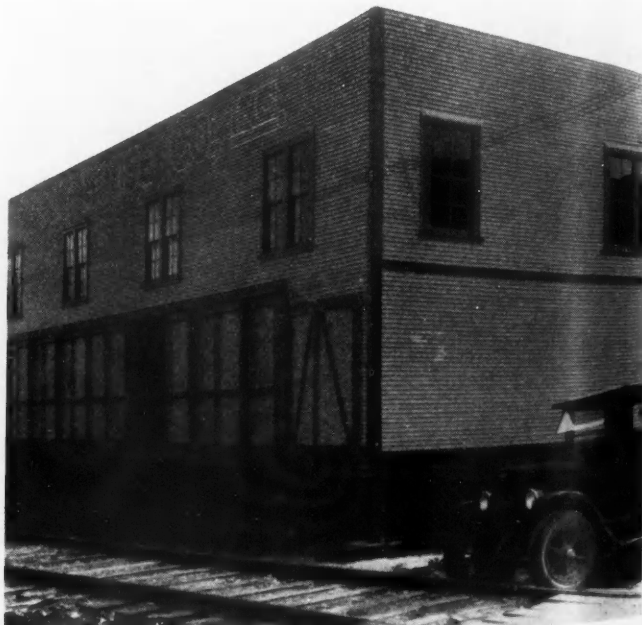
But builders are awakening to modern building methods. Today, the steel for all modern skyscrapers is fabricated in some plant instead of being cut by torches upon the job. Even the odds and ends are returned to be smelted and recast into salable material—and we of the City Ready-Cut House Company of Houston, Texas, are doing this same thing by having our lumber ready-cut before it goes to the construction job.

Our methods and our policies are entirely different from the original idea of ready-cut home building. Many people have the idea that ready-cut houses mean stereotype cheap catalog houses, but this is not our plan of operating. In the first place, we are not a mail order house . . . we cater to local building along well defined and systematic lines of business procedure. We build sectional or portable houses, but we do not feature this part of our business other than for oil field and other industrial building purposes. Our sectional house volume is only twenty-five per cent of our total volume, we place our emphasis on ready-cut homes of quality.

We surprise many prospects by showing them through our drafting and architectural department and explaining that as much originality or individuality can be expressed in the ready-cut house as in any other house.

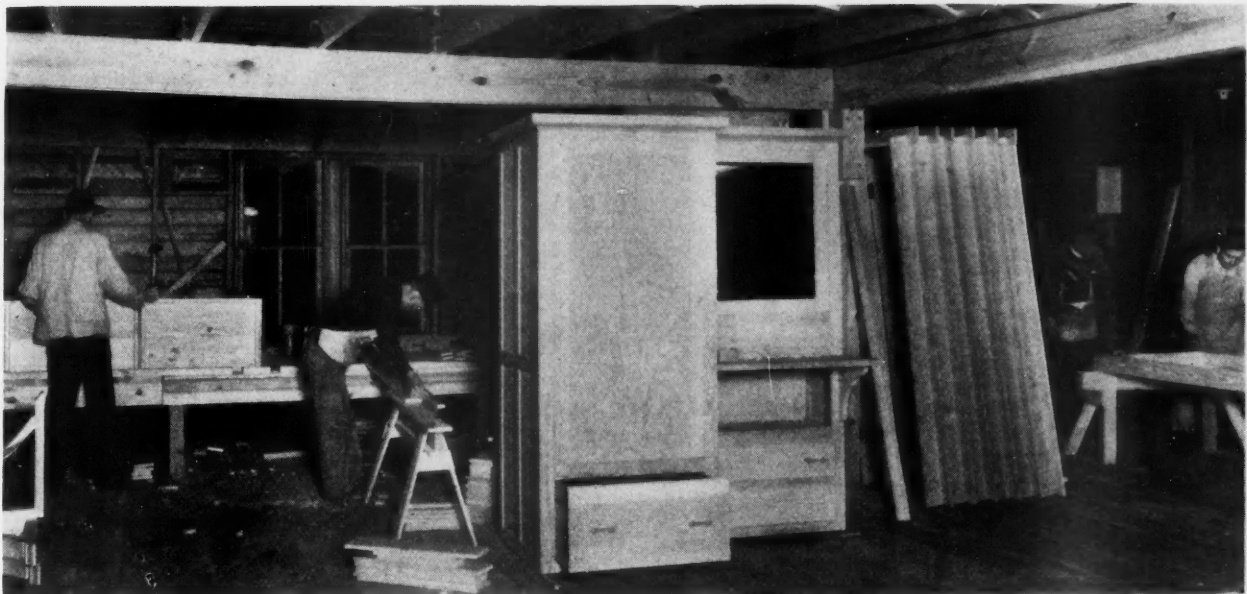
We not only have a free plan service, but our architect offers every cooperation in submitting plans and drawings to help create a home of individuality which is quite in contrast to the old type catalog house.

And contrary to the opinions of many builders, a ready-cut house is not a cheap house. We do not do business with the prospect that desires a house from cheap material. We sell only number one, creosoted sills; nothing cheaper than number two shiplap; B and better in all lumber; and a good line of builders' hardware. We are not catering to cheap house construction—we are selling some of the finest homes being built in the city to some of the most prominent people. For



Warehouse and Factory Cover Two Acres, a Busy Place
Getting Out All Materials for 300 Houses a Year.

ost And Two-Thirds Building Time



All Frames, Sectional Fixtures, Cabinets, etc., Are Built in the Mill. The regular building material leaves the mill cut and ready for nailing on the job.

instance, we just recently completed a \$65,000 house and have built numerous others that place them in the list of Houston's better homes.

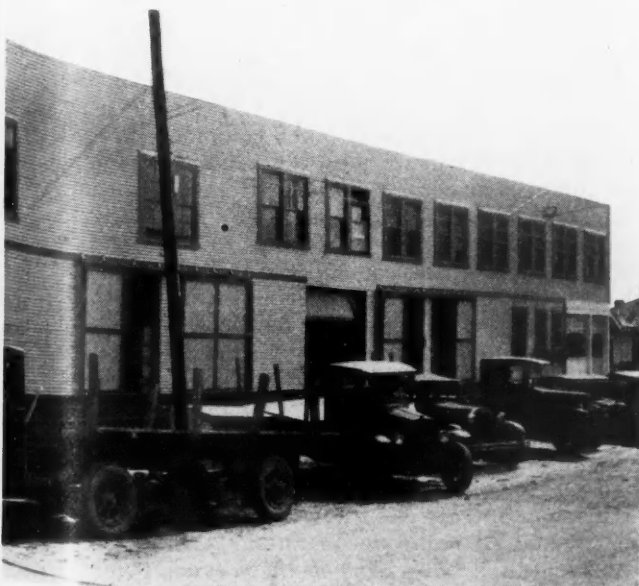
We are able to step up the desires of many prospects for quality building material by showing them that it costs just as much to cut and erect a house from cheap material as it does one from good material . . . in this way, many of our sales come through satisfied customers. We are able to close most sales through contact right in our offices; but many times, we first contact selected prospects right in their homes to sell them on the idea of owning their own home or building a better one than that they already have.

And in this day of fast living, prospects are first interested in knowing "How soon." Most prospects buy on the spur of the moment, or at least make a decision to investigate new home plans, frequently starting the prospective purchase a few days before actual possession of certain incoming money. And just as people of today demand delivery of a new model automobile instead of placing an order for future delivery, they want a home to be delivered in minimum time. We win a lot of prospects by showing them that an order for a house received in our mill one day is cut and on the building site the following day.

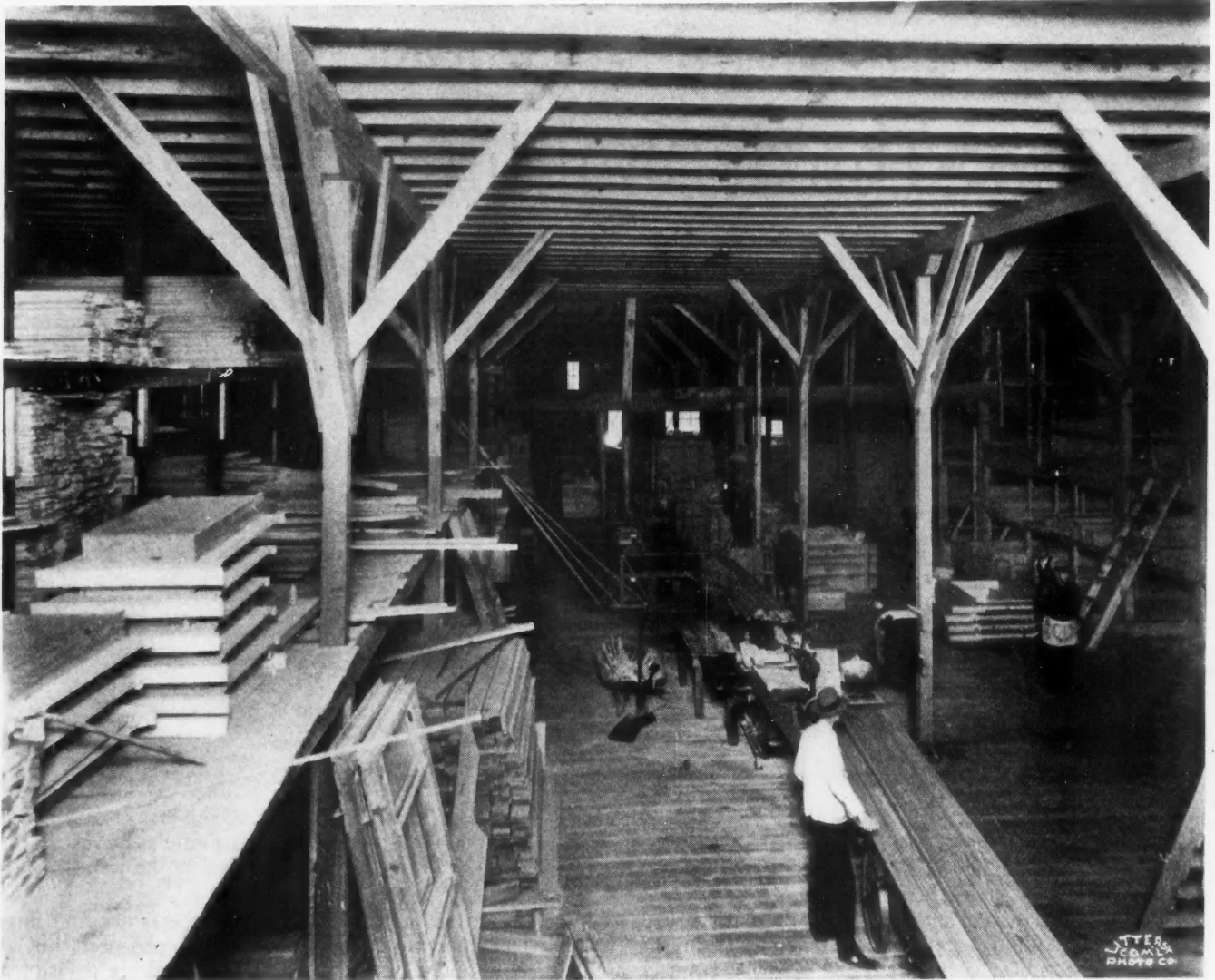
Every step of our business operation is carried out along a well defined plan. Our salesmen will bring a prospect into the office after making first contact. This prospect is then interviewed by our specialist who knows the ready-cut house methods. As the prospect tells roughly what he desires in the way of a house, the specialist draws a rough sketch of what the prospect has in mind.

The prospect is then informed by the specialist that plans and specifications for the proposed house will be prepared. The rough sketch is taken to our architectural department where elevations and floor plans are drawn. The elevations and floor plans are then routed directly to our accounting department where a final price is made. The prospect is then notified of price and requested to okay it.

If the prospect okeys the plans and specifications and the price, the job is routed directly to the finance depart-



In Two Years the Business of the City Ready-Cut House Company Has Grown Until Now It Employs 60 People.



An Interior View of the City Ready-Cut House Co. Mill, Houston, Texas. The first workman to the front of the picture is feeding a ripping machine from a lumber two-wheel truck used for conveying material. The second machine down the line is a planing and moulding machine.

ment. This department looks up the prospect's rating; then is ready to go into financial details. Before the job is started, the house has been financed, the cash is in hand or the money is in escrow.

We do not finance our own paper, but we have a connection with a finance company whereby all installment paper is handled, the collections being made by us. Any prospect living within the city limits who has a good credit rating and who owns a clear and desirable lot may buy material from us with no down payment for double the value of the lot. For instance, if the prospect owns a clear lot valued at \$1,500, we will erect a \$3,000 house on this lot with no down payment and with installment notes of \$12.50 a month per \$1,000 principal.

All material sold outside of the city limits is for cash, twenty-five per cent down with the okeyed order and the balance with bill-of-lading attached at delivery. We do not sell apartment houses on installments; these jobs are usually speculative. We sell them for cash only and will not erect the job in any instance.

After the financing has been done and our credit manager passes the order, he writes an order to the draftsman to give details of the house; the draftsman prepares these and sends the house details to the superintendent of the mill who then prepares a cutting list. This list returns to the office where five copies are made. One copy is for our future file, one for the mill super-

intendent, one for the line foreman, one for the construction man and another for the shipping clerk. The order is then ready to be in the mill for cutting. The order is routed through the different departments to cut out immediately all material and place in a stall to be delivered as needed. As the order for cutting is received in the mill, an order is immediately given to the sash department so all material will be ready at the same time.

A number of our saws and other equipment are all purpose machines for many jobs, other items of equipment are for specialized work. Our rafters are machine sawed and cut. It costs us but one man's time for one hour at fifty cents an hour to cut the rafters for the average five or six room house. And with an average general operating expense and overhead, this job costs us an additional twenty cents, or a total cost of seventy cents for cutting rafters as compared to sixteen dollars as would be the average cost of cutting them on the job with one dollar an hour carpenters. Our rafters are cut, tied and braced right in the mill all ready to be set up and nailed in place.

Instead of high priced men boring holes, etc., we use a single machine to bore the three holes for pulleys, cut the notches, and all with one operation. We operate a boring machine that bores sixteen holes every two seconds. Our shiplap and siding is all cut and squared

perfectly in the mill by a fifty cents an hour man operating a power saw, at a fraction of the cost of a man on the job with a hand saw. Carpenters usually purchase long lengths—buying sixteen foot two-by-fours for studs, so one sawing through the middle will serve for two. They pay the long-length premium; we buy the eight foot lengths and profit from the differential in price.

Our sills are all creosoted. We have a dipping vat right in the mill; sills are left in this vat for four hours; then they are dipped again after being cut so as to take care of the joints.

In our portable houses, the flooring is built in sections, placed on a table and bucked together at every four inches to insure tight joints. All material is handled in the mill on conveyors, skids and lifts.

Our waste is less than eleven per cent; the average waste on the common type job is near thirty-three and one-third per cent. Our short lengths and odds and ends fit perfectly into some place for our sectional buildings, giving these buildings the same high quality of material, but making use of lumber that is ordinarily wasted. Even our saw dust is conveyed by blowers and all scraps are in boxes over the mill. The sawdust and scraps are sold to laundries and other industrial plants that use kindling for firing boilers.

Even plasterboard is cut to order right in the mill. It is placed on skids as it is taken from the machine, a hydraulic lift truck is placed under the skid and the skid is conveyed to the stall containing all material for that particular job. Most material is loaded from the stalls to the trucks that back up to the dock at loading level. Plasterboard and occasionally other material is left right on the skid, trucked on the motor truck and carried to the job this way to cut the time in handling.

We find that our power saws and equipment enable us to cut as much shiplap or similar material in one hour as six men will cut in a day on the average construction job. For instance, we cut the shiplap for an average five-room house for a total cost of \$5.00, this same work by carpenters on the job would be approximately \$100. The average house job is completely cut in our mill within two days.

When our order is placed in the mill, all our sub-contracting departments are notified to be ready; the painters are notified, the roofers are notified, etc. With an order placed in the mill one morning, the shipping clerk gets his list and sends out the foundations and all cement, etc., in time for work the following morning. On this day, the foundation is run and completed, all cement work such as sidewalks, drive-ways, runners, etc., are completed; then actual construction of the house begins the second day following the placing of the order in the mill.

The shipping clerk is kept informed of job progress, he ships out material to comply with the plans. The house is built right in the mill, so to speak, the material going out on schedule as needed to prevent material being kept on the ground for a long period of time. The foreman of construction notifies the shipping clerk twenty-four hours ahead of time as to what will be needed, this gives ample time to get all material on the ground and to properly route out the trucks to take care of all jobs under way.

We are our own contractors in every respect. We use our own licensed plumbers and electricians; we



Wide Latitude and Individuality Prevail in the Ready-Cut Homes Built by the City Ready-Cut House Company, Houston, as These Examples Show.

maintain our own painting crew and roofing crew. Every job is a turn-key job. These sub-contractors are kept notified twenty-four hours ahead of time as to progress so they may keep step with the job progress. As soon as the outside walls of a brick veneer house are started or twenty-four hours before the wood framing is complete, the brick workers are notified so they will be on the job the following morning. Twenty-four hours before the inside walls are completed, the canvassing crew is notified so they may get in to start work. All work is completed at approximately the same time.

Twenty-four hours before the job is complete, the general contractor calls our specialist for final inspection. The specialist makes the inspection and either passes the house or details what is needed to bring the job up to plans and specifications. When the job is then complete, the specialist makes another personal inspection where he either okeys the job or turns it back for further completion. Any house job of ours is turned over to the purchaser twenty-one days after the order has been given to the mill.

We find many advantages in doing all our own contracting. We buy all material even to nails in carload lots, our ready-cut methods enable us to use short lengths in many instances at a saving in the initial

IS THIS THE ANSWER?

Housing Costs Must Come Down. More House Must Be Produced by Every Man-Hour of Labor. Will Factory Cutting Reduce Costs for You? Who Has a Better Plan?

price. Our policy of furnishing everything from plans to paint has weight with prospective owners; many of them will buy from us as they know where to place responsibility and know that we are a fixed and responsible firm that must stand behind every piece of merchandise and every step in construction instead of being a general contractor with his many subcontractors that may be in one city for one month and somewhere else next month.

Mechanics and workmen have raised the contention of lower wages paid by us as ready-cut builders; and some of the outsiders contend that we cut down the man power needed on the construction jobs . . . To the latter contention, we plead guilty, to the former, no. Our methods do reduce man power just as all modern industries are introducing labor saving equipment to reduce cost so they may compete with other industries and other commodities. We know that building costs have been out of balance with some other commodities. When we reduce the cost of construction, we increase the potential market for homes and place good homes within the reach of all good men.

And as for wages, our policies enable us to keep our men employed seven and eight hours a day, six days a week with no layoffs as is common in the general building trades. If work in the mill becomes a bit slack, no one is cut from the payroll; mill workmen are put on a construction crew for a few days where they get the practical experience and a better insight of home construction.

We realize our methods are radically different from those employed by the average home builder or lumber merchant; but we are in this business for a profit as well as to render a service. The public will not continue to tolerate the obsolete and inefficient methods now employed by most builders. We have a saving of cost and a saving of time both in our favor as ready-cut

house builders. For instance, we cut out the average house with all mill work, etc., in our mill for a total cost varying from \$65 to \$100. Figures of comparison prove to us that this cost is but twenty per cent of the cost generally had for this same work with the old methods. Our cost of erecting the building is only fifty per cent that of the average lumber yard doing its own contracting; our time in completing a house is but one-third the time ordinarily used.

Offsetting our savings is an increased general overhead. For instance, our office force is naturally larger than the average lumber company; we employ an expert draftsman, an architect specially trained for ready-cut and portable work, a building specialist specially trained in this field; and in addition, we have the first cost and upkeep of machinery and equipment. Our general operating expense is therefore twenty per cent greater than that of the ordinary efficiently operated lumber firm that does its own contracting. But in contrast is the fact that we are able to complete work in one-third the usual time; and we are, in spite of our increased operating overhead, able to perfect a saving in a completed turn-key house job that is eighteen to twenty per cent less than that for a similar house built under ordinary methods.

As to whether we are making success or not in the ready-cut methods of home building, again we shall let the records answer the question. In June, 1929, we were organized and capitalized for \$60,000. Our business soon enabled us to increase this capital to \$80,000; and now, we are preparing to make application to state authorities to increase this capital to \$200,000, an expansion program made possible by our growth. For 1929, we sold approximately one hundred brick veneer houses and many frame buildings; for 1930, our second year in business, we have completed upward of two hundred ready cut houses in addition to portable buildings.

Planning an Office Building to Pay

Analysis of Small City Conditions Which Make for the Financial Success or Failure of a Tall Building

By FREDERICK RHYNE, Appraiser

MANY a growing small city presents an opportunity today for the planning, promoting and building of a modern office building. What are the basic problems in making such a venture a financial success?

Let us assume that the site for such a building has been selected, and that it has been deemed suitable. The question then arises: what design and how tall shall the building be? Shall we erect one twenty stories merely because the city thirty miles away has one of nineteen stories, or shall we spend \$1,500,000 because we have been able to raise that amount. Neither of these is of sufficient weight to warrant much consideration in the decision.

The height of a building should be that at which the maximum amount of return upon the investment is reached.

There is no set formula which can be applied to every building operation to determine the proper height and design. Almost any generality could be termed ridiculous by one builder even though it might apply to another. One prominent contractor in Kansas stated, "I believe the cost of each square foot of rentable area

should be fifteen times the amount of square foot return." In making the statement, however, he was so certain that it would be disputed that he did not wish to be quoted on it.

It is generally accepted that calculations must be based on the cost of square feet of rentable area. Any other basis is positively a mistake. This may be modified only by the change of square feet to units of space as set off by permanent partitions.

If, then, we have \$1,000,000 to invest in the actual construction of our small town skyscraper, the logical design is that one which gives us the most square feet of rentable area at the highest rate per square foot.

The larger cities are forced, by the existence of strict building codes, to face the problem of set-backs. In some cases, notably the new Walter P. Salmon building at 500 Fifth Avenue, the height and the design are practically dictated by the zoning demands.

If there had been no zoning laws, the building would never have been built to such a height, 58 stories; the same amount of rentable space could have been produced in almost two-thirds the height. The builders were aiming at a certain amount of rentable space to



Bank of
Kalamazoo
Building;
Leading a
Growing
Community.

Weary &
Alford,
of Chicago,
Architects.

O. F. Miller
Co.,
of Kalamazoo,
Contractor.

produce a certain income, and they found, that even though it cost more to add additional stories to the structure, they were forced to do so because of the return. In the subsequent outline of rising and diminishing costs, we shall find that it is more expensive to add 1,000 square feet of space at a height of 500 feet than it is to add 1,500 square feet at a height of only 100 feet.

The additional cost is somewhat offset by the higher rents which can be obtained in the upper stories, but the increase is not sufficient to warrant additional stories when they are not needed to boost the total return.

The determination of height, based on the law of diminishing returns, has been the subject of various studies by engineers during the past decade. One of

the most scientific and successful was that carried on in connection with the Bank of Manhattan Building by the firm of Starrett Brothers & Eken, builders. They were able to establish just what component factors of construction increased in cost with each additional story and also those which decreased. For instance, it is interesting to note that brickwork in a 30-story building costs twice as much per square foot of rentable area as does the brickwork in an 8-story building. On the other hand, excavations and foundations drop proportionately as the height increases.

On one of these pages is a table showing the relative increases in cost per square foot of net rentable area for buildings of eight, twelve, fifteen and twenty-two stories. The type of materials used, of course, will



Jackson (Miss.) Tower Building Is Richly Finished in Marble and Bronze in the Best Modern Style.

make a difference in other buildings; but the figures presented herewith indicate one of the most important factors with which the promoter has to deal in determining over how many stories he can spread the capital available. Certain factors are, of necessity, omitted.

It will be seen from the addition of costs that the cost per square foot of rentable area is lowest at the 12 story height. If a twelve story building would produce sufficient return upon the capital invested, it would be ideal for our site, since the law of diminishing returns takes effect at that point. In setting an altitude limit, it should be borne in mind that the office space at the top of the building produces more income, and the rental schedule should be made up accordingly.

It is interesting to note the reasons for the rise and fall of unit costs, as outlined on the accompanying chart. One of the largest single items is structural steel, which shows a gradual increase with each additional story. The reasons are perhaps obvious. In the first place, an increase in weight of the upright columns and footings is required as more floors are added; erection costs are greater in the upper stories; and wind bracing costs are increased.

However, the rise in cost is proportionately moderate, and were it not so, skyscraper construction would be impossible, because the cost of supporting walls and the space required for them would be uneconomical.

Brickwork costs increase chiefly because the lower floors are often monopolized by stonework and windows. Besides, the expense of transportation of both material and men to the upper stories increases, and the efficiency of laborers at high levels on exterior scaffolds is reduced.

Elevator costs increase in about the same ratio as the cost of the building itself, which, of course, is just a coincidence. It is an interesting one, because it was the elevator which made possible the skyscraper. Another serious consideration with regard to elevators is the growing amount of space they require in large buildings. Perhaps this factor will be reduced when the double-deck elevators, about which we hear so much, are placed in service. It is the presence of elevators which makes the tall building on a narrow plot uneconomical, because of the vast amount of space required for them.

Interior partitions and plumbing costs accelerate with the increasing height, chiefly because of the cost of

BUILDING COST PER SQUARE FOOT OF RENTABLE AREA—S. W. STRAUS SURVEY

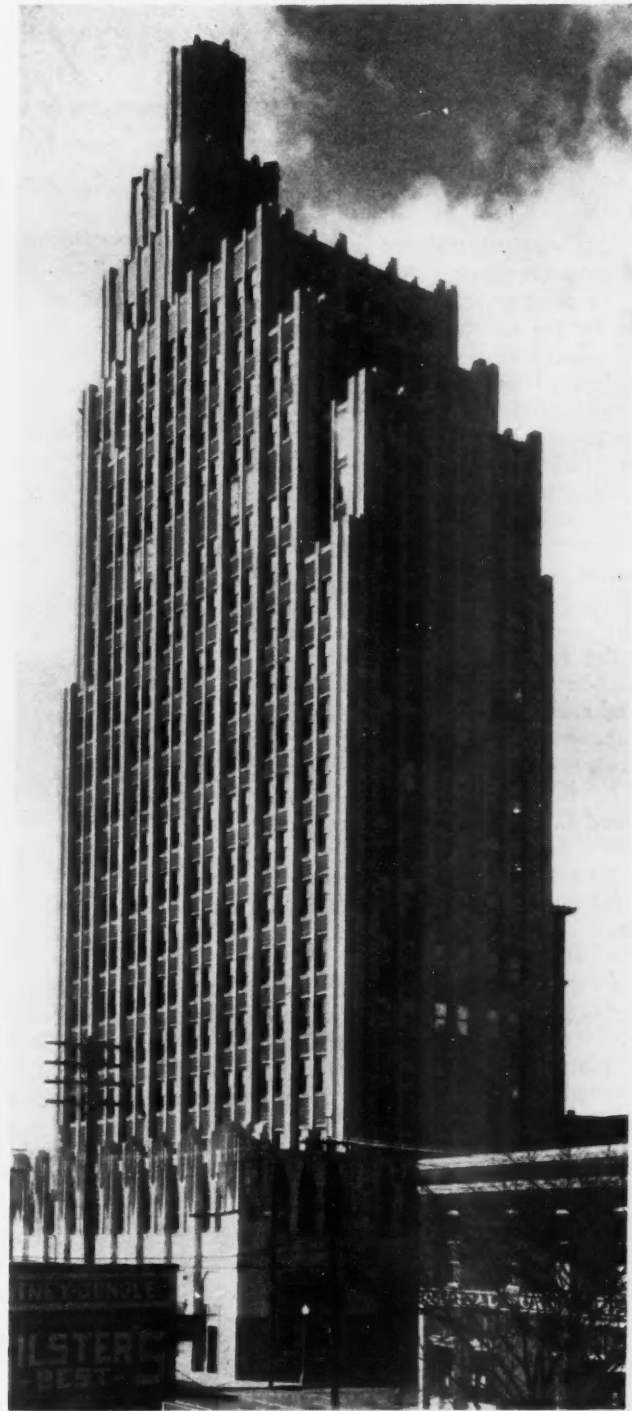
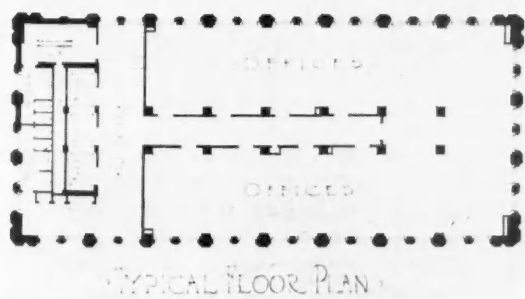
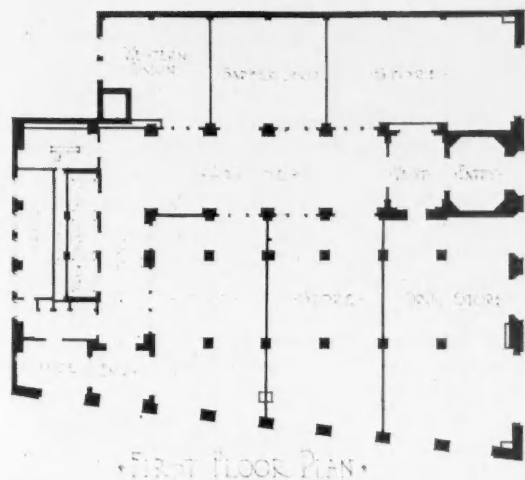
UNIT FACTORS	STORIES			
	8	12	15	22
Excavations and Foundations	\$0.74	\$0.63	\$0.48	\$0.40
Structural Steel	0.72	0.76	0.80	0.87
Concrete Floors	0.61	0.59	0.58	0.575
Brickwork	0.18	0.21	0.25	0.325
Interior Partitions (Permanent)	0.225	0.23	0.25	0.26
Exterior Finish	0.40	0.46	0.50	0.515
Windows and Glazing	0.19	0.185	0.18	0.195
Roofing	0.06	0.058	0.57	0.50
Interior Finish and Trim	1.82	1.77	1.75	1.785
Elevators	0.615	0.63	0.65	0.69
Heating and Ventilating	0.49	0.42	0.36	0.33
Plumbing	0.435	0.47	0.50	0.53
Electric Wiring, etc.	0.27	0.29	0.305	0.32

installation at higher altitudes. In the latter, the installation of stand-pipes and tanks at intervals of approximately 160 feet makes the curve somewhat irregular.

Windows and glazing are higher per square foot of rentable area in the small building because so much of the lower floor areas is taken up with store fronts and other plate glass requirements. After this factor has been spread out over twenty or thirty floors, the speed of increase is reduced, and the cost indicator gradually evens out.

Such items as roofing decrease in cost with the increase in the height. This almost explains itself. The narrowing tower of the building and the greater spread of the roof cost cut down the per square foot cost with each floor.

We have discussed these things merely to emphasize the fact that each additional floor is costly in itself, and that the addition of more floors merely for the sake of impressive appearance is a dangerous thing. If the value of the land becomes overburdened by the value of the



The Jackson Tower Building; Claude H. Lindsey, of Jackson, Miss., Architect; O. M. Gwin Construction Co., of New Orleans, Builder.

building, the economic principles are being violated, and the chances for successful operation are reduced.

It should also be remembered that every additional floor adds to the expense of operating the building. Power costs, service, water, etc., must be paid for. For instance, service alone increases in cost at a rate of four per cent each floor.

The building promoter who does not attempt to overbuild his land, and who aims for a reasonable percentage of return on his investment has a splendid opportunity in the small city skyscraper. To be successful, he must figure on the basis of rentable area in regard to both the cost and the income. If he does this, following the procedure that has been outlined, he is half-way to his goal.

More Money to Build Homes

Finance Company Launched by Associated Leaders Will Make Low Cost, Long Term Financing of Homes Available on Nation-Wide Scale

THE organization of a corporation to finance home building on a large scale, and on reasonable terms to the owner, was assured by action of the Associated Leaders of Lumber and Fuel Dealers, at their annual meeting in Chicago, December 2 to 4, 1930. This financing plan, developed by Ames, Emerich & Co., Investment Bankers, in collaboration with the association, was presented to the convention by Arthur A. Hood, president of the Associated Leaders.

In order to assure the formation of the finance corporation, it was necessary that at least forty dealers should subscribe to stock in the mortgage corporation before the convention adjourned. Within a short time forty-seven dealers had turned in their subscriptions on the floor. Since then additional subscriptions have been coming in, from members not represented at the meeting. More than a million and a quarter dollars in stock has already been subscribed.

The plan provides that the dealers' stock subscriptions must be matched, dollar for dollar, by stock subscriptions from manufacturers of building materials. Before the plan was presented to the meeting Mr. Hood had obtained ample assurance from manufacturers that their half would be subscribed if the plan was adopted by the dealers. Actual commitments have already been made by three manufacturers which, alone, are nearly sufficient to match those made by the dealers. There will be ample additional subscription to meet the requirement when the plan is presented to the manufacturers.

Organization is proceeding and financing funds will be available to subscribing dealers by March or April.

A booklet completely outlining the new finance plan was handed to Associated Leaders attending the meeting, so that they might thoroughly inform themselves before being called upon to subscribe for stock. This booklet states that there were three major difficulties to be surmounted in developing a national finance plan—

1. To arrive at a financing charge and commission that would not burden the consumer with excessive costs and would still make a profit for the mortgage company.
2. To arrive at an investment on the retailer's part in a mortgage company which would not be economically burdensome compared to the volume of mortgage money made available to him.
3. To meet the retailer's objection to large contingent liability in guaranteeing mortgages.

The plan finally developed meets these difficulties in the following manner:

1. It has been possible to reduce the interest and financing costs which the consumer pays on both first and second mortgage financing so they amount to only 7½ per cent simple interest and still make a profit in the mortgage company. (The mortgage



Arthur A. Hood

notes, both first and second, will carry 6 per cent interest and the other 1½ per cent will be built into the cost and selling price of the house under the same plan that the mail order houses use.) After the third or fourth year of operation of the mortgage company, it will be possible to reduce the interest rates to the consumer and still make a satisfactory profit.

2. The plan provides that the dealer will receive 13⅓ dollars in first and second mortgage accommodation for every dollar he invests in the mortgage company.
3. It will be possible to limit the dealer's liability to 50 per cent. of the second mortgage.

The new finance company will be operated for the benefit of, and will

be controlled by, the quality producers and distributors in the building industry. When it is deemed expedient by these leaders, mortgage charges to the consumer may be reduced, thus insuring the ability of the industry-owned company continuously to meet and beat competition in mortgage financing.

The stated purposes in organizing this financing company were: 1. To meet the competitive problems arising from the mail order merchandising of complete homes to the consumer on the basis of a 15-year pay-off plan; 2. To provide quality homes through the retail lumber dealer with adequate safeguards and guarantees in matters of design, workmanship, materials, finance and site economics, at the lowest reasonable cost; 3. To provide a continuous flow of funds for first and second mortgages up to 75 per cent of the value of a consumer's property, payable in equal monthly installments over a five to fifteen year period; 4. To provide short term, monthly payment financing for modernizing; 5. To co-ordinate the merchandising efforts of leading producers and distributors in the building industry around a trade-marked quality home and a certified construction program.

Two plans for financing have been worked out, a five-year plan and a fifteen-year plan. The operation of these two plans is outlined in the boxes appearing on the next page. To the participating dealers these plans offer the following benefits:

1. Immediate ability to match mail order financing with a better deal for the public.
2. Immediate ability to offer financing not available to local competition.
3. Increased volume through making homes easier to buy and through taking competitor's business.
4. Dominant position in local building industry giving strong leverage on contractor customers.
5. Every financed home a cash transaction—thus reducing accounts receivable.
6. Control of every job from consumer inquiry to

completion—protection against cut-throat dealers, if any.

7. Exclusive merchandising rights and advantages.
8. Reduced liability on mortgages.
9. Actual extra profits on financing.
10. Dealer - manufacturer co-operative merchandising actually achieved—effecting great savings in the cost of distribution of quality building materials.

In order to benefit by these advantages, dealers must meet certain qualifications. They must have satisfactory credit standing; they must adopt a merchandising policy of controlled marketing of the complete home to the consumer; and must have the equipment and personnel to pursue such a policy. In addition they must subscribe a minimum of \$3,000 per year for three years to the common stock of the mortgage company.

Manufacturers who qualify to participate in the finance company will be required to have a wide distribution of identified quality products, properly merchandised, as well as to purchase a pro-rata amount of preferred stock in the mortgage company.

The selected dealers and manufacturers of quality building materials will participate in the mortgage company on the basis of stock ownership. The capital structure of the mortgage company will be as follows:

CAPITAL STRUCTURE

Stock Issues

- \$2,500,000 6% Cumulative Preferred (Manufacturers' Stock)
- \$2,500,000 Common (Retailers' Stock)
- Subscriptions Payable Annually over a period of 3 years.
- Warrants for Bank Group to purchase Common at Founders' Purchase Price.
- Minimum Dealer subscription towns 5,000 to 15,000—\$3000 per year for 3 years.
- Minimum Dealer subscription towns 15,000 up—\$5000 per year for 3 years.
- Minimum Manufacturer subscription \$10,000 per year for 3 years.

Bond Issues

- \$28,333,333 Gold Collateral Trust Bonds to be Authorized.
- Provides 33-1/3 millions for 75% mortgages divided as follows—
 - 6-2/3 million for 15% Seconds
 - 26-2/3 million for 60% Firsts

It is stated that, allowing for liberal operating costs, the mortgage company, over a five-year period, will earn 20 per cent per year on the common stock in addition to the 6 per cent to be paid on the preferred stock. These earnings provide that participating dealers will receive, in addition to 13-1/3 dollars of mortgage facilities for every dollar invested in common stock of the mortgage company, cash dividends as voted by the directors.

From the fourth year on, they will receive in mortgage facilities annually, 13-1/3 times their original annual subscription without additional investment on their part.

It is instantly apparent that the purchase of common stock by the dealers is an excellent investment, entirely aside from the advantages to be gained from the mortgage facilities placed at their disposal.

Ample provision is made for the protection of the mortgage company funds. Appraisals will all be triple checked. The design, specifications, and site economics of the proposed home will be checked before the mortgage commitment is made. Property owners will be compelled to have a minimum of 25 per cent equity.

BASIS FOR FINANCING COMPLETED OWNER-OCCUPIED HOMES UNDER THE 15-YEAR PLAN

Selling Price of House and Lot Including Financing Costs	\$10,000.00	
Consumer's equity		\$2,500.00
Mortgages		
First—Amount	\$6,000.00	
Discount	\$600.00	
Dealer receives cash		5,400.00
Second—Amount	1,500.00	
Discount	375.00	
Dealer receives cash		1,125.00
Total mortgages	7,500.00	
Total discount	975.00	
Total cash to dealer		6,525.00
Consumer payments per month per thousand	8.44	63.30
		pays out complete in 15 years
Dealer investment mortgage company—Common 7 1/2% of total mortgages		\$562.50
Mfrs. investment mortgage company—Preferred 7 1/2% of total mortgages		562.50
Net interest rate including 6% on mortgages		7.45%

Financing will be handled on owner-occupied homes only. Insurance against death, sickness and accidents will be carried on the owner, in addition to the customary safeguards.

The management of the mortgage company will be organized in three divisions. The finance operation will be directed by an able banker. The mortgage operations will be handled by a capable mortgage operator. The merchandising and industry contacts division will be handled by an experienced executive.

These three executives will be under the control of a board of directors which will consist of retailers and manufacturers in equal numbers in addition to the above three executives, and representatives of the banking interests. Industry control of the board of directors will always be maintained.

BASIS FOR FINANCING COMPLETED OWNER-OCCUPIED HOMES UNDER THE 5-YEAR PLAN

Selling Price of House and Lot Including Financing costs	\$10,000.00	
Consumer's equity		\$2,500.00
Mortgages		
First—Amount	\$6,000.00	
Discount	\$240.00	
Dealer receives cash		5,760.00
Second—Amount	1,500.00	
Discount	300.00	
Dealer receives cash		1,200.00
Total mortgages	7,500.00	
Total discount	540.00	
Total cash to dealer		6,960.00
Consumer payments per month per thousand	10.00	75.00
Consumer position at end of 5 years		
Second mortgage balance		none
First mortgage balance		4,920.64
Dealer investment mortgage company—Common 7 1/2% of combined mortgages		562.50
Mfrs. investment mortgage company—Preferred 7 1/2% of combined mortgages		562.50
Net interest rate including 6% on mortgages		7.8%

A Building Material Dealer

Shows How
To
REMODEL



WHILE many dealers in building materials have helped to spread the idea of remodeling in their locality, none have spread the remodeling gospel in more effective fashion than the Hicks Lumber Company, by remodeling their old office building at Roslyn, Long Island, New York.

One can hardly believe that the stately Southern Colonial building is the old building erected about 65 years ago, but a careful comparison of the two pictures will show no structural changes. In the remodeling, a new addition was built at the rear and this space is now used for the office, while the entire front space is used to display the different building materials, etc., sold by this firm.

The mill of the Hicks Lumber Co., made all of the mill work required for the transformation of this old building into the present Colonial gem.

The old building was built on what now has become the main street of Roslyn and just at the entrance to its center of activities. The building immediately adjoining the Hicks Lumber Company's office to the right is an old water mill built in 1701 and now used as a tea room.

One feature of the sales room is a background representing one side of an Early American room carried out in knotty pine paneling with open fireplace and corner cupboards.

Back of this office building is the yard which abuts along Hempstead Harbor and opens out on Long Island

"BEFORE and AFTER"

Pictures of the Sales Office of
Hicks Lumber Company,
Roslyn, L. I., New York

Sound providing excellent facilities for receiving bulk materials by boat.

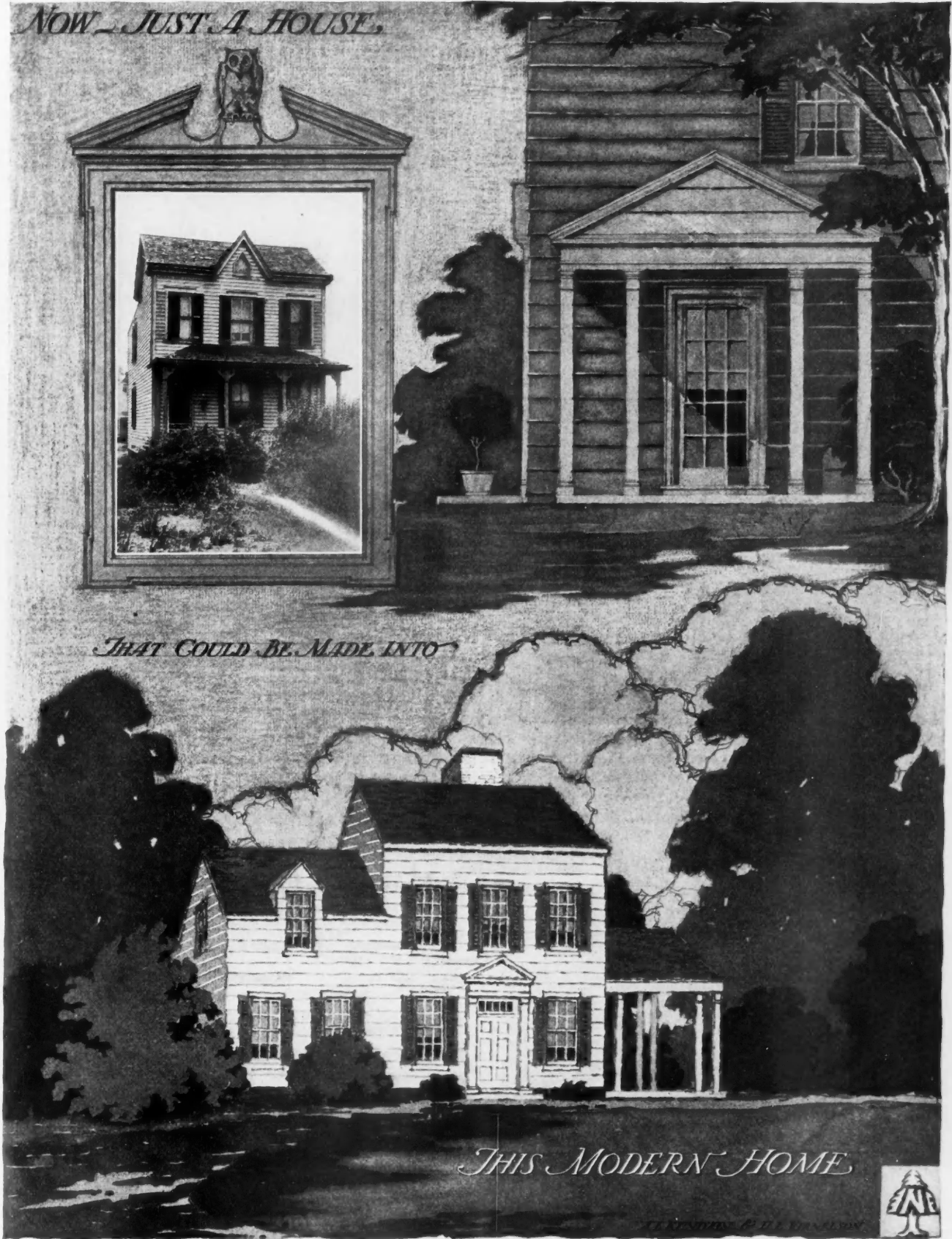
The owners of this handsome store for the sale of building materials report that sowing the seed of remodeling in the minds of the towns-

people has helped to increase the sale of all the materials they handle.

During the years when new building construction was setting a new record nearly every month, remodeling work received scant attention from the material dealer. It seemed like too small picking to bother with and no effort was made to develop it. Since the building slump started, however, a new idea has taken root and today many dealers and builders look to remodeling work as the salvation of their business.

More than that, many have discovered that many modernizing jobs are large enough to be of real consequence. At the annual convention of the National Retail Lumber Dealers' Association, modernizing was a leading topic of discussion and one of the outstanding speeches was a plea to dealers to take the lead in their communities by remodeling their own plants.

Changes in methods of merchandising building materials have taken place and it is now necessary for a dealer to furnish a complete building service to the contractors and the home owners. A very necessary adjunct is to have one's own business in a building that will emphasize one's own faith in the merchandise he is offering for sale.



IDEAS FOR ALTERATIONS

Many old houses are too narrow for their height, and are greatly improved in appearance when a wing is added with roof line at a lower level. Where ground space permits, such alterations bring good results, as exemplified in these sketches by the National Lumber Manufacturers.



Rear View to Left, Front View to Right, of Retail Stores on 69th Street, Philadelphia;
John H. McClatchy, Builder.

Beauty Comes to the Store Rear

WITH the recognition of the power of "eye appeal" in merchandising circles, a great deal of thought and ingenuity have gone recently into the construction of retail stores. But it remained for John H. McClatchy, a well known Philadelphia builder, to take Beauty around to the back door, so to speak.

Mr. McClatchy, in erecting a row of stores on 69th Street, a shopping street adjacent to Philadelphia, decided to obviate any objection there might be to the usually drab store rear, and built them so the backs of the stores represented a row of Colonial homes.

A person walking down the small street immediately in the rear of 69th Street would probably comment upon the attractiveness of the row of private homes, with their shuttered windows, tiny lawns and railings. Yet if he were to enter one of these quaint dwellings, he would find himself in the backroom of one of the busy bustling stores that front on 69th Street. Those residing upon the back street, instead of having to face back yards littered with store refuse, now find themselves with a row of homes as pretty as their own to

gaze upon, even though they are store buildings.

Here is an idea which might be copied to good purpose in every community, large or small, throughout the country. The last few years have seen the development of a new appreciation of the value of beauty in buildings of all kinds. Even factories and warehouses are being designed and built with this in mind and the ground about them is being landscaped with care. At the same time the rear, or alley, view of commercial buildings has been almost totally neglected.

While the alleys of other sections are rather different from the alleys or "back streets" of some of the Eastern cities, which often look almost as much like front streets as the regular streets do, they are entitled to far more consideration than has usually been given them.

A few years ago, one community, a suburb of Chicago, cleaned up and beautified every alley in town, abandoned the name alley and adopted the name lane. It made a remarkable difference in the appearance of a community already famous for its beauty, and it paid, too. The value is not entirely an aesthetic one, it can be turned into dollars and cents through enhanced property values.



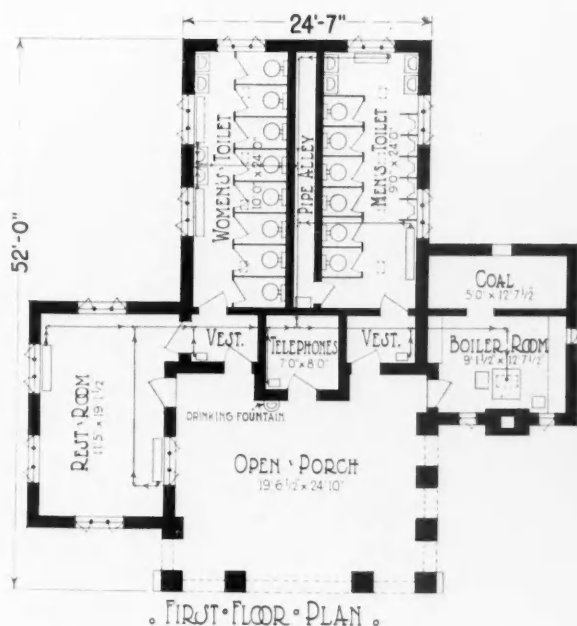
Serving a Community Need

The Public Comfort Stations of Wayne County, Michigan, Park System Are a Model Development

THIRTEEN public comfort stations have been built by the Board of County Road Commissioners, of Wayne County, Mich., in which the City of Detroit is located, as a part of the county system of parks and highways. What is more, these stations have been properly built and are properly maintained, for the board believes that comfort stations are a necessary and important part of its program.

Such buildings are of equal importance in every community and the present lack of them is unfortunate. On the other hand, this lack offers, to builders, an opportunity to stimulate their construction and so to render a public service to their communities and, at the same time, create business for themselves.

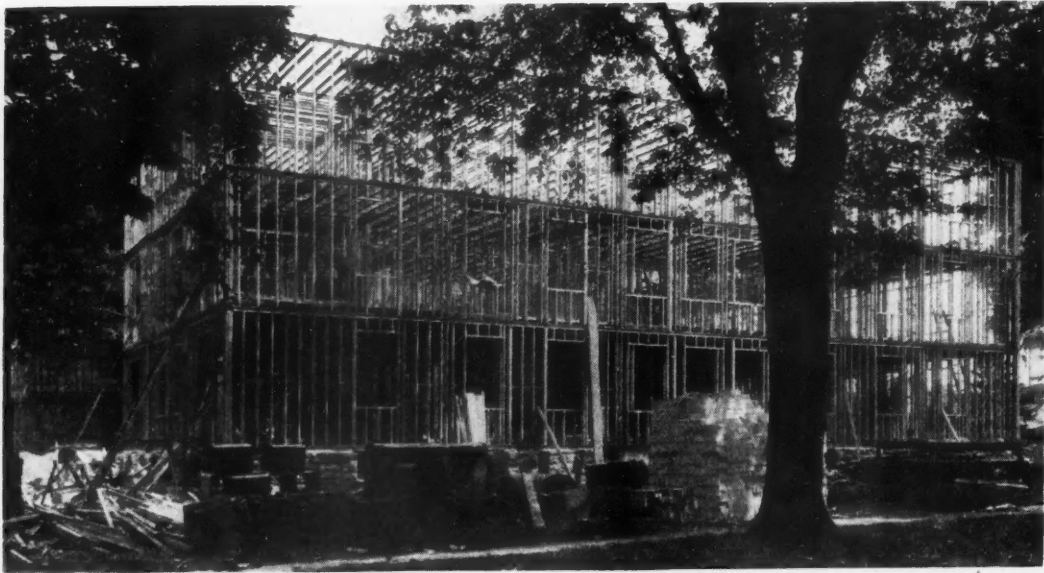
The Wayne County stations are all of similar design. They are of brick, stone and steel construction.



This Plan of the Most Recently Built Station Is Typical of the Whole System.



Each Station Is Provided with an Appropriate Setting of Trees and Shrubbery.



Now Steel Frame Apartments

The Wayne Apartments, Recently Built in a Philadelphia Suburb,
the First Steel Frame Apartment Job, Demonstrates
Practical Economy of Construction

THE first steel frame apartment building was recently completed at Wayne, Pa., a suburb of Philadelphia. The construction of this building is of particular interest from several angles, as an example of modern fire resistant construction and as a development of construction economy for buildings of this type.

This building, known as the Wayne Apartments, is a three-story, forty-two apartment building. Apartments of this size are most frequently of masonry construction with wood floor joists. The Wayne Apartments, however, are steel frame throughout. The exterior walls are four-inch brick veneer over the steel frame with metal lath and plaster interior finish over the steel studs.

The roof and floors are all two-inch concrete slabs, on ribbed metal lath, over open truss joists and junior beams. The interior is plastered over gypsum board

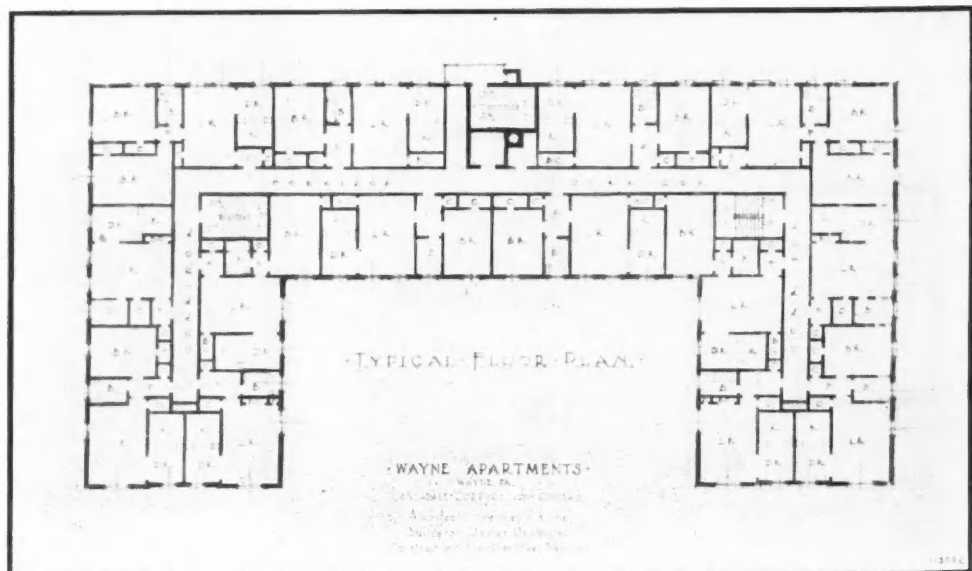
except the stair wells which are plaster on metal lath. The result is a highly fire resistant construction which is of importance in an apartment building of this size. The roof is four-ply felt on slab construction.

For modern, fire resistant construction of this type, the cost of this building was relatively low. While exact cost figures are not yet available, estimates show that the cost will be approximately 44 cents per cubic foot. The entire cubage of the building is 372,000 cubic feet.

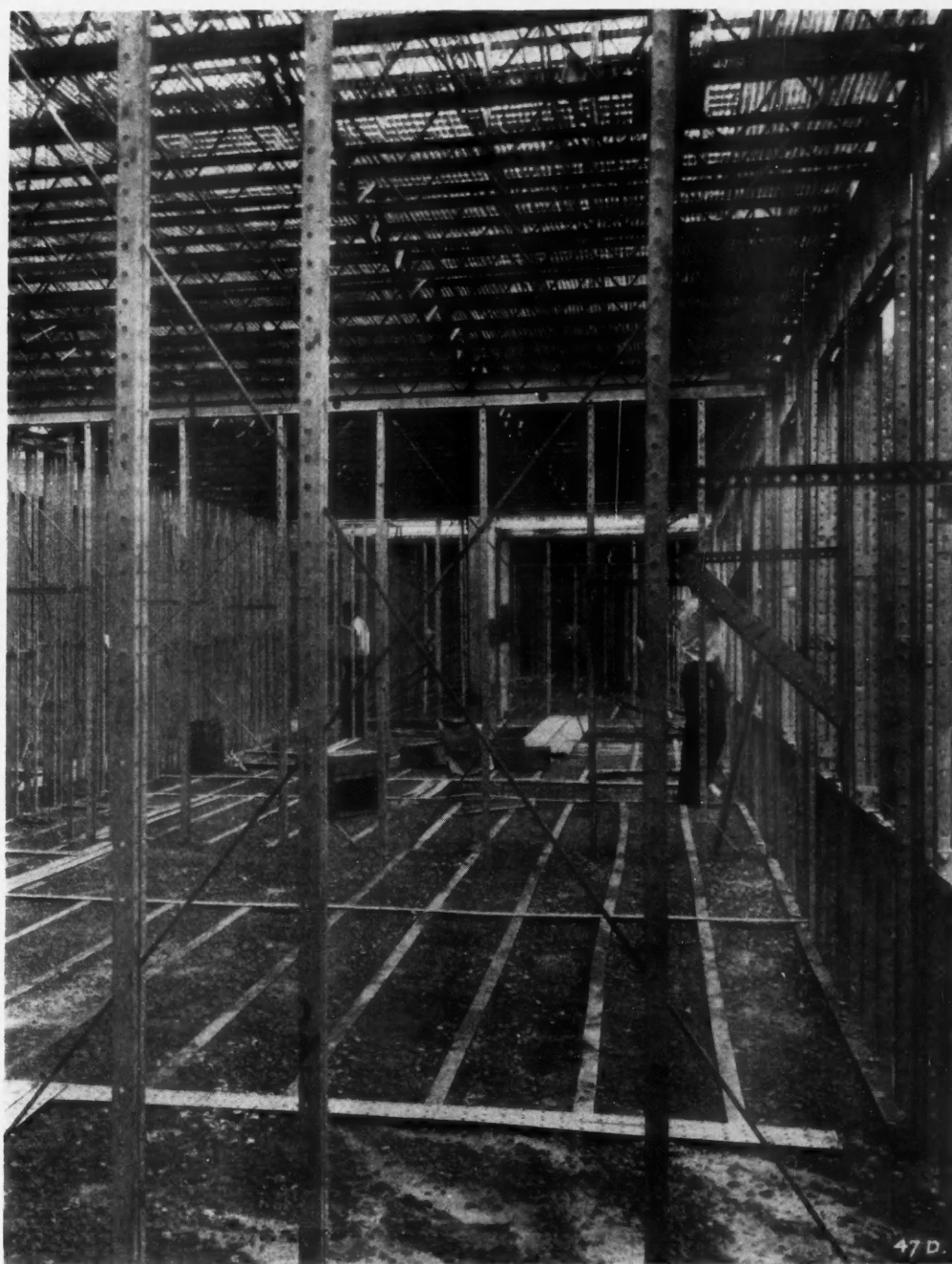
An important factor in this low cost is the method of framing. This duplicates the framing of house construction which permits the economical use of all material units.

During the last few years, a large amount of time and money has been spent by some of the steel com-

The Three Stories of the New, Steel Frame, Wayne Apartments Provide Forty-two Modern, Small Apartment Homes. Herman H. Kline, Architect; Master Masons, Inc., Builders; Lancadale Corp., Owners.



Steel Frame and
Concrete Slab Floor
and Roof Construc-
tion Being Applied
for the First Time
to an Apartment
Building.



panies in a study of the possibilities of steel framing and development of suitable standard forms for such work. Though this movement is still in its infancy, much progress has been made and steel framing looms up as one of the big possibilities of the next decade. Its adaptation to apartment building construction still further emphasizes this fact.

The use of steel framing in apartment building construction may develop even more rapidly than its use in the building of single family residences. In any event it is a trend which will be closely followed by every forward-looking contractor and builder. Its adoption on a large scale would have a far-reaching effect on the industry.

There are some, even, who predict that the development of unit construction based on light steel framing members, will make possible important reductions in the cost of residential construction. In any case it will afford a wider range for owner selection, and permit new and interesting developments in residential design, in line with the so-called modern trend.

The Wayne Apartments contains forty-two tenant apartments of three types. There are twenty apartments consisting of living room, bedroom, kitchenette, dinette, and bath. There are six apartments consisting of living room, two bedrooms, kitchenette, dinette, and bath. The other sixteen apartments contain a living room with built-in bed, a kitchenette, a dinette, and bath.

In the basement there is an apartment for the janitor while one entire wing is finished off as a garage for the use of the tenants. This garage will take care of twenty cars.

Hardwood floors are uniform throughout all the apartments, except in the corridors and kitchens where linoleum is used. For the windows, steel sash are used, and all windows are provided with rolling screens. The hot water heating plant employs an oil burning boiler. An incinerator is, of course, a part of the equipment and, unlike many three-story apartment buildings, elevator service is also provided, making the building thoroughly modern in every respect and a sound investment proposition for the owner.

SOLID WOOD PARTITIONS FOR



Step 1—The 2 by 6's are used for Shoring and Forms.

New Method Developed for Utilizing Shoring and Form Timbers

A RADICAL departure from standard construction for apartment partition walls, involving a more effective use of lumber, has been developed in the offices of Schack and Young, Architects and Engineers of Seattle, and is being used for the first time in an apartment under construction in Seattle, according to the West Coast Lumbermen's Association.

The interesting departure from standard practice lies in the fact that the partition lumber is cut to length and first used as forms for concrete construction. It therefore never leaves the location to which it is first carried as an auxiliary construction material and is finally set up for permanent construction.

The construction involves the use of 2 by 6 tongued and grooved Douglas fir lumber, first using it as shoring, bracing, stringers and soffit boards for reinforced concrete construction and later taken down and built into a mill construction partition. The great bulk of this material is pre-cut to required finished lengths.

The typical partition consists of the 2 by 6 set up vertically, making a solid 2 inch wall. For sound resistant partitions, this wall is covered with sound resisting material, such as fiber board, on each side and plastered. For minor partitions, it may be lathed with wood lath. Where wood lath is used it is furred out by lath strips set vertically at about 16 inch centers, and the whole nailed through to the 2 by 6 inch core.

This construction is extremely fire resistant, there being no hollow spaces except those occasionally encountered for housing pipes or ducts and these are cut off by the fireproof floor at each floor level.

The partition is extremely resistant to sound transmission. This type of wall is thinner than standard hollow walls and effects a material saving in space.

The economic feature of this construction practice is that all of the floor formwork is used up in the partitions. A single 2 by 6, well braced, supports an area of about 15 square feet. Stiffening the entire construc-



Step 2—When the concrete floors have set the 2 by 6 tongued and grooved shores are taken down and piled until needed for the partitions.

CONCRETE FLOOR APARTMENTS

Producing a Better Yet Thinner Partition at Less Cost

tion a row of 2 by 6's, doubled, is carried down the center of the span.

A great saving is found in the ease of erecting forms and taking them down with the almost total absence of waste and elimination of the labor of removing and destroying large quantities of form lumber. Labor costs are very materially reduced.

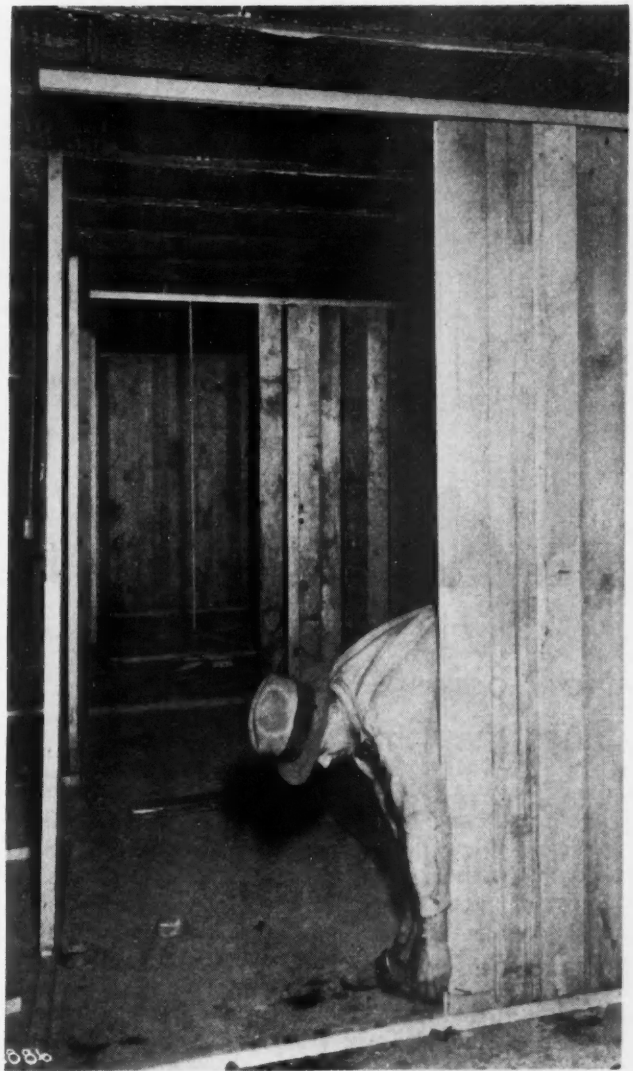
In regions where freight rates on lumber become a considerable item, it would be found economical to use the 2 by 6 inch material for wall forms, later using it up in the same type of partition. In the average apartment construction it will be found that with the most extensive use of 2 by 6 inch in formwork, there still will remain a small deficiency in the amount of lumber required for partitions.

This form of construction is very simple. Workmen are able to go through with the various steps in using lumber with great speed. As shoring, the 2 by 6's are first cut to length, then set up and braced, each upright resting on wedges for adjustment which approximate the thickness of the plate to be used. The soffit boards largely consist in the main part of 2 by 6's cut to partition lengths and put together with temporary cleats.

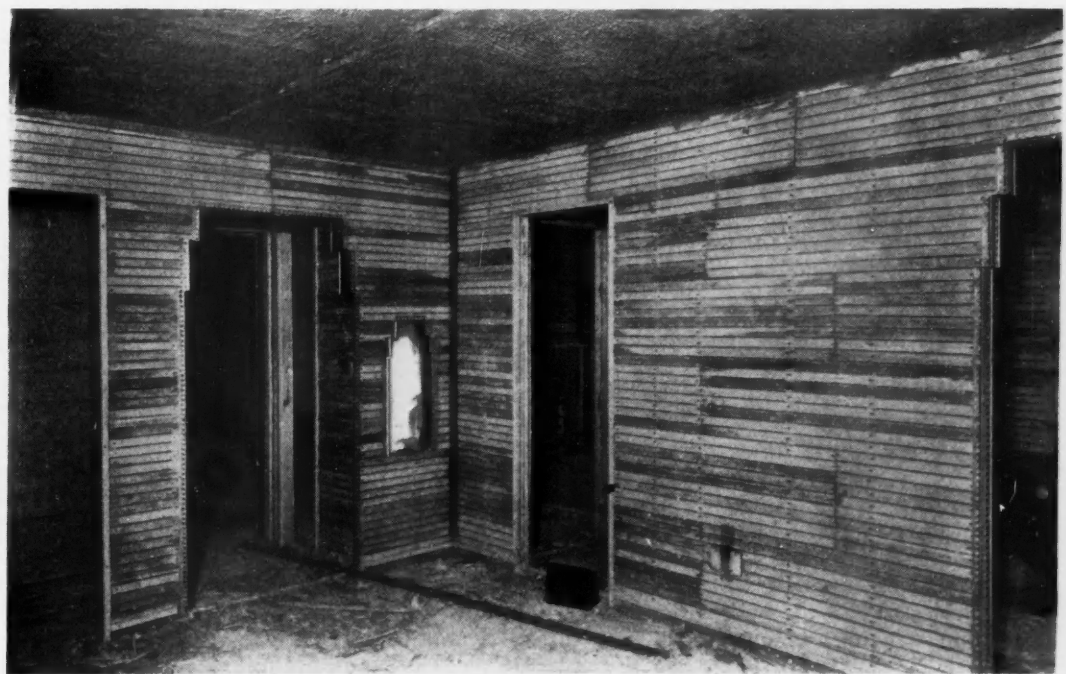
This type of building, which involves concrete floors with all vertical openings fireproof, and openings protected by fire doors, in conjunction with mill partitions, appears to offer a great range of usefulness. The solid partitions are incombustible and a fire would be confined to any apartment in which it started.

James H. Schack and A. M. Young, of the above firm, are members of the American Institute of Architects, and Mr. Young is also a member of the American Society of Civil Engineers. Both members of the firm have a substantial record in constructive work in connection with the Building Code of the City of Seattle. Mr. Schack is at present a member of the Board of Appeals of the Building Department.

Jack Owsley is general contractor for the job.



Step 3—Nailing up the 2 by 6's for solid partitions.



Solid wood partition walls of 2 by 6 tongued and grooved Douglas fir shoring timbers, lathed and ready for plastering. These partitions are sound-proof.

WHEN DOES IT PAY?—

To Use A Power Saw On The Job



No Progress— Since the Time of Christ!

A power saw man has leveled an accusing finger at home-builders with this charge: "Your carpenters are still using the tools of the time of Jesus Christ which, as far as equipment goes, are 2,000 years behind the times."

"Even with the trend in other building operations, where motor driven mixers, modern scaffolding, and other labor-saving devices are used, the industry is still struggling along with the hand saw."

Then he makes this very interesting suggestion to those who must meet modern competition by cutting costs: "Adopt the methods of most efficient production in building construction today, namely, the system of using a man at the saw to do all the cutting, and the rest of the men on the building—not less than seven in number—to do the nailing."

"Under this method, there is one laborer helper with the sawyer to carry the material to the men doing the nailing. Instruct the men doing the nailing to call down from the framework on which they are working, asking for whatever size they wish cut. If a carpenter wants a 2 by 8 or a 1 by 6-14, he simply calls down and the sawyer cuts it and has the helper take it over to him."

"In this way, they do not have to get down off the framework to show the sawyer what they want, as he certainly would be intelligent enough to cut out whatever they call for without being shown how to mark it."

"Residence builders who are building a number of houses scattered in different places at one time find it extremely profitable to have a group of carpenters known as the framing gang with an electric hand saw doing the rough framing on each house. They are followed by an interior trim gang also with a power machine equipped with smooth cutting miter saw for the trim work. The frame gang has anywhere from 7 to 15 men to one machine which does all the cutting for these men; while the trim gang generally employs four men for each saw."

THE builder who keeps a record of the actual time it takes to do every certain operation on his building operations has a valuable set of figures for use in determining whether it would pay to change from, say, hand sawing to power sawing, or to add extra workers on jobs of different size.

However, very few builders and sub-contractors keep accurate detailed records of their costs; so they are not sure just when it would pay to use power equipment.

Many engaged in building seem to believe that it pays to use labor saving machinery and methods on large building operations, but are in doubt that the same can be used profitably on a small job.

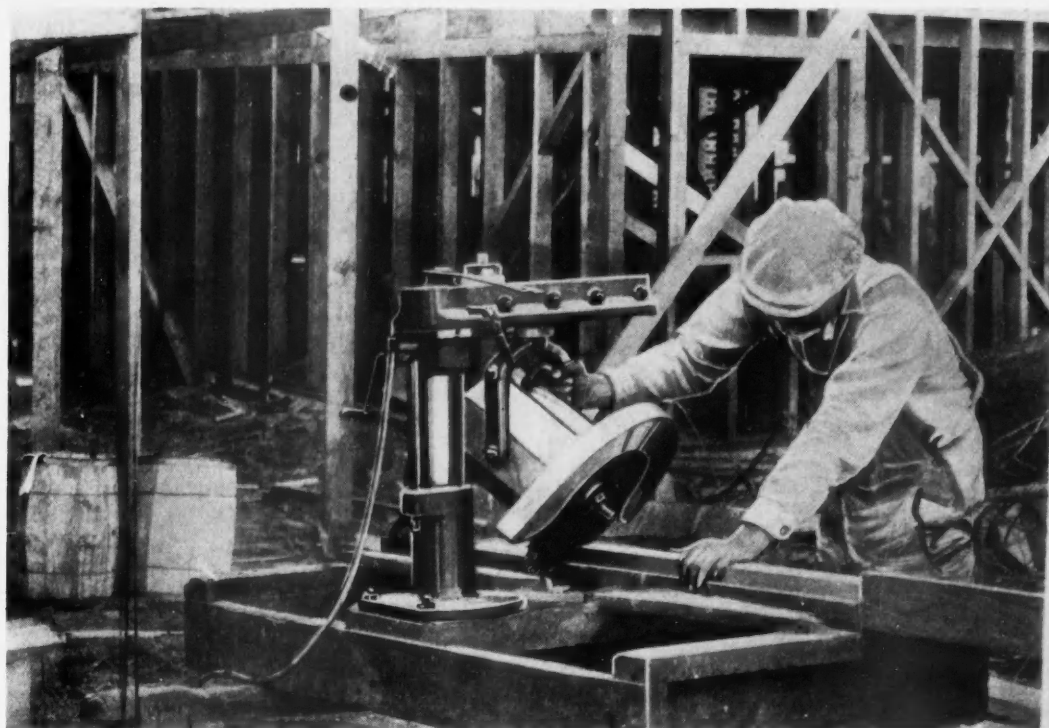
The facts and figures given below, and the method followed in determining these, will enable any builder to judge just when it will pay to use power equipment.

As a rapid turn-over of stock makes a successful retail merchant so the rapid completion of a building makes a successful contractor.

If work can be speeded up on even a small house job, the same profit is made in fewer days, and the chances are that more profit can be made.



The Modern Speedy, Cost-Cutting Way to Saw.



A Man Soon Becomes Expert at Bevel Sawing.

As one of the main expenditures in the erection of a small house is for lumber and carpenter labor let us figure out if it would pay to use a power saw on such a job.

For the sake of an illustration, take a small bungalow that cost exactly \$4,775 to erect. Of this sum, \$1,274.14, or 26.7 per cent was paid for lumber; the millwork cost \$594.37, or 12.4 per cent; the total carpenter labor cost \$750, or 15.7 per cent of the total cost of the house; of this amount \$510 was for labor on construction and the balance, \$240, was for labor in placing interior trim.

In the construction of such a small bungalow the carpenter labor would divide as follows:

Laying out or marking.....	\$170
Hand sawing or cutting.....	170
Erection or nailing.....	170
Total	\$510

If three carpenters were employed at the rate of \$1 per hour, it would take them 170 hours to complete their work.

The carpenter doing the marking or laying out would act as foreman and assist the carpenter doing erecting. The carpenter doing the cutting would also pass the cut timbers to the erector. The time to complete the job necessarily depends on the speed of erection, so this is the basis of the following reasoning:

If the building is to be erected in say, half the number of hours (85) an additional carpenter to help in the erection would be necessary as two erectors or nailers could be kept busy, provided the sawyer was equipped with a power saw so as to be able to supply the cut timbers to the erectors. Of course, with a power saw equipment a sawyer could more than keep up with the demands of two carpenters doing erecting.

If it was desirable to erect the house in less than 85 working hours the number of carpenters doing erecting would be increased. When four or more are employed it would be necessary to employ a helper to keep the erectors supplied with cut timbers, as the sawyer would not have time to carry the timbers to them.

If the erecting crew is still further increased an extra laborer would be needed to help the sawyer.

The results of the above division of carpenter's work is given in the following table:

TIME AND COST RECORD OF CARPENTER LABOR				
WORKERS ON THE JOB		Hours	Rate	Cost
			Per Hour	
3 Carpenters	1 Marking	170	\$1.00	\$170.00
	1 Sawing by hand.....	170	1.00	170.00
	1 Erecting	170	1.00	170.00
TOTALS		510		\$510.00
4 Carpenters	1 Marking	85	\$1.00	\$ 85.00
	1 Sawing by power.....	85	1.00	85.00
	2 Erecting	170	1.00	170.00
TOTALS		340		\$340.00
6 Carpenters 1 Laborer	1 Marking	42½	\$1.00	\$ 42.50
	1 Sawing by power.....	42½	1.00	42.50
	4 Erecting	170	1.00	170.00
	1 Carrying	42½	.50	21.25
TOTALS		397½		\$276.25
8 Carpenters 2 Laborers	1 Marking	28¾	\$1.00	\$ 28.34
	1 Sawing by power.....	28¾	1.00	28.34
	6 Erecting	170	1.00	170.00
	2 Carrying	56¾	.50	28.34
TOTALS		283¾		\$255.02
10 Carpenters 2 Laborers	1 Marking	21¼	\$1.00	\$ 21.25
	1 Sawing by power.....	21¼	1.00	21.25
	8 Erecting	170	1.00	170.00
	2 Carrying	42½	.50	21.50
TOTALS		255		\$234.00

This theoretical summary of the carpenters' work could be continued until it could be shown that the entire structure could be erected in less than an hour. Practically, however, this would take so many men that it would be physically impossible to find room for them on the job.

In other words, there is an economical limit to the number of men employed on a job at one time, and this is the number of men that can be kept constantly supplied with cut timber as needed, by one sawyer steadily and normally operating one power saw without overworking.

In many of the records examined that show constant performance, between six and eight erecting carpenters seem to be the maximum economic limit for one sawyer to keep supplied.

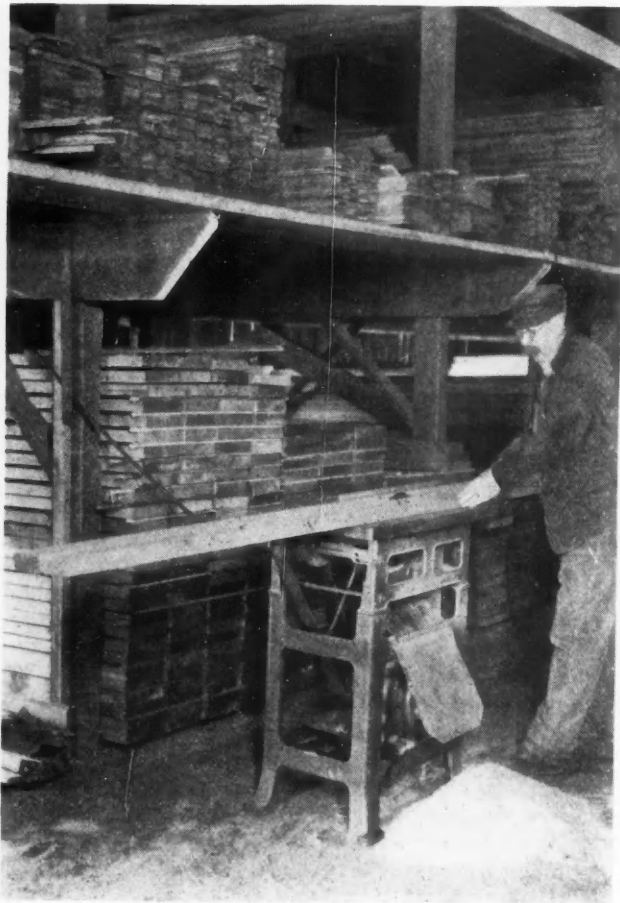
The table shows the gross savings effected by employ-



The Electric Hand Saws Handle a Variety of Sizes.

ing power sawing and a varying number of carpenters. From this gross saving must be deducted a number of items of expense due to the use of a power saw, such as the cost of saw, transportation, electricity, installation, depreciation, etc.

To arrive at the net saving, assume that the cost of power saw used is \$200 delivered. If the hard usage it receives on different building operations will make replacement necessary in about four years, its cost will



Many Lumber Yards Are Now Equipped with Power Saws for Cutting Framing Stock to Exact Length.

be \$50 annually, plus the interest lost on the \$200 investment, or \$12 annually.

These figures follow; based on six jobs annually.

Annual Depreciation of Saw.....	\$ 50.00
Interest (6% on \$200 Cost of Saw).....	12.00
Transportation to Six Jobs Annually.....	24.00
Electrical Installation Six Jobs @ \$15.....	90.00
Electrical Current Expense, \$4 Per Job.....	24.00
Repairs, Oil, etc.....	14.00
Field Sheds.....	50.00
TOTAL ANNUAL COST OF SAW.....	\$264.00
Average Cost on One Job.....	44.00

Adding this cost to the labor cost it will be found that a substantial sum can be saved over hand sawing.

One of the best arrangements seems to be with a force of six carpenters and one laborer—here the cost would be \$320.25, effecting a net saving of \$189.75 over hand sawing methods employing three men; and the job is completed in 42½ hours compared with 170 hours.

Besides saving time in using a power saw, a considerable saving can be made in material as well. On every operation where timbers are cut on the job there is always more or less waste and many of these waste pieces can be used.

A waste piece of 2 by 8 can be easily ripped on a power saw into two 2 by 4 pieces and these can be used for blocking, fire stops, lookouts, etc. It would not pay to do this ripping by hand; so a long 2 by 4 piece would be used; and the extra cost of this represents additional saving.

In using a power saw one very important item is to order the installation of the power line before the work is actually ready to start; this should be done when the materials are delivered on the site or the foundations started. Don't wait until you are ready to cut the timber and then frantically call up the power company for an immediate installation—it usually is hard to get.

The power company's service charge for running the extension lines, with meter, etc., costs anywhere from \$3 to \$30; about \$15 is the average installation charge.

For localities not supplied with electric power a slightly different problem presents itself. Small portable gasoline operated generating sets can be had. One sufficient to operate a power saw would cost about \$350; therefore, this must be taken into consideration. If the job is of considerable size, the labor saving effected will usually be large enough to pay for the generating outfit as well as the saw and still leave a handsome margin of profit.

In some places the lumber yard is equipped with a power saw and they will usually cut timbers to dimension for a 10 per cent fee. That is, if the timber bill totals \$500, the fee for cutting is \$50. The builder, however, does all the marking. This method saves the builder making any investment in power equipment and is especially helpful if the job is in a location not serviced by a power line.

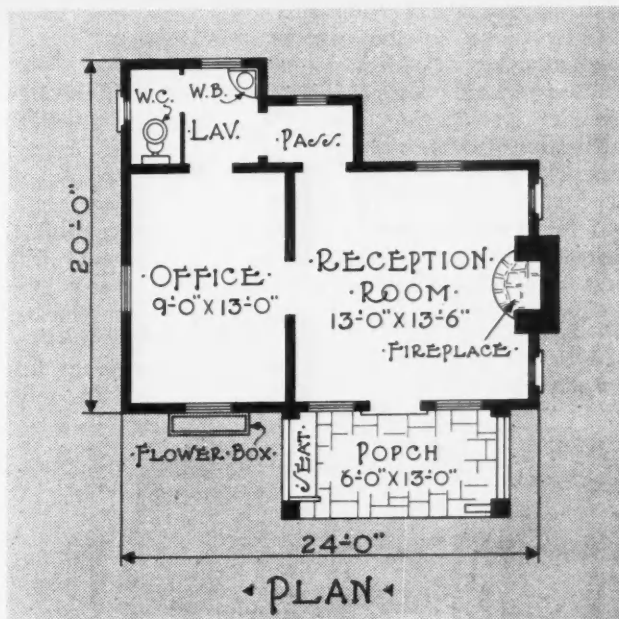
A method of determining when it pays to use a power saw on the job is presented in this brief analysis. Actual cost records of different jobs, using different types of machines, would be of interest to our readers. The Editors would be glad to receive and publish such records; so if you have some interesting figures and notes send them along for the benefit of other builders.



FOR A FIELD OFFICE
here is
A LITTLE BEAUTY

NOTHING adds so much to the attractiveness of a development as an artistic field office. The field office should stand out as indicative of the type of buildings expected to be erected on the property as well as serving as a comfortable conference room in which prospects can be made welcome.

The attractive little beauty shown here is located at "Beacon Hill," a new development in Westchester County, N. Y., fostered by The Homeland Co., of New York City. The main part of the building is 14 feet by 24 feet in size with a 6 by 13 foot entrance porch in front and a lavatory wing at the rear. In design it follows the English Cottage style to a considerable extent even though the vertical siding is decidedly American.



ATTRACTIVE sign boards mark the street intersections; while similar signs indicate the direction to the different surrounding towns.

"Beacon Hill," as its name denotes, is a hillside location and consists of about 75 acres, all well wooded. It was on this very spot that the allied American and French troops were in camp during the latter part of the American Revolution; the location was selected for its eminence so that the beacons used to guide the patriots to the camp could be seen afar; the name selected is, therefore, quite appropriate.

Later this particular property was owned by Cyrus W. Field of Atlantic Cable fame. From him it passed to other owners until acquired by The Homeland Co., which has laid it out, put in improvements, and has already erected a number of houses. They are prepared to build a house on any selected site at one stated inclusive price and handle all details in one transaction, including financing without bonus or super charge.



They Told Us: Bad Time to Start

But We Went Ahead Just the Same and Established a Successful Cement Brick Business

AN INTERVIEW WITH
GILBERT A. HANKE

Treasurer, The Stonecraft Co., Grand Rapids, Mich.

PERHAPS no better example can be cited of what may be accomplished by the carrying out of the principles of vision and courage than that of the Stonecraft Company of Grand Rapids, Michigan. The natural tendency in times of business depression is to retrench, lie quiet and wait for the rest of the country to do something. To expand or to launch a new enterprise at such a time would by many be considered a hazardous thing to do.

Yet under what seemed unfavorable business conditions and contrary to a great deal of well meant advice, the Stonecraft Company threw precedent aside and launched an entirely new industry in the concrete building units field. Much credit for the successful launching and operation of this company is due to their treasurer, Gilbert A. Hanke, not only for his vision and courage, but also for his ability to carry through his carefully laid plans in the face of obstacles that would have stopped the average man.

In speaking of the organization of the Stonecraft Company, Mr. Hanke said:

"For several years I had been connected with the cement and building industries. All my training and inclination had been along those lines. For considerable time I had planned to start the manufacture of some product in the concrete products field. My connections and my work brought me into close contact with this industry. I had ample opportunity for seeing things first hand and getting the inside story.

"Everywhere I found the field in concrete block and tile very well covered. The one thing that seemed to be neglected or entirely overlooked was concrete brick. I decided it would be a good unit to make if it could be

manufactured efficiently so as to compete with clay and sand lime units. I realized that there was a tremendous field for it if this could be done; for here was a standard commodity used everywhere and with an unlimited market. It seemed to me the biggest field of all if it could only be made and profitably sold at the right price.

"I had an idea of a type of production machine on which I felt brick might be produced not only on a basis which would enable me to go into the field on an even footing with clay and sand lime units, but would permit me to undersell them if necessary. It seemed to me that someone ought to be able to produce machinery along the lines of the straight-line, continuous production methods I had seen in the great motor factories, something that would be simple and not excessively high in price.

"I thought of having a special machine designed along these lines. I realized, however, that this would be difficult and costly. And then, I found a machine, new, but already out of the experimental stage, which was just exactly what I had in mind. With such equipment I knew I could manufacture concrete brick at a lower cost than any other and the original investment would be only a fraction of that required for a clay or lime brick plant. So, with two experienced associates we planned the Stonecraft Company.

"Friends with whom I talked—it was then just after the stock market crash—advised me to wait. Yet with all our plans made, we did not want to do that. We were anxious to go; and I started out on a little investigation of my own to see if I could find some encouragement. I found it. Investigation of the building in my own town brought out that there was not much residence construction under way, but that all around us there were evidences of the tremendous governmental and industrial building program that had been planned.

"Our next step was to secure a factory building. We found one that had been previously used for the manufacture of cement blocks, which we proceeded to modernize. Our equipment in this plant now consists of an automatic, straight-line produc-



Brick Storage Yard and Original Factory at Grand Rapids, Which Has Set a New Low Cost Production Record.

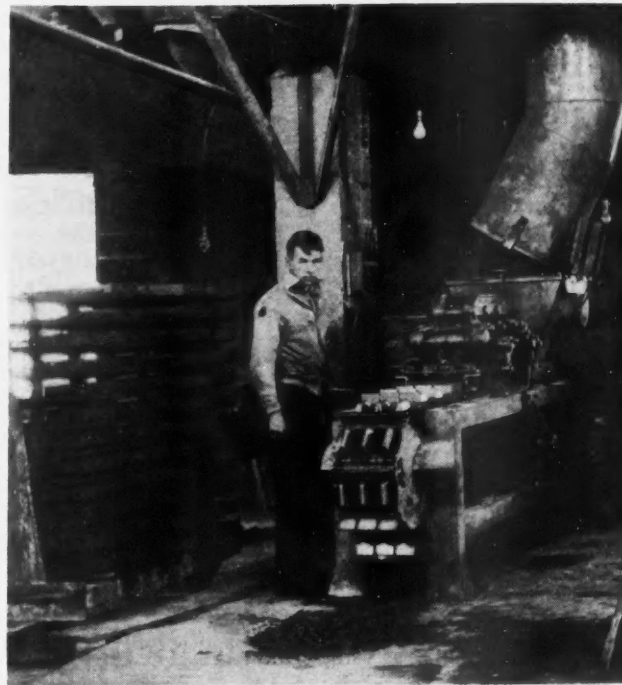
tion brick outfit, roofing tile machine built on the same principle and a small tamper type of block machine on which we can easily get an average production of 1,000 blocks per day. All of our mixers are installed overhead, delivering the mixed material directly into the receiving hoppers of our machines. Dry raw material is elevated directly to the mixer floor, eliminating double handling. Special receiving rack cars deliver the finished product to the kilns, and the cured product comes to the yard at what I believe to be an entirely new low cost in brick making.

"Our plant was started in the early part of this year and has run continuously from the first. Our brick have been used in the largest and most representative types of construction in Grand Rapids and vicinity.

"Our brick is handled by practically all of the good material yards in the city. They like the product and push it. The convenience of being able to fill any size job immediately without making it necessary to carry large stocks appeals to them.

"For some time we had been delivering considerable quantities of our brick to Muskegon, a distance of a little over forty miles from our factory. Most of the building material yards there, too, were stocking it. In a very short time, this trade increased to a point where it became necessary to manufacture there also and together with one of the largest building material concerns in that city we organized The Muskegon Dunbrik Company. The new factory building is now going up. It is being built from plans drawn up by the engineering department of our equipment manufacturers. It is designed for utmost efficiency with the raw material coming in at one end and leaving the plant at the other a finished product. The two plants will now give us all the benefits of decentralized manufacturing and enable us to serve the two cities most economically. Already we have enough orders for the new Muskegon plant to keep it busy during the winter months.

"The new business has prospered under conditions in which many well established businesses have made no progress. We do not want to take all of the credit for ourselves. There are many other factors to which we attribute our success. The ability to furnish a quality product at less cost with our efficient production machinery is the big one; but the adaptability of the unit to all types of work, the fact that wherever it is used there are always repeat orders forthcoming, and the readiness of the manufacturers of our equipment to cooperate with and assist us, all have contributed largely toward our success. Starting this enterprise and making it go under present business conditions have given us confidence, and we feel that we will have a long lead on the



Automatic Line-Production Machine. Capacity 24,000 brick per day. One man operated.

individual who waits until times get better; for we have been making progress while he has stood still. We cannot help but feel, too, that having started and successfully gone through this period our business is on a much firmer foundation and that we can continue to make money in the face of any so-called business depression."

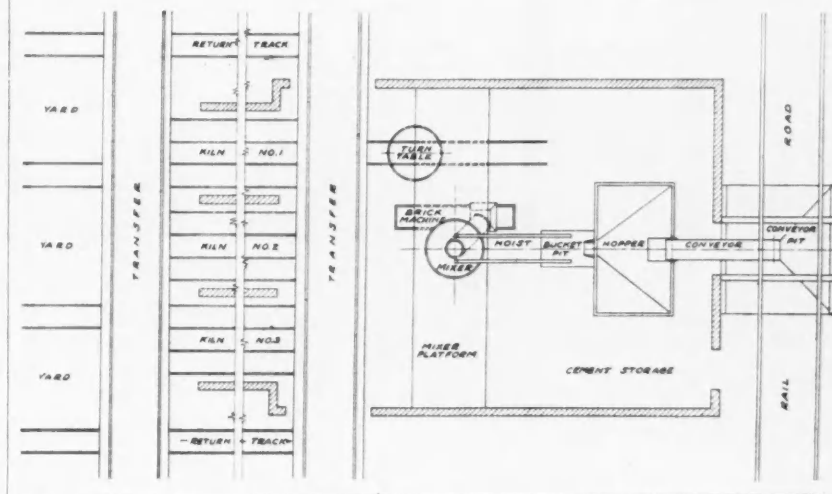
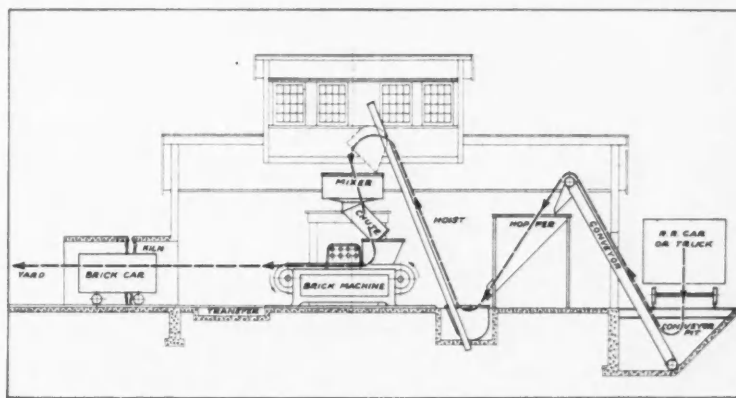


Diagram of New Straight-Line Production Brick Plant Being Built by Mr. Hanke and Associates at Muskegon, Mich.

How Big Is the Building Business?

A Study Based on Five-Year Averages by the Research and Marketing Division of the American Builder and Building Age

THE building business might be likened to a great, shambling giant among industries. It is more than just an industry, for it embraces many complete industries. Building activity is ever present in our 746 cities and towns of more than 10,000 population, as well as in the 15,000 towns and villages of less than 10,000 population, and on many of our 6,000,000 farms. It is extremely difficult to secure and tabulate the records of so huge a business; it is natural that no commercial or governmental agency has ever claimed 100 per cent accuracy or coverage for its tabulations of building construction records.

In general, all building activity may be classified in one of the three following groups: Residential, Non-Residential, Public Works and Utilities. Based on the most reliable statistics of the years 1925-1929 inclusive, the average annual building volume in the United States is \$8,793,757,180. Of this amount Residential Building represents 54.9 per cent, Non-Residential Building 30.7 per cent, Public Works and Utilities (mainly Civil Engineering) 14.4 per cent.

The detailed figures for the average annual building volume, and sources from which they are derived, are as follows:

The Annual Building Market—\$8,793,757,180 FIVE YEAR AVERAGE—BASED ON YEARS 1925-1929 INCLUSIVE

RESIDENTIAL BUILDING

Dwellings	\$ 784,522,360
2-Family Houses	161,342,480
Housing Developments	435,882,200
Apartments	1,159,067,680
Hotels	208,736,680
(Above figures derived from published figures by F. W. Dodge Corporation.)	
Unreported and Moderate Cost Construction	\$2,069,760,000
(This figure is by the Research and Marketing Division, American Builder Publishing Corporation. The F. W. Dodge Corporation figures estimated \$1,724,800,000 for unreported and low cost construction; the figure used is 20 percent greater than the F. W. Dodge Corporation estimated.)	
Total Annual Residential Building	\$4,819,311,400

NON-RESIDENTIAL BUILDING

STORES AND OFFICE BUILDINGS:	
Banks	\$ 40,732,980
Offices	398,747,180
Offices and Banks	90,756,200
Stores	201,001,580
INDUSTRIAL BUILDINGS, GARAGES AND WAREHOUSES:	
Garages	158,658,240
Warehouses	94,836,700
Mineral Extraction	42,315,420
Food Products	70,734,920
Chemical Industries	23,755,460
Leather	3,565,120
Power Plants	168,525,060
Iron and Steel	77,779,620
Vehicles	33,603,340
Petroleum	37,059,680
Paper and Pulp	18,869,700
Printing and Binding	16,895,720
Rubber	5,317,840
Textile	49,008,600
Lumber	15,213,200
Non-Ferrous Metals	28,306,700
Miscellaneous	71,297,400
EDUCATIONAL, RELIGIOUS AND MEMORIAL:	
Gymnasiums	10,347,120
Libraries, Museums, etc	24,315,560
Schools and Colleges	391,677,480
Churches	127,646,140
Convents	9,661,900
Memorial Buildings	13,709,240

PUBLIC BUILDINGS, ETC.:

Institutions	24,170,400
Hospitals	130,036,440
Military and Naval	10,223,360
City Halls, etc	49,083,560
Fire and Police Stations	18,218,460
Post Offices	7,838,240
Auditoriums and Halls	25,292,520
Clubs and Lodges	86,164,120
Parks	6,432,640
Park Buildings	27,047,740
Theatres	96,541,480
(Above figures derived from published figures by F. W. Dodge Corporation)	

Total Annual Non-Residential Building \$2,705,387,060

PUBLIC WORKS AND UTILITIES

Waterfront Developments	\$ 57,451,980
Bridges	143,733,940
Incinerators	3,983,760
Lighting Systems	35,440,020
Railroad Construction	151,456,980
Railway Buildings	70,948,280
Sewerage Systems	121,658,840
Highways	607,249,240
Water Supply Systems	77,135,680
(Above figures derived from published figures by F. W. Dodge Corporation)	

Total Annual Public Works and Utilities \$1,269,058,720



15.7% Residences—1 and 2 Family
15.6% Apartments and Hotels
23.6% Unreported and Moderate Cost Construction

RESIDENTIAL MARKET
54.9%



8.3% Stores and Office Buildings
10.4% Industrial Buildings, Garages and Warehouses
6.5% Educational, Religious and Memorial
5.5% Public Buildings
14.4% Public Works and Utilities

NON-RESIDENTIAL MARKET
30.7%

MISC.
14.4%

The five year averages opposite provide a much truer estimate of the average annual building volume than the figures for any single year. Further study of building volume statistics discloses the fact that although the Residential, Non-Residential, and Public Works and Utilities percentages may vary from year to year, this variation is within one or more of the three groups and does not materially affect the average total volume figure.

The total of \$8,793,757,180 may seem greater than previously published estimates; this is due to the fact

that Public Works and Utilities, which represent 14.4 per cent of the entire building volume, are included in the above figures. Subtracting this 14.4 per cent, or \$1,269,058,720, would place the total for Residential and Non-Residential construction at \$7,524,698,460. It is to be remembered that this last figure includes small summer cottage construction, repairs, additions and alterations, remodeling, rural building, etc.—activity which for many years has been referred to as “the hidden market,” and seldom included in contract reports.

1930 CONSTRUCTION FIGURES ARRANGED BY STATES

Dodge Figures for 37 Eastern States, with Estimates for 11 Western States and for Low Cost Construction and Remodeling

State	Population 1930 Census	Number of Projects	Value
Maine	800,056	497	\$ 17,382,300
New Hampshire	465,293	537	11,142,840
Vermont	359,092	279	9,603,900
Massachusetts	4,253,646	8,007	191,933,580
Rhode Island	687,232	1,493	26,684,180
Connecticut	1,604,711	3,313	92,132,660
New York	12,619,503	14,772	918,440,940
New Jersey	4,028,027	5,557	230,261,420
Pennsylvania	9,640,802	9,385	423,955,100
Delaware	238,380	304	16,901,120
Maryland	1,629,321	2,643	70,567,540
District of Columbia	486,869	1,060	52,225,200
Virginia	2,419,471	1,993	72,985,600
West Virginia	1,728,510	673	57,115,620
North Carolina	3,170,287	2,134	58,421,340
South Carolina	1,732,567	1,287	33,930,480
Georgia	2,902,443	2,923	52,056,900
Florida	1,466,625	3,061	46,237,100
Ohio	6,639,837	11,118	322,376,880
Indiana	3,225,600	4,402	78,840,240
Illinois	7,607,684	8,649	309,659,680
Michigan	4,842,280	8,064	177,591,340
Wisconsin	2,930,282	5,006	142,066,300
Kentucky	2,623,668	1,455	49,622,640
Tennessee	2,608,759	2,662	59,938,960
Alabama	2,645,297	1,829	38,736,060
Mississippi	2,007,979	1,651	30,110,940
Minnesota	2,566,445	2,822	66,169,320
Iowa	2,467,900	2,612	87,129,120
Missouri	3,620,961	4,983	225,957,540
North Dakota	682,448	375	8,803,800
South Dakota	690,755	486	8,850,760
Nebraska	1,378,900	1,298	46,884,040
Kansas	1,879,946	2,647	83,573,520
Arkansas	1,853,981	1,728	34,769,000
Louisiana	2,094,496	2,032	60,001,200
Oklahoma	2,391,777	3,373	81,962,820
Texas	5,821,272	8,328	183,438,680
Total reported in 37 Eastern States		135,438^A	\$4,478,461,660
Montana	536,332	} Estimated	\$ 447,846,166
Idaho	445,837		
Wyoming	224,597		
Colorado	1,035,043		
New Mexico	427,216		
Arizona	435,833		
Utah	502,582		
Nevada	90,981		
Washington	1,561,967		
Oregon	952,691		
California	5,672,009		
U. S. TOTAL REPORTED			
—1930	122,698,190	150,955	\$4,926,307,826
Unreported and moderate cost structures and remodeling		229,894	\$1,182,313,878
TOTAL ALL 1930 U. S. CONSTRUCTION		380,849^B	\$6,108,621,704

^A 155,182 Buildings.

^B 378,080 Buildings.

*Estimated

ARRANGED BY MONTHS

37 Eastern States Only

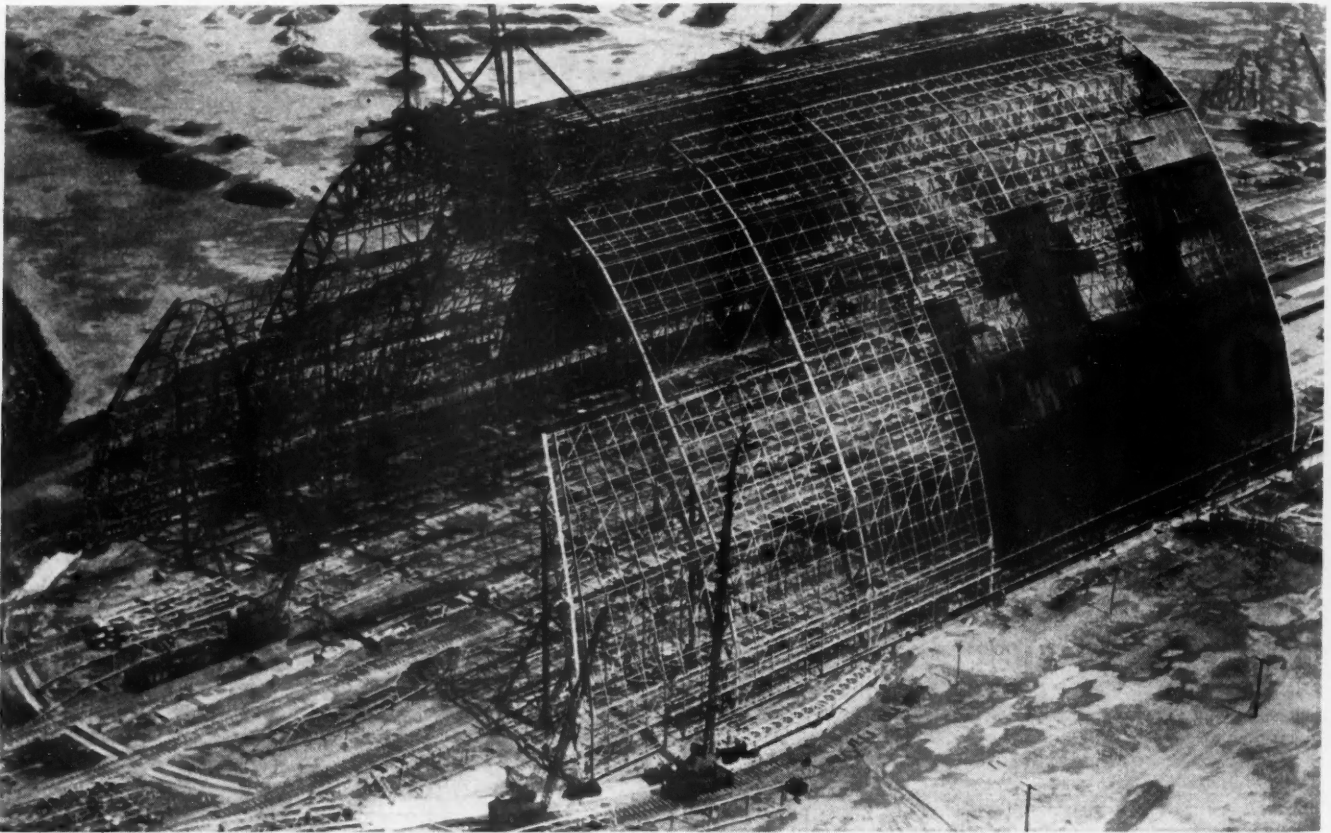
Month	BUILDINGS		PUBLIC WORKS		ALL Value
	Buildings	Value	Projects	Value	
January	8,403	\$211,910,000	800	\$112,065,200	\$323,975,200
February	8,976	231,228,100	829	85,824,900	317,053,000
March	12,812	350,769,200	1,483	105,349,800	456,119,000
April	15,261	333,206,800	2,119	149,669,900	482,876,700
May	13,920	322,502,900	2,351	134,913,100	457,416,000
June	13,008	348,657,600	2,529	251,915,800	600,573,400
July	11,765	252,662,100	2,264	114,866,300	367,528,400
August	10,906	223,116,200	2,010	124,202,100	347,318,300
Sept.	10,873	230,450,700	2,083	101,412,800	331,863,500
October	12,230	226,105,500	1,975	111,195,900	337,301,400
November	9,683	181,877,900	1,254	71,695,800	253,573,700
Dec.*	6,778	145,502,320	877	57,356,640	202,863,060
TOTAL	134,615	\$3,057,993,420	20,567	\$1,420,468,240	\$4,478,461,660

ARRANGED BY CLASSES

Figures from Dodge Reports with Estimates for Unreported Construction by American Builder and Building Age

CLASS	SUB-CLASS	NUMBER	VALUE	
Commercial	Banks	497	\$ 20,035,520	
	Garages	8,320	91,356,940	
	Offices	3,161	260,243,100	
	Offices and Banks	106	41,720,300	
	Stores	8,273	125,028,920	
	Warehouses	2,065	80,550,860	
	Airports	158	12,502,480	
	Total	22,580	\$ 631,438,120	
Industrial	Total	5,179	465,206,260	
	Educational	Gymnasiums	217	7,070,820
		Libraries, Museums, etc	269	31,021,960
Schools and Colleges		4,230	334,392,200	
	Total	4,716	\$ 372,484,980	
Institutions	Hospitals	775	\$ 126,835,760	
	Institutions	430	36,140,280	
	Total	1,205	\$ 162,976,040	
Public	Military and Naval	225	21,037,860	
	City Halls	573	54,879,040	
	Fire and Police Stations	371	24,326,640	
	Post Offices	269	24,265,920	
	Total	1,438	\$ 124,509,460	
Religious and Memorial	Churches	1,774	\$ 75,947,200	
	Convents	105	8,458,300	
	Memorial	142	7,805,900	
	Total	2,021	\$ 92,211,400	
Social and Recreational	Auditoriums and Halls	199	9,178,800	
	Clubs and Lodges	1,055	47,402,680	
	Parks	153	8,234,900	
	Park Buildings	682	19,786,860	
	Theaters	453	27,937,000	
	Total	2,542	\$ 112,540,240	
Residential	Apartments	5,462	329,375,180	
	One Family Houses	58,299	503,431,400	
	Two Family Houses	6,232	54,206,700	
	Housing Developments	24,499	154,707,340	
	Hotels	542	55,106,300	
	Total	95,034	\$1,096,826,920	
Total Reported in 37 Eastern States	134,715	3,057,993,420		
11 Western States	13,471	\$ 305,799,342		
Unreported and moderate cost structures	229,894	689,683,096		
Total New Building	378,080	\$4,053,475,858		
Remodeling		492,630,782		
Total All Building		\$4,546,106,640		
Public Works	22,623	1,562,515,064		
TOTAL ALL U. S. 1930 CONSTRUCTION	400,703	\$6,108,621,704		

High Arch Hoisting and Erecting Problems Solved



Frame Work of the Goodyear-Zeppelin Hangars Nearing the Point of Constructing the Movable Circular End Sections.

THE Goodyear-Zeppelin hangar at Akron, Ohio, is completed, we know, and it is no news to the industry at this late date. But, perhaps, there is something of value that we may glean from the very special and peculiar hoisting methods used in getting the arches in place and building the roof and sides. These facts will possess all the more importance for the future in view of the whole series of such buildings which must inevitably come into being to house not only dirigibles, but other aircraft, and perhaps even be pressed into other uses, for it is the only method to date by which we may secure 364,000 square feet of uninterrupted floor space. In fact, considerably smaller uninterrupted areas may have to go up in the fashion of this hangar.

We have the American Bridge Company, as well as the Goodyear-Zeppelin engineers, to thank for the hoisting problems solved. They have the merit of being applicable to structures regardless of height.

The method consisted, according to Goodyear-Zeppelin, in erecting the lower sections of a pair of arches about 100 feet in height, and 80 feet apart, upon temporary bents, as shown in an accompanying picture, placing all bracing between the arch ribs to this height; then assembling the center portion of the arches on the ground, upon a cradle, and lifting them into position by means of counter weights carried upon the side sections

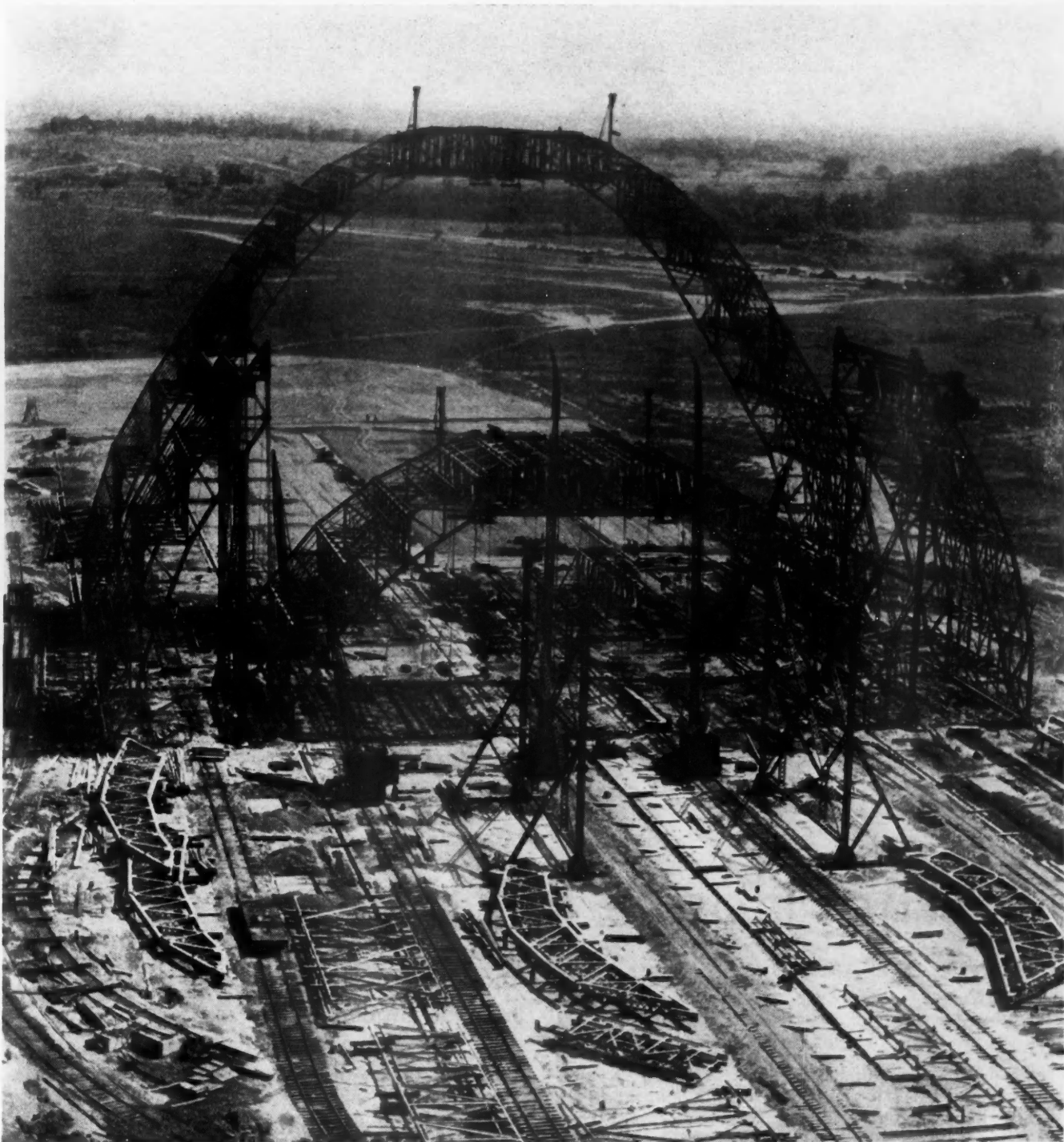
already erected, and the drums of the locomotive cranes.

The shell of the building is supported by eleven full arches and two sets of end diagonal arches. Only the three center arches have fixed shoes, the balance being supported upon rockers, allowing the structure to expand and contract from the center to the ends.

Erection started with the southerly two arches of the three fixed center arches, and proceeded southward to the south doors which were erected in open position, supported upon the exterior of the main structure, and assembled by using locomotive cranes as high as these could reach and then utilizing a derrick traveler located on top of the arches.

The erection plan involved the use of eight lines of railroad tracks, two outside the building and six inside. Altogether, about one and one-half miles of standard gauge railroad tracks were used at one time, over which seven locomotive cranes, five with 50 foot booms, and two with 105 foot booms and goose-necks, which gave each a total reach of about 125 feet, were operated.

The erection bents for supporting the side sections of the arches consist of two steel columns, each supported upon a 300 ton jack at its base, the function of the jack being to spread the tops of the lower sections enough to allow the center section to pass by, and then to bring them together again in order to effect the



The End Sections of Each Span Are Supported by Temporary Bents, Then the Center Arch, Erected on Another Pair of Temporary Bents, Is Hoisted Complete to Close the Span. Counter-weights Assist in the Raising.

closure between the sides and the center section.

At the top of these columns the sheaves were placed for carrying the counterweight boxes weighing about 72 tons each loaded and equivalent to about 80 per cent of the weight of the center section of the span, leaving about 20 per cent to be lifted by the cranes. Each center section erected weighed about 360 tons.

The center sections were assembled by the cranes upon cradles which comprised longitudinal girders carrying the ends of the arches and transverse ties to take up the thrust.

During the lifting of the center section of the arch truss, the four corners were kept level by means of

weighted piano wires and graduated boards which served very well as height gauges or tell-tales.

In addition to the seven cranes mentioned, a traveler on top of the arches for erecting bracing and the end arches, was of the usual type of horizontal frame about 80 feet wide and 80 feet long, carrying two stiff leg derricks with 90 foot booms. The travelers were mounted on temporary "I"-beams, and moved by hand winches. The derricks were operated from the ground.

For erecting the end diagonal arches and the upper parts of the doors and the cantilever trusses, two additional stiff leg derricks with 90 foot booms were used, mounted on top of the end arches near the center.



The House of the Month

Working Plans of a Six Room English Design
in Brick and Half-Timbered Stucco

PERHAPS you will have a client who will particularly like this House of the Month and want one just like it. Or you can build this house and, because it is of a popular style, and arranged to meet the requirements of the average family, it will be readily salable. In either case it can be built from the plans, reproduced to scale, on the five pages following this.

But that is not the only way you can use these plans, if you file them for future reference. If the house, as shown here, is not just what your client wants it is a simple matter to modify it to suit individual tastes and needs and so satisfy the client.

Then again it has an important reference value because of the suggestions it may offer in future work. The room layout, the selection and placing of modern labor saving equipment, the wiring plan, a door or window detail, or any number of other ideas may be just what is needed to fit into some design you are working out.

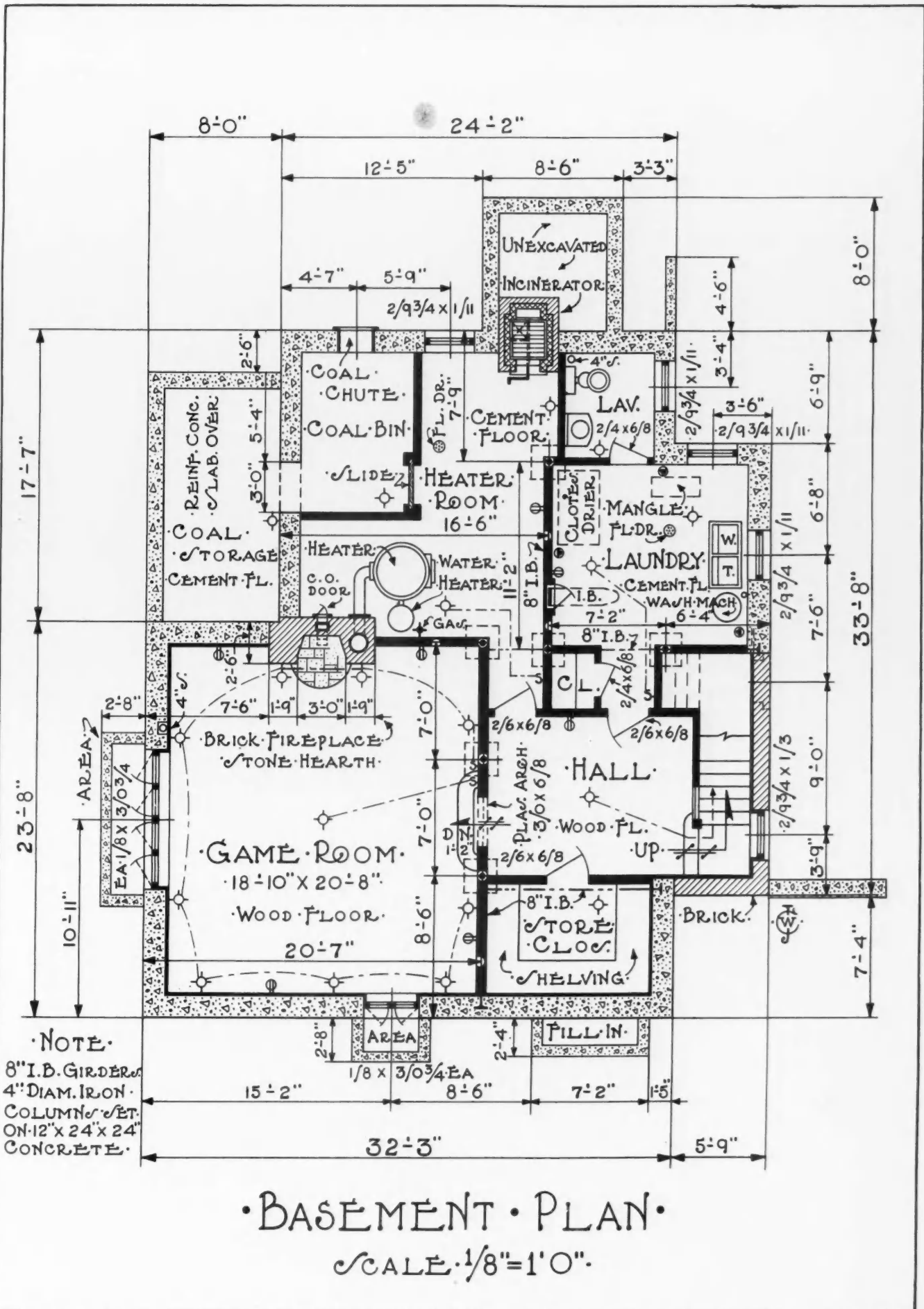
File These Plans for Future Reference. They Have a Definite, Practical Value to Anyone Interested in Designing or Building Homes.

To the student of drafting and design, these pages offer a valuable model as they have been prepared by an architectural department, expert in this particular kind of work.

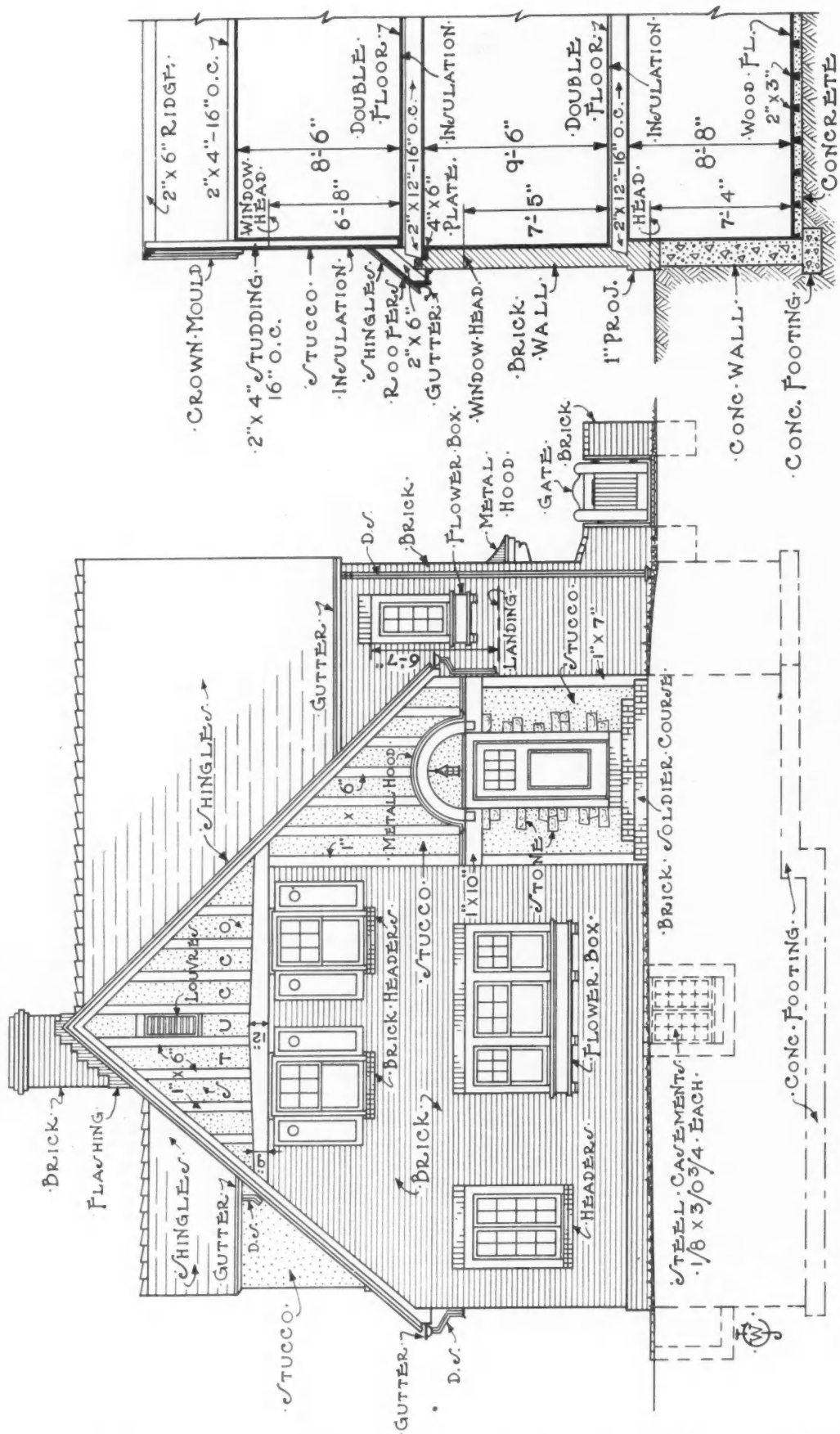
One excellent feature of this set of plans is the group of interior and exterior details reproduced on page 88. They provide complete information and measurements for laying out various arches, doorways and side gate, and will add greatly to the reference value of this material.

A file of good designs, with properly developed plans, is an invaluable part of every builder's equipment. The House of the Month

is a regular monthly feature prepared for the purpose of assisting the builder to accumulate such a file. The designs are selected, not only for their architectural merit, but also for the adaptability to the actual needs of the builder and his clients. The plans are carefully prepared so that they may be depended upon for accuracy and completeness, in every detail.



Here Is a Basement That Is Intended for Use, Not Merely a Place for the Furnace.

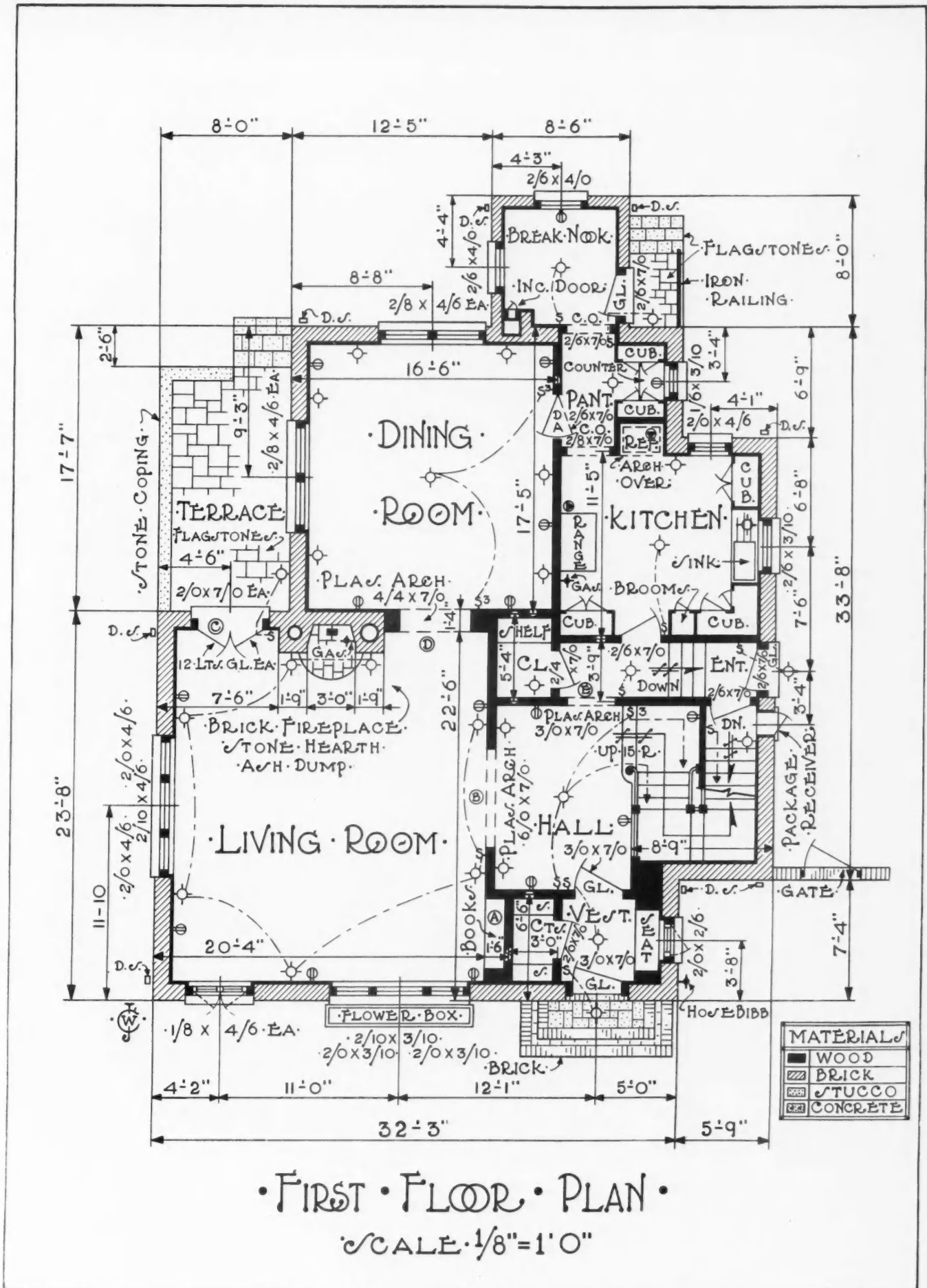


FRONT ELEVATION

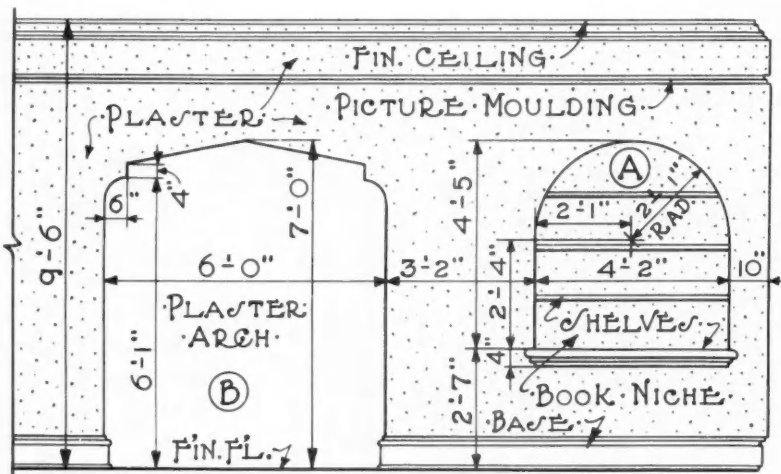
SCALE 1/8" = 1'-0"

SECTION

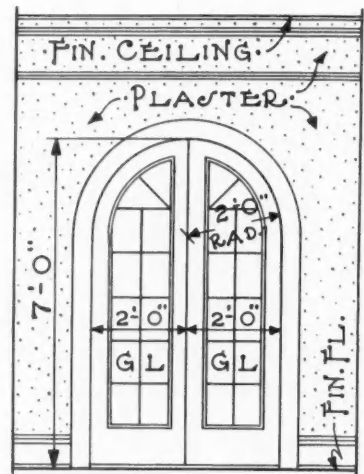
Elevation and Section of Brick and Half-Timbered English House on Page 84.



"Complete" Is the Word Which Best Describes This First Floor with Its Multitude of Conveniences.



ELEVATION IN LIVING ROOM.

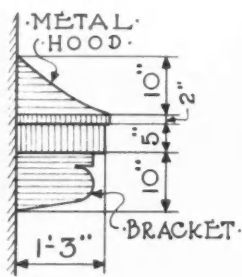


FRENCH DOORS (C).

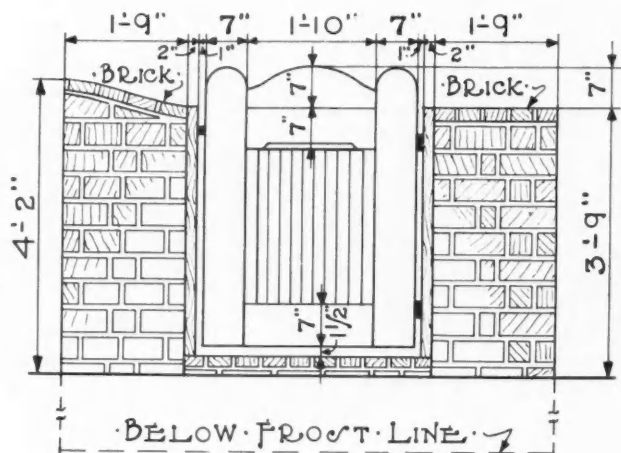


FRONT.

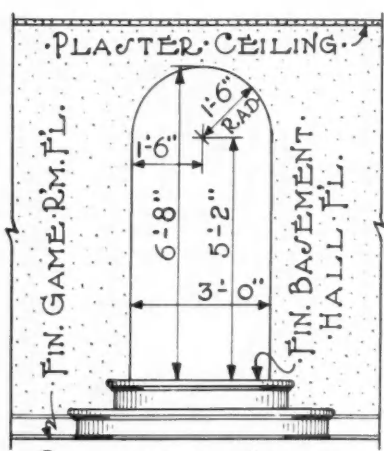
METAL HOOD AT SIDE ENTRY.



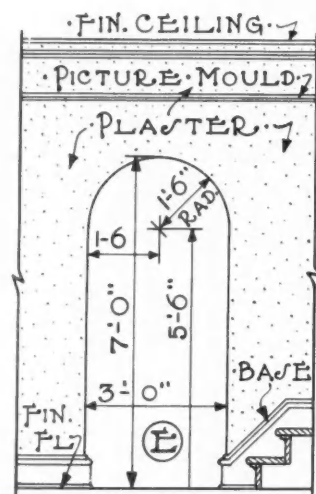
SIDE.



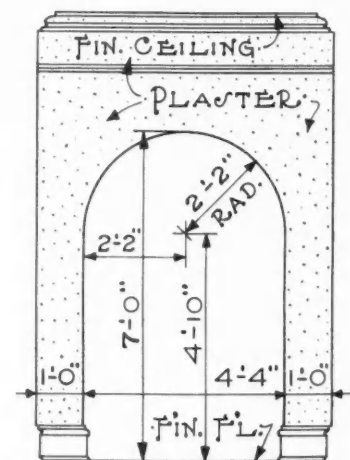
ELEVATION OF GATE.



PLASTER ARCH IN GAME ROOM.

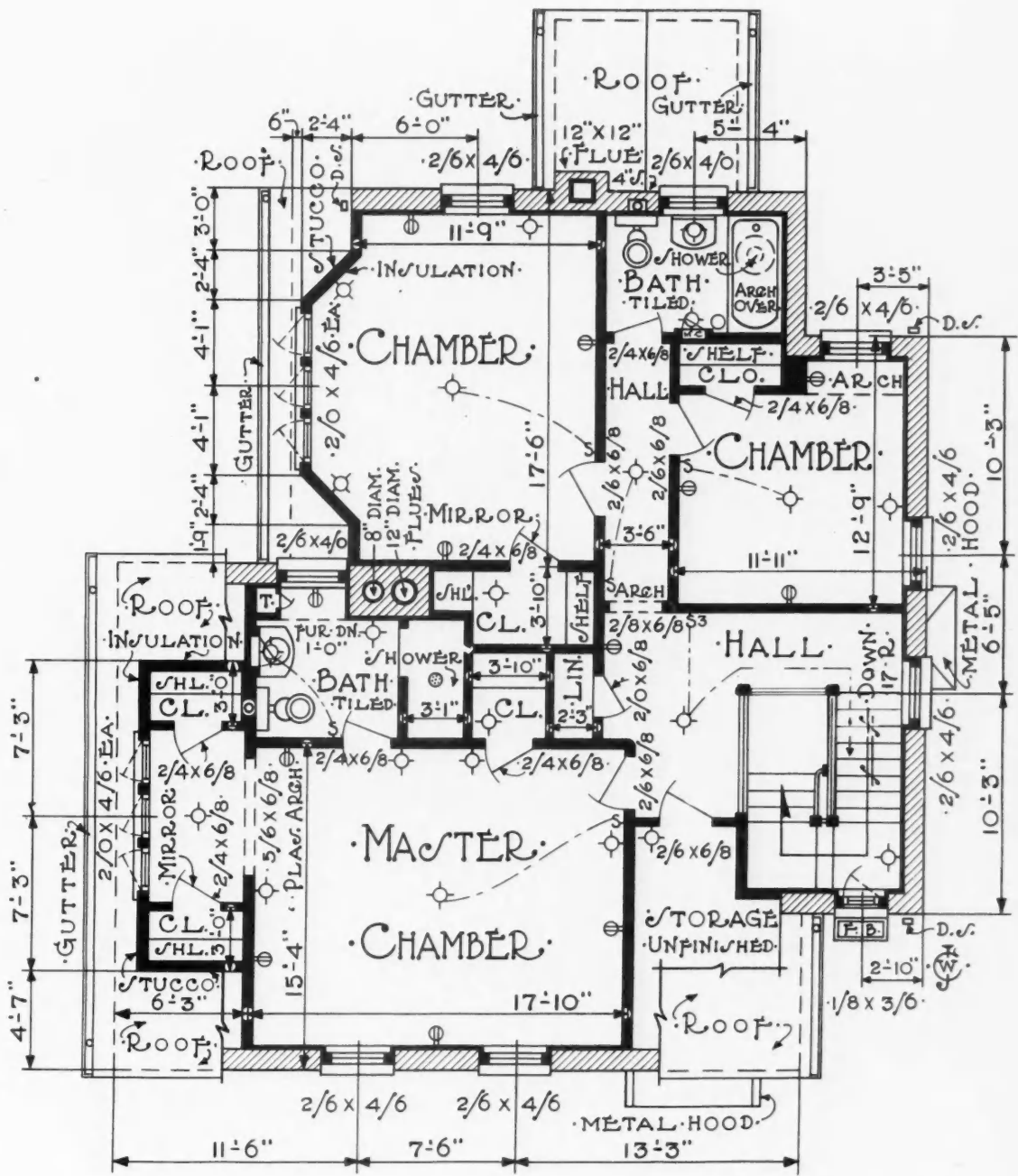


PLASTER ARCH.



PLASTER ARCH (D).

These Details Are Valuable Reference Material, Full of Suggestions That Can Be Used in Other Designs.

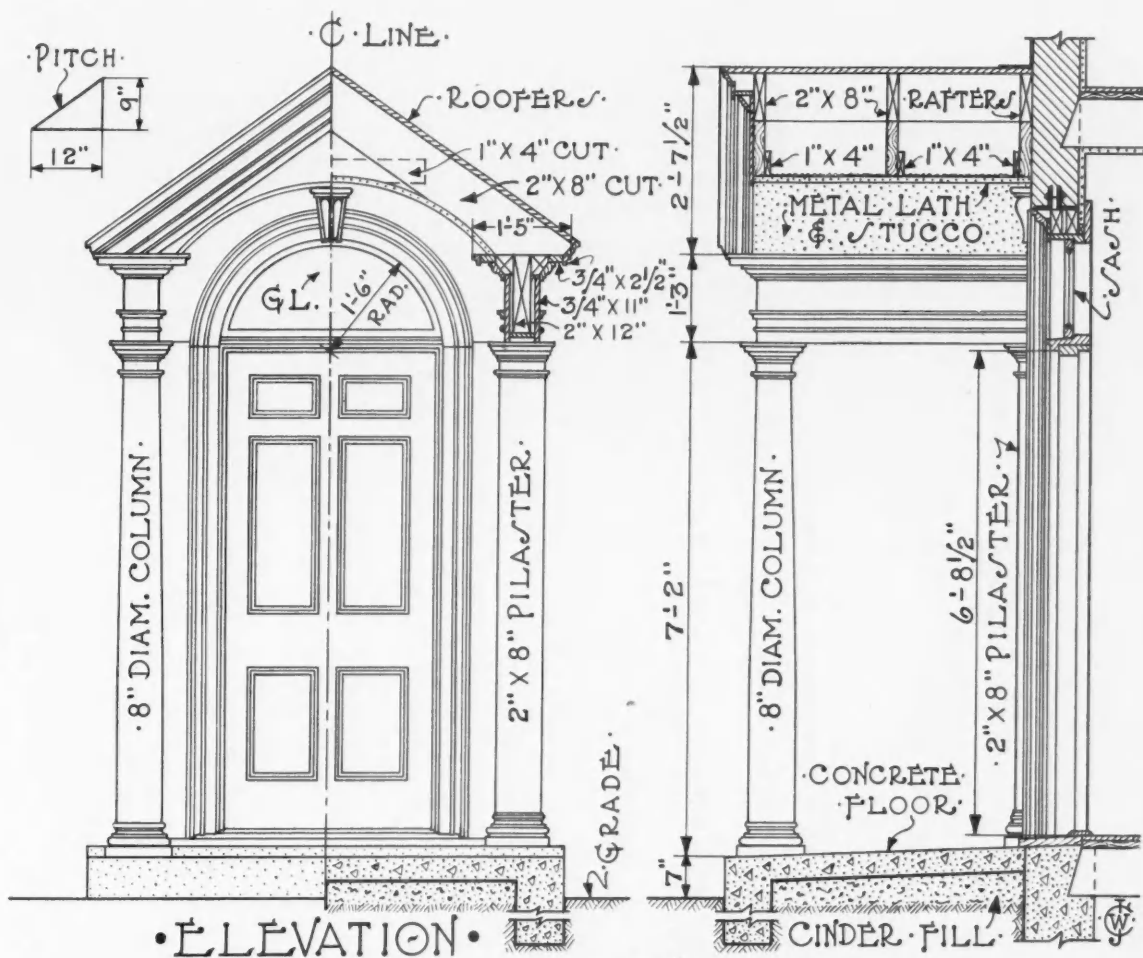


• SECOND FLOOR PLAN •

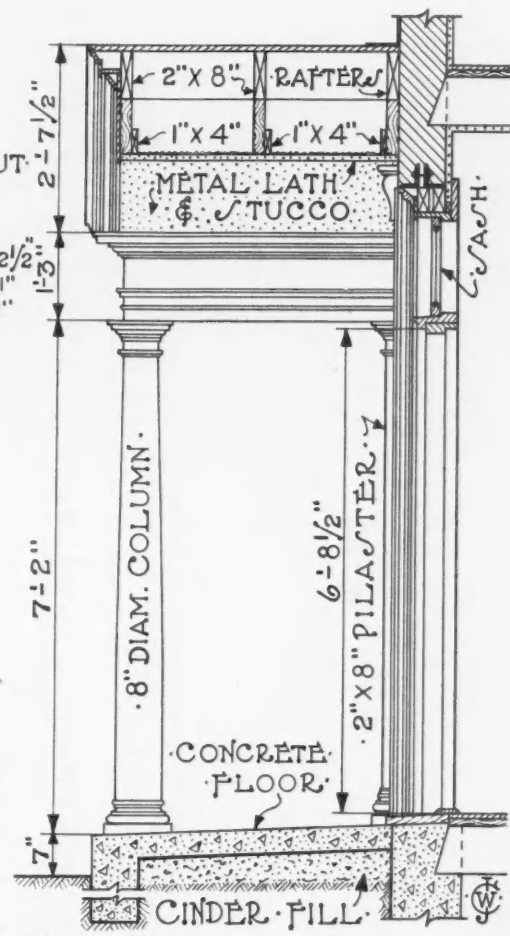
• SCALE 1/8" = 1'-0" •

Three Bedrooms, Two Baths, and Closets Enough to Satisfy Any Housewife Are Provided.

MEASURED DRAWINGS OF COLONIAL ENTRANCE

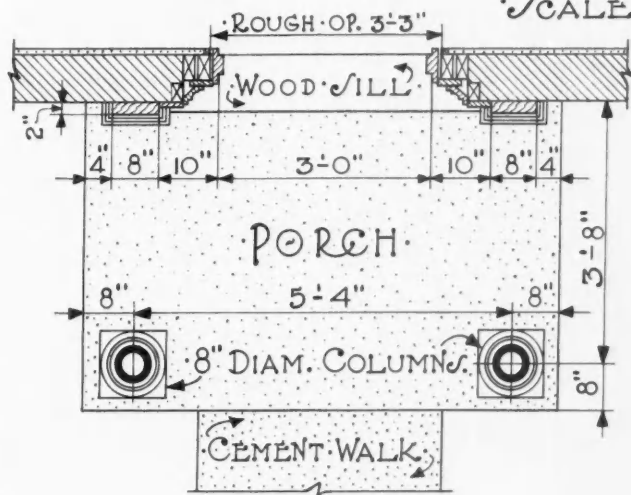


ELEVATION

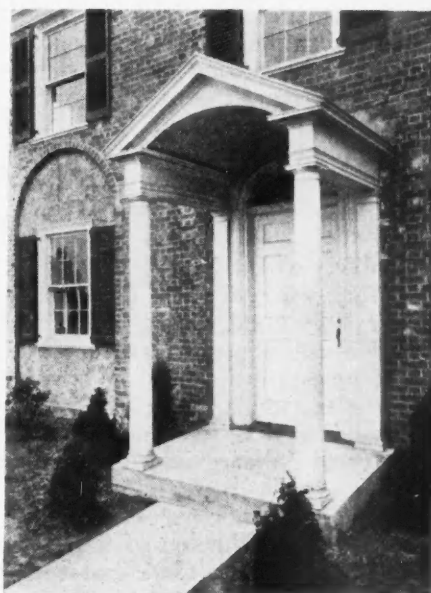


SECTION

SCALE: 3/8" = 1'-0"

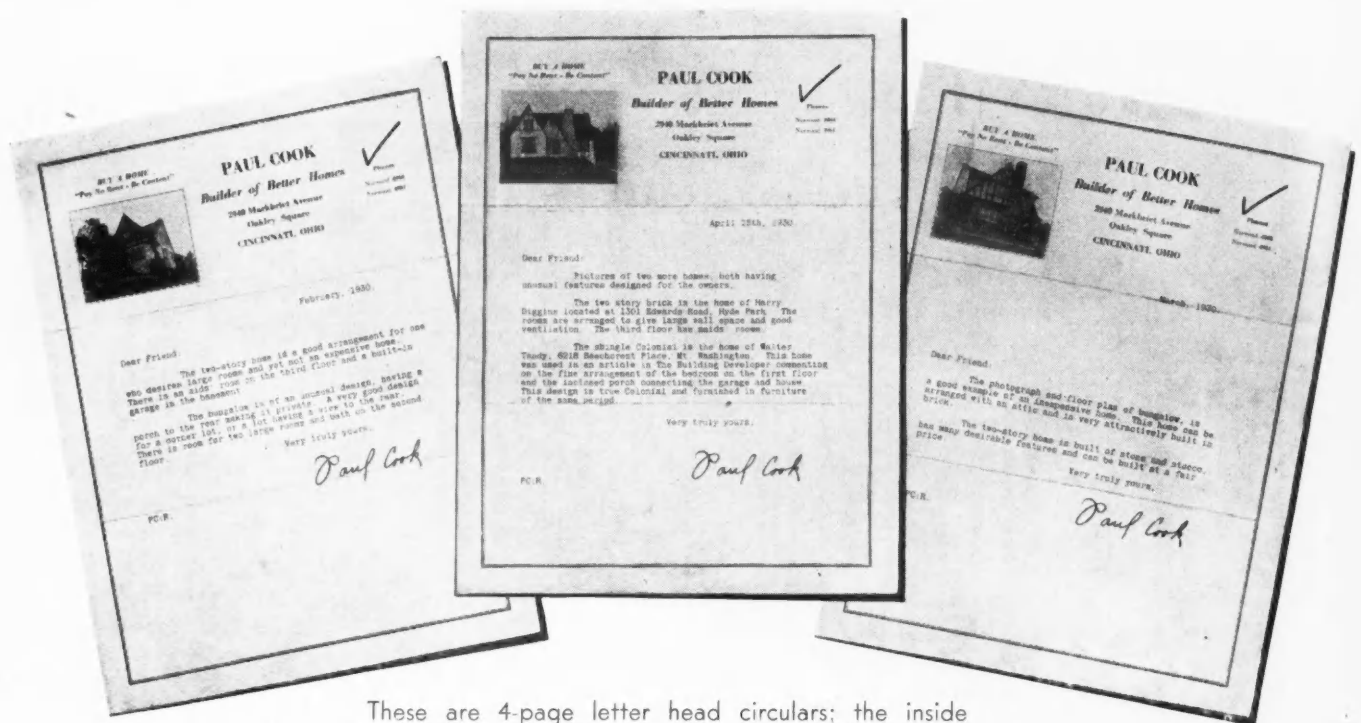


PLAN



Ye Colonial Entrance

SECURING BUILDING CONTRACTS BY



These are 4-page letter head circulars; the inside spread shows photos and floor plans of some of Mr. Cook's recent home jobs.

There is nothing new in the idea of using form letters, circulars, etc. Thousands of business men in various lines of industry have used them with more or less success. Builders, however, have not been using them as fully as their possibilities would merit. An up to date prospect list can be used effectively if a form letter, circular, etc., is mailed from time to time.

Mr. Paul Cook, a builder, of Cincinnati, Ohio, specializing in home building, has found the use of form letters quite successful. The description of the method he uses will be of interest to every builder hunting for orders. Mr. Cook uses houses that he has built as the subject of his letters.

He uses a four page circular, the first page represents a regular letter head with a form letter in type-writer type. He uses short paragraphs and makes the letter short. Names are not filled in because everyone knows that it is a circular and it is no use wasting money on something that fools nobody. When these circulars are mailed they are folded with the letter side out.

On each of the two inside pages of the circular there appears a halftone reproduction of a photograph of a house recently built by Mr. Cook and with it a short description and floor plan together with the name of owner and location of house. The fourth page of circular contains the advertising cards of sub-contractors and material dealers whom Mr. Cook patronizes. Pay-

I formerly had a plan letter in which the Publisher used homes of his selection. This was not nearly as good as the plan I have now, in which I show my own homes. This gives me the opportunity to show the completed home, which makes it much easier to sell. I believe failures in plan letters are due to a poor mailing list. My list is selected from known prospects, lot owners in new subdivisions, birth notices and last apartment renters.

—PAUL COOK

ment is received from these firms and this income, of course, helps cut down the cost of producing and mailing the circulars. New form letters are issued from time to time, but no stated time is followed. As mentioned above the letters are short, as the following four examples will show.

—1—

February, 1930.

Dear Friend:

The two-story home is a good arrangement for one who desires large rooms and yet not an expensive home. There is a maid's room on the third floor and a built-in garage in the basement.

The bungalow is of an unusual design, having a porch to the rear and a lot having a view to the rear. There is room for two large rooms and bath on the second floor.

Very truly yours,

PAUL COOK

—2— April 15th, 1930.

Dear Friend:

Pictures of two more homes, both having unusual features designed for the owners.

The two-story brick is the home of Harry Diggins located at 1301 Edwards Road, Hyde Park. The rooms are arranged to give large wall space and good ventilation. The third floor has maids' rooms.

The shingle Colonial is the home of Walter Tandy, 6218 Beechcrest Place, Mt. Washington. This home

TS BY USING FORM LETTERS + + +



The picture and plans shown here is the home of John R. Gehrig, located on Miami Avenue, Terrace Park, Cincinnati. It is an example of the type of house built by Paul Cook and illustrated in his circular letters.

was used in an article in the Building Developer commenting on the fine arrangement of the bedroom on the first floor and the inclosed porch connecting the garage and house. This design is true Colonial and furnished in furniture of the same period.

Very truly yours,
PC:R PAUL COOK

—3—

March, 1930.

Dear Friend:

The photograph and floor plan of bungalow is a good example of an inexpensive home. This home can be arranged with an attic and is very attractively built in brick.

The two-story home is built of stone and stucco, has many desirable features and can be built at a fair price.

Very truly yours,
PC:R PAUL COOK

—4—

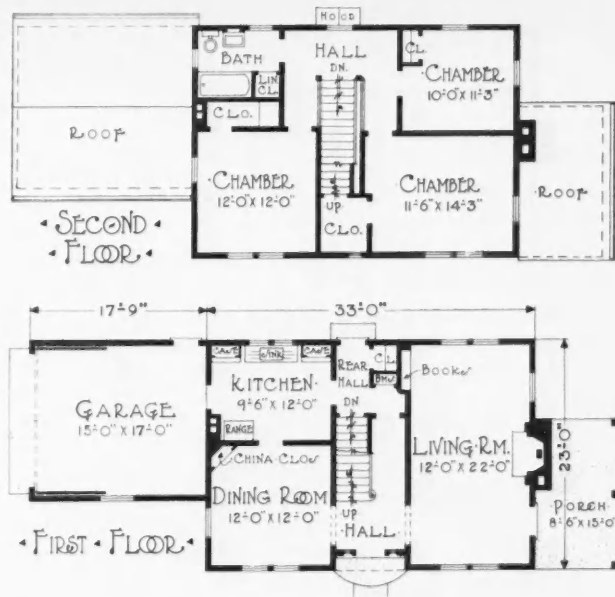
May, 1930.

Dear Friend:

Within this folder, you will find pictured two Colonial Homes.

A Colonial Home always is in style and looks up to date.

The home of John R. Gehrig, located on Miami Avenue, Terrace Park, has garage attached, room for two cars. This plan also has large attic. The house is painted white, with green shutters and brown roof.



The home of Frank A. Koch, located at 1258 Avon Drive, is built of wide siding and stucco, with green shingle roof. This home has the garage built in the basement. Note the fireplace in the second floor bedroom.

Let me help you design your home with the individual features you desire.

Very truly yours,
PC:R PAUL COOK

The plan that Mr. Cook has found so practical in securing new trade can be followed by other building contractors, but proper allowance must be made for local customs.

What Comprises A "100% Modern Kitchen"?

By FLORENCE J. STERLING

OPINIONS may differ, but there is a great deal of truth in the advice of a well-known Home Economics Counsellor who says: "Sell your women prospects on beauty and design in the kitchen."

Statistics shows that 85% of the average families enjoy 75% of their daily meals in the kitchen. It becomes essential for the wide-awake builder to keep pace with this day and generation. The builder must avail himself of modern methods, or is at the outset giving himself a handicap that scarcely the wit of a Mark Twain, or the genius of an Edison, or the ability of a Rockefeller can overcome.

Today's builder is forced to be up to date. The time has gone by when *past success* is considered an element of strength. In this day and age experience counts for far less than it formerly did. This is an age of new ideas, new equipment, rapid change.

Experience is not needed quite so much as is the courage to break away from old methods. In the recent past any old thing went in the kitchen. This room never was considered of much importance by the men. It usually was made from odds and ends or left-over space.

Today is yesterday's pupil. There is not one progressive builder that does not know the full value of a properly planned kitchen. More sincere effort is given to bring this one room as close to what a woman's ideal of what a real kitchen means, than ever before in a long period of erecting dwellings.

A dwelling might appeal strongly to a woman. However, if the kitchen disappoints her, the sale is never made.

The builder then carries his dwelling longer than originally expected, with the final result that his selling price does not hold the margin of profit to which he normally would be entitled. This is certainly not sound business.

Reproduced, for your guidance, are plans showing

kitchens as drawn by the architect, with revisions suggested by an experienced Designer of Kitchens. Note the changes. A careful comparison of the original and revised layouts demonstrates what a "properly designed kitchen" really means to your woman prospect. A carefully planned kitchen often helps cut construction costs.

For your benefit the following analysis is made of each feature that helps to complete a 100% Modern Kitchen.

Stove and Stove Pipes

It is always well to break down sales resistance at the start. Therefore, include a stove in your kitchen equipment. The prospective woman buyer does not have to worry about owning a right-hand oven stove, when the layout demands a left-hand oven stove.

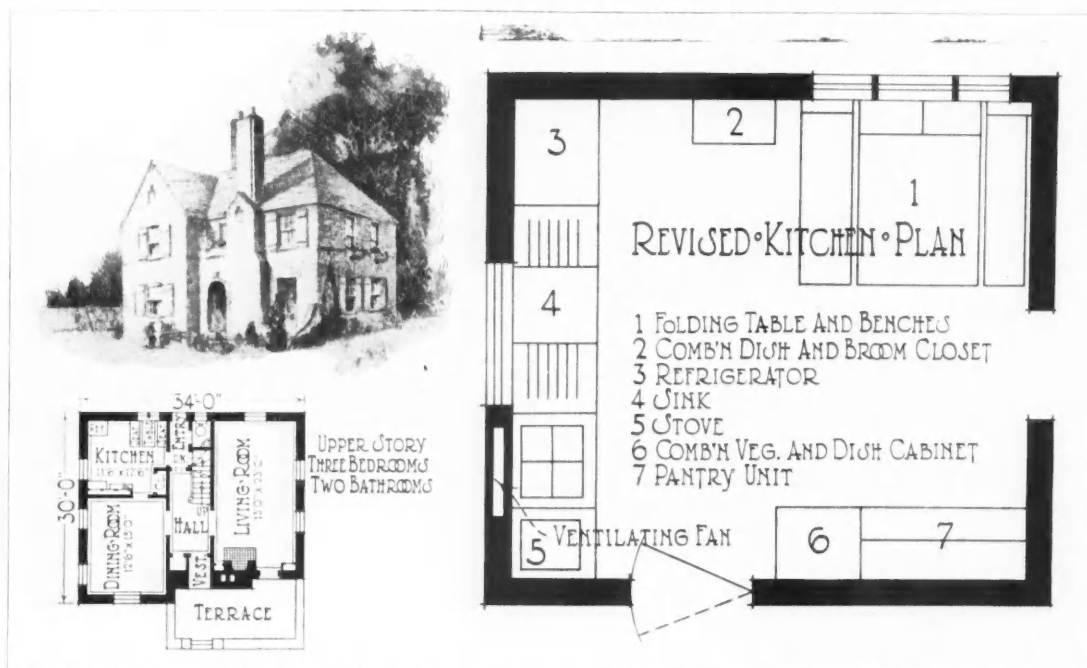
Through the use of a unique device called a deflector, the dust and grease collecting stove pipe can be eliminated, thus cutting down costs. This device fits over the collar of the vent pipe. It deflects grease, or combustion, onto the oven top, enabling the housewife to wipe it away easily. This device has the approval of the gas authorities.

Electric Ventilating Fan

Women tire of stuffy kitchens. They no longer put up with drafts caused by open doors and windows, in the colder weather. Hence the builders have been wise to fall in line and solve the problem.

Positive electrical ventilation is the one answer. It insures the entrance of fresh air and removal of "used air" at all times. It creates no drafts.

A popular electrical ventilator fan is the 12 inch multi-blade type, consisting of eleven blades. This fan is two-speed control and delivers about 800 cubic feet of air per minute. The cabinet is all steel, cast aluminum grille front, with solid shutter of aluminum that works automatically when the fan is in operation.



The Kitchen Layout as Originally Planned and as Rearranged by the Author.

A few women still prefer the pantry, but they are in the minority. A pantry costs money to provide and usually turns out to be a "catchall."

The majority of modern home managers want food-stuffs within easy reach. Tailormade cabinets, trademarked and advertised, carry a certain definite appeal to the home manager, that assists the builder in effecting a sale. So the line of kitchen cabinets, made up of a group of flexible units, designed to meet any and all requirements for food storage, have the lead.

Home managers universally agree that mechanical refrigeration is what they want. There are many good makes of these refrigerators available to the builder. When deciding upon the size of refrigerator, the builder should consider the number of persons his dwelling is to accommodate, and furnish the right amount of food storage space for perishable edibles.

Folding Breakfast Nook Furniture

This type of equipment has slowly but surely gained the lead over old-style table and chairs, or stationary breakfast nook sets.

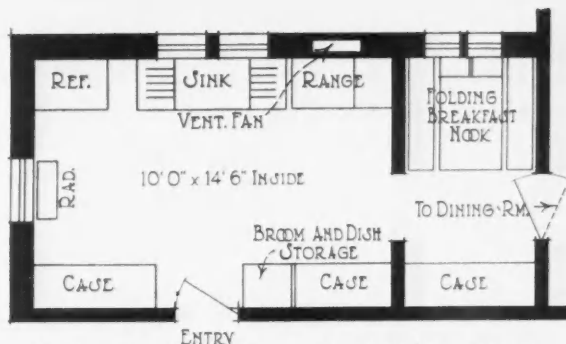
Home managers no longer care to have a table with chairs occupy the center of a kitchen floor, thus interfering with work in the kitchen. They demand the folding furniture that offers a table and seats, combined with storage space for china, silver and linens, because of the time and energy saved. Many steps are thus eliminated by concentrating, at one spot in the kitchen, the equipment used at meal time. Also, the fact that fifty or more square feet of floor space is easily cleared, and the kitchen given a "dressed up" appearance when work is done, means something to the average home manager.

Construction cost is increased where a room about 6 by 6 ft. is provided and dubbed "dining alcove." The folding breakfast nook furniture eliminates this one building construction cost, yet provides a cozy place for the daily meals, and permits valuable floor space to be utilized for needs other than just a place to dine.

A recent survey amongst home managers brought out that many like hardwood floors, covered with attractive hook rugs. The majority, however, preferred inlaid linoleum in cheerful color combinations.

The builder will have to follow the trend of preference as taken by the women in the neighborhood where his dwellings are erected.

From the foregoing you can appreciate why a kitchen, designed to minimize the expenditure of time and energy



Such a Kitchen Makes a Quick-Selling Home.

on the part of a busy home manager, attractively equipped to carry eye-appeal, planned so as to bring everything within convenient reach—plays a major part in that merchandising scheme called "Selling a Home."

To eliminate even one of the items mentioned before, immediately weakens the builder's statement: "This is a 100% efficient kitchen." It is false economy to cheapen the showroom of your dwelling. A home manager spends at least 75% of her daily time in the kitchen. Make this room the most cheerful spot in the house and save its presentation for the close of your sales talk!

When planning a home, talk the kitchen arrangement over with as many women as you can gain opinions from, before you start studding. You will thus save many dollars and insure less chance of disappointing a prospective woman buyer.

While we agree that cabinets on both sides of a sink present a fine appeal, we do not agree that such a setup is always the best arrangement for a properly balanced kitchen.

It will many times work out to better advantage, for the home manager, if the refrigerator, sink and stove be lined up along the outside wall. This permits for installation of the ventilating fan above the stove, where it belongs. The inside walls can be utilized for cabinets and dining equipment.

Homes that are built to order for the families employing help, require the right type of kitchen just as does the home built for the average family. A poorly equipped kitchen often makes it hard for the owner to keep help.

It is the builder's responsibility, therefore, to anticipate difficulties for the home owner and help overcome them before the building is out of a blueprint stage.

REVISED KITCHEN
9'9" x 15'0" - PANTRY OMITTED
1 WALL, DOOR AND ARCH OMITTED

1'0" ADDED TO DINING ROOM

- 1 FOLDING TABLE AND BENCHES
- 2 VEG. AND DISH CLOJET
- 3 REFRIGERATOR ANY SIZE
- 4 SINK OR DISHWASHER
- 5 STOVE
- 6 CASES
- 7 BROOM AND VAC. CLEANER

A Study of This Kitchen Showed Great Improvements Possible over Original.

Questions of Law Clearly Answered

Legal Rulings of Interest to All Builders

By LESLIE CHILDS

WHEN a building contractor enters into a contract for the performance of a given work, the terms of such contract will be binding upon him, unless changed or varied by consent of the owner. And many courts have taken the position that, so long as such a contract is subsisting, any promise on the part of the owner to pay additional compensation will be without consideration and not enforceable.

Needless to say, here is an important point for building contractors to have in mind whenever it becomes necessary to negotiate for additional payment, in the face of a subsisting contract. And, as an illustration of the application of the rule, and the danger to a contractor in overlooking it, the following recently decided case is squarely in point.

Agrees to Build House for Lump Sum

The plaintiff, a building contractor, entered into a written contract to build a house for the defendant, except the plumbing, electric wiring and roofing, for the sum of \$3,950. Plaintiff entered upon the work and after working several weeks discovered that he had greatly underbid, and that if he proceeded he would suffer a substantial loss which he estimated at \$1,000.

In this situation, the plaintiff decided that unless the defendant would agree to pay additional compensation he would abandon the contract, and take his loss up to that time. The plaintiff informed defendant of this decision and the defendant promised additional payment that would guarantee the plaintiff a fair profit, if the latter would continue and complete the house.

Now at this point it should be noted that this promise of the defendant was oral, and not made as a change or modification of the written contract. In fact, under it the original contract was not referred to but remained the same. Further, the plaintiff did not assume any additional obligation as a consideration for the promise of the additional payment.

Acting under this promise the plaintiff continued with the work, receiving payments on account as the work progressed, until the work was completed. At this time, it appears, defendant had paid plaintiff the full written contract price of \$3,950. When plaintiff rendered his bill for an additional sum of about \$2,000, which he claimed to be due under the oral promise of defendant, the latter refused to pay on the ground that this promise was without consideration.

The plaintiff thereupon filed suit in an attempt to enforce payment of his claim. Upon the trial of the case the trial court found for plaintiff in the sum of \$2,100 and rendered judgment accordingly. From this the defendant appealed, and the higher court in reversing this judgment and rendering judgment for defendant said:

What the Court Decided

"While there is some authority to the contrary, . . . the great weight of authority seems to establish as the general rule the proposition that a promise to do that which a party is already legally bound to do is not a

sufficient consideration to support a promise by the other party to the contract to give the former an additional compensation or benefit, and such a promise cannot be legally enforced although the other party has completed his contract in reliance upon it. . . .

"From the plaintiff's own testimony, it appears merely that after having spent several weeks in the prosecution of the work which he had contracted to do, he discovered that the completion of the contract would require more money than he had calculated upon and that he had made a losing contract. He admitted that, at the time the promise of additional compensation was made by the defendant, he was under obligation to complete the building for the contract price of \$3,950, and as to the payment in full of this contract price there is no real conflict in the testimony.

"By this oral contract the plaintiff assumed no obligations or burdens other than those already imposed by the written contract. At the time the alleged oral promise was made, he was obligated to perform under the original contract, and he had merely notified the defendant . . . that he did not have the money to carry the job through under the written contract, . . .

"It is undoubtedly true that the parties to a contract may modify it, or waive their right under it, and ingraft new terms upon it, and in such case the promise of one party will be sufficient consideration for the promise of the other. But where the promise of one is merely a repetition of a subsisting legal promise, and the duties, obligations, and burdens imposed upon such party by the contract are in no way varied, altered, or changed, there is no consideration for the promise of the other. Such is the case made by the plaintiff's proof, and therefore the alleged promise of defendant was without consideration. . . . Therefore the judgment of the court below will be reversed and judgment entered here for the defendant." (124 So. 472)

To Sum Up

In the light of the facts and holding of the foregoing case, it is obvious that a building contractor should exercise great care in proceeding with work, that he is already obligated to do under a written contract, in reliance upon an oral promise of the owner to make additional payment not called for by the contract. For, while in some states the courts are more liberal in allowing a contractor to recover under these circumstances than in others, the holding announced in the case reviewed appears to follow the weight of authority.

It follows, a contractor should be very sure of his ground in cases of this kind. Of course, if the first contract is breached, or the promise of additional payment is clearly made a part thereof, so that in fact a new contract is entered into, well and good, and the contractor will have the right to enforce the new promise. But to merely rely upon a bare promise of additional payment, as in the case reviewed, may prove a risky business for the contractor and result in substantial loss in case the owner refuses to make good on his promise.



New Beauty for the Garage

Made possible by Crawford Overhead Doors!

Here's the biggest sales opportunity in the building field today! A practical, high-quality overhead type garage door at sensationally low cost.

The standard design Crawford Overhead Door is available at only \$39.50 f. o. b. factory, complete with hardware, less lock. You can now sell this most popular type of door for either high or low-priced garages.

Patented One-Piece Overhead Door

By use of the patented Crawford Overhead Hardware any pair of garage doors can be installed *in one piece!* In opening, the door lifts *straight up* 2 inches to clear

ice and snow, then rolls smoothly overhead. Simple, rugged, silent, weather-tight.

At low cost, separate Crawford Overhead Hardware will convert present hinged doors into modern overheads.

Beautiful Designs

Crawford Overhead Doors are available in a variety of artistic designs . . . all No. 1 Pine . . . "Paine" quality.

Worth Investigating

Here's a new opportunity to combine beauty and economy in garage construction. For further details, see your lumber dealer or mail coupon.



Less than 4 inches headroom required. Easily installed by one man.

CRAWFORD OVERHEAD DOORS

Made by Crawford Door Co., Detroit, Mich.

Distributed through Lumber Dealers East of Rockies by
PAINE LUMBER COMPANY, LIMITED

Oshkosh, Wisconsin

Paine Lumber Co., Ltd.,
Oshkosh, Wisconsin.

Please send me complete information on the new Crawford Overhead Door.

Name

Address

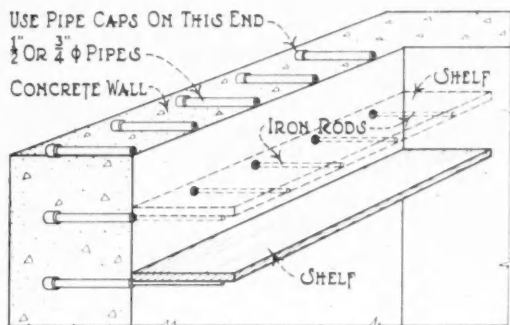
Architect Lumber Dealer Builder Prospective Owner

A-1

Practical Job Pointers

Provide for Shelving

WHEN building a new home, the owner often wants shelving placed in the basement. This is provided for very easily and satisfactorily when building the concrete basement wall. The way I handle it is to place pieces of iron pipe in horizontal rows, in the form before the concrete is poured. These are so placed that the inside ends are flush with the finished, inside surface of the wall, but do not extend entirely through the wall.



Iron Pipes Embedded in Concrete Walls Provide Shelf Supports.

The pipe should be 1/2 or 3/4-inch size. It is well to screw pipe caps on the ends that are embedded in the concrete. Pins, made of iron rod, are placed in the holes so provided to support the shelving and if the pipes are placed close enough there will be no sagging of the shelves. When the shelves are not needed the pins can be pulled out of the pipe holes leaving the wall surface clear.

B. G. SNELTING, 720 Prairie St., St. Charles, Ill.

For Cutting Spring Moulding

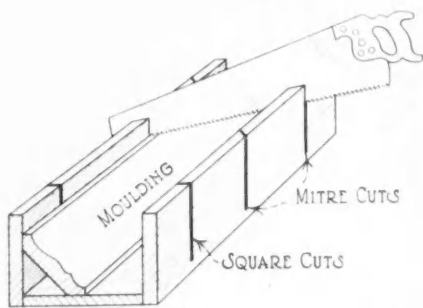


FIG. 1

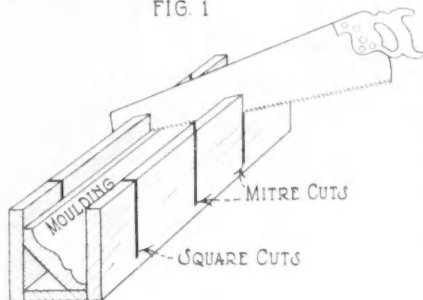


FIG. 2

The Narrow Mitre Box Is Better for Spring Moulding.

THE ordinary mitre box does not work well, in cutting spring moulding. When the moulding is placed in the box, as shown in figure 1 in the sketch, it is very difficult to hold in place and is likely to twist, cause the saw to bind, and spoil the cut.

A narrow mitre box, as shown in figure 2, is a great improvement. In such a box the moulding fits snugly and will not shift as long as you lay your thumb over it, holding the box steady with your hand.

JOSEPH J. ZAR, Olyphant, Pa.

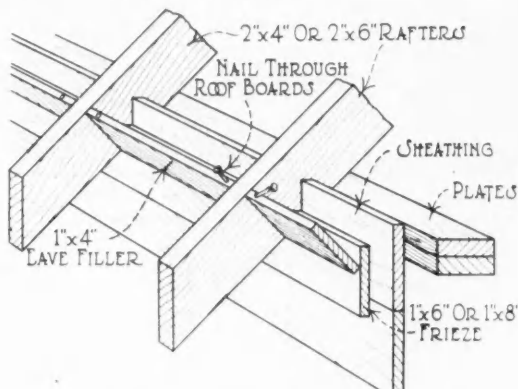
A Readers' Exchange of Tested Ideas and Methods, Taken from Their Own Building Experience. Two Dollars Will Be Paid for Each Contribution Published in This Department.

An Air-tight Open Cornice

AM going to pass along an idea for making an open cornice air-tight. Take a piece of 1 by 8 or 1 by 6 and notch it to receive the rafters, about 3/4 to 1 inch deep. Push this piece up under the rafters so that the notches fit tight against the rafters.

Now take a 1 by 4 or 1 by 6 piece, according to the width of the rafters, and fit it in tight between the rafters and the lower edge, outside the frieze board, but flush with the rafter underneath. This makes an overlap and a tight job.

The last mentioned pieces are put in square across the rafters and not plumb with the building. This makes it possible to use pieces the same width as the rafter, saving lumber and making a neat job.



This Construction Makes an Air-Tight Open Cornice Job.

By nailing the eave filler square with the rafter it is easier to get a good paint job. Where there is a wide cornice and steep pitch, the old method of nailing the filler plumb makes a difficult paint job.

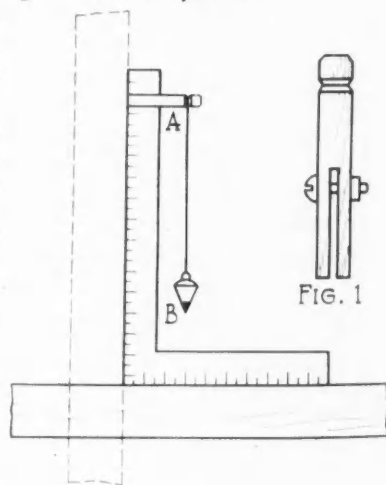
R. T. GRAVROK, Vermillion, S. D.

Leveling with a Square

TO level with a square, fasten a clamp (shown in figure 1) to a vertical arm and attach a plumb bob to the clamp. When the distance between the string and the vertical arm, at the point B, is equal to the distance between the string and the vertical arm at the point A, the surface on which the lower arm rests is level.

To plumb with a square, fasten the clamp the same way as in leveling and attach the bob. Then set the arm on which the clamp is fastened against the object to be plumbed.

JAKE VANDERMEULEN, Berwyn P. O., Route 1, Box 113, Stickney, Ill.



A Square and Bob Serve to Level or Plumb.

click!

the sill and jambs lock together
..rigid..leakproof!

*New Andersen Frames
give you a better job
with lower labor cost*

OBSERVE how simple and easy it is to lock the sill and jambs together with this new Andersen invention, the famous locked sill-joint. Slide the jamb dados into the sill dados—click—and the frame is locked . . . rigid . . . leakproof. This patented construction has all the advantages of both the jamb dadoed and sill dadoed frame, with none of the disadvantages.

Learn about the locked sill-joint construction and the many other patented weathertight features developed by Andersen engineers and found only in the new Andersen Master Frame. These features will enable you to save more time, earn greater profits and build better jobs.

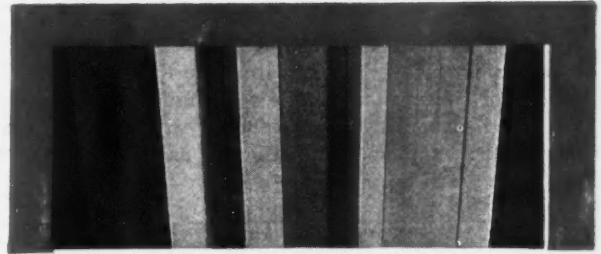
Andersen Master Frames are made in stock sizes to fit any size opening in any type of construction. They are furnished in Genuine White Pine or in Pongosa Pine, with important joints primed.

Ask your dealer for a free demonstration of these new leakproof frames . . . or write direct to The Andersen Frame Corporation, Bayport, Minnesota.

Andersen

MASTER

Frames



Photograph showing sill and jamb dados before joint is closed.

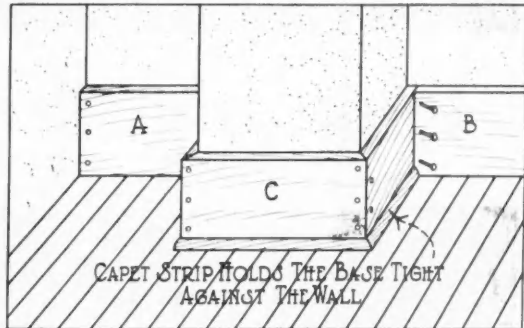


Click! Sill and jamb lock together—rigid, leakproof.

for a leakproof installation

Nailing Base Around Chimney

NAILING baseboard into a chimney is a nuisance to the carpenter as he is likely to strike the brick with his nails, instead of the mortar joint several times, wasting time and nails, and disfiguring the baseboard with holes. If the base around the chimney is mitred and nailed as shown in the sketch this will be avoided.



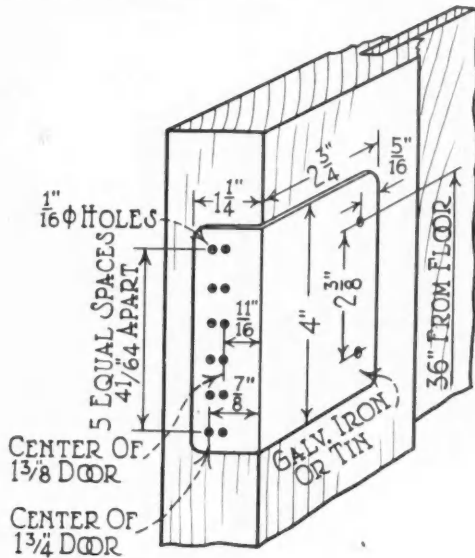
This Is Quicker, Easier and Better Than Nailing the Base to the Chimney.

Simply nail three pieces of baseboard together, with mitred corners, place the form around the chimney and nail the pieces of baseboard, marked A and B in the sketch, tightly against it. Driving the nails as shown hold the base around the chimney in place. Nailing into the mortar does not hold well and is no better.

JOSEPH J. ZAR, Olyphant, Pa.

For Mortising Locks

THE sketch shows a device that I have used for several years for laying out holes to mortise lock in house doors. This is a small template which is held against the corner of the door so that the hole for the knob is 36 inches from the floor. With an awl make a small mark in these holes to locate the knob and key holes.



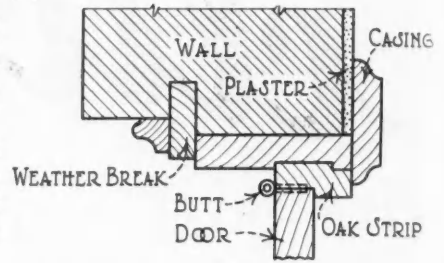
This Simple Template Is a Great Help in Fitting Door Locks.

For a 1 3/8-inch door mark the location of the six holes in the row marked "Center of 1 3/8" Door." For a 1 3/4-inch door use the holes in row marked "Center of 1 3/4" Door." This will give you a row of holes down the exact center of the door and in their proper relation to the knob and key hole.

Bore all holes with an 1/8-inch or 3/4-inch bit and mortise out as usual. ARNOLD FUOG, 2531 N. Francisco Ave., Chicago.

Recessed Outside Doors

FOR the sake of appearance, and as a protection to the door, it is often desirable to use a form of construction that will permit an outswinging door, or pair of doors, to be hung as deeply in the doorway as possible.



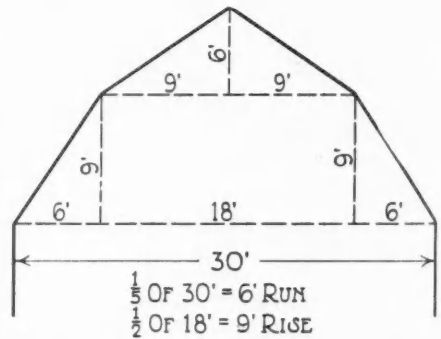
Outswinging Doors Can Be Recessed in This Way to Advantage.

This recessing of the door adds to the appearance of any entrance and often provides enough depth to afford some shelter to a person waiting to enter in rainy weather. Then too the door is more protected against the effects of rain and sun. The sketch shows how such a recessing job can be handled.

OLAF BROSTROM, 3725 Valentine Road, Kansas City, Mo.

Gambrel Roof Proportions

HERE is a rule for producing a correctly proportioned gambrel roof. Set the purlin posts in from the outer wall one-fifth the width of the building. Make them as high as half the distance between them.



This Method Will Produce a Well Proportioned Gambrel Roof.

Reverse these measurements for the top span. This makes both top and bottom rafters the same length, except for any projection that may be added at the eaves, the sketch shows just how these measurements are used.

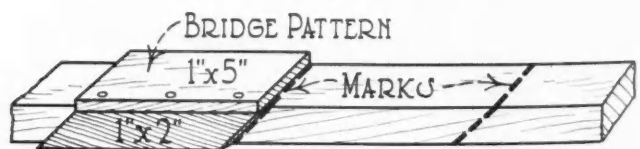
ARNOLD E. MILLER, Agosta, Ohio.

A Pattern for Bridging

WHEN you have a considerable amount of bridging to cut, you will save time and get a better job by using a pattern such as shown in the sketch. All you need is a piece of 1 by 5 material the length of the bridging, and a piece of 1 by 2 material cut with the correct bevel for the bridging at each end and with sides the length of the bridging.

The 1 by 2 piece is nailed to the 1 by 5, and this pattern is merely laid on the 2 by 4 bridging material. Saw along the bevel of the pattern and you get correct fitting bridging. Just slide the pattern along as each piece is cut.

JOSEPH J. ZAR, Olyphant, Pa.



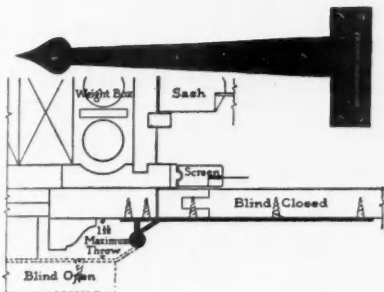
A Simple Pattern Which Speeds Up the Cutting of Bridging.

HARDWARE FOR THE HOME BUILDER

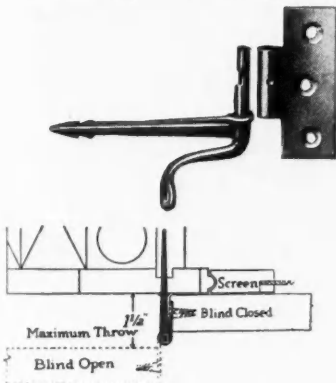
Stanley Blind Hardware Meets Any Contract Requirement

The full line of Stanley Blind Hardware includes hinges, fasteners and turnbuckles to fit every type of construction.

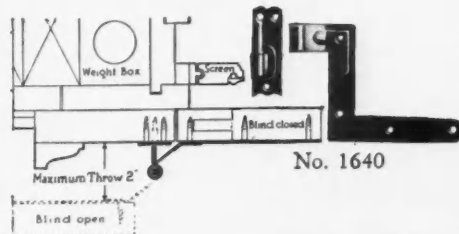
Hinges are made in several patterns and offsets to fulfill the varying demands of frame and brick construction.



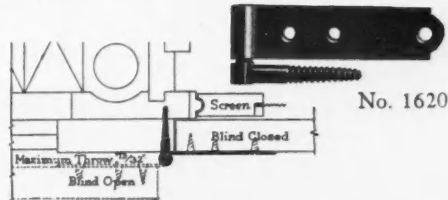
No. 940 For Frame Construction
For use on blinds hung flush with the casing. The strap of the hinge extends across the joints of the blind, giving it added strength. Can be furnished for blinds hung outside the casing.



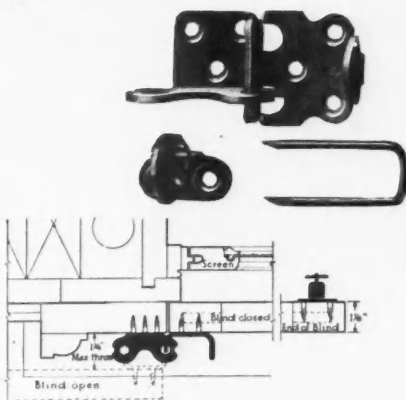
No. 1606
For blinds hung on the outside of the casing. Constructed with a safety feature so that the blinds cannot be blown off.



No. 1640



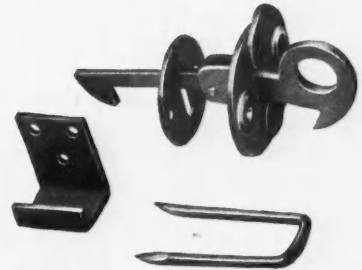
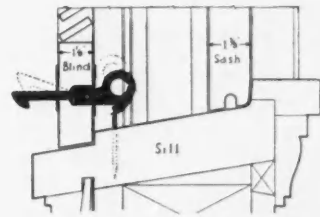
No. 1620



No. 1647 1/2

Gravity Hinge Blinds cannot be removed except when opened wide. Hinges are reversible and automatically hold the blinds open.

You have a choice of many fasteners to securely hold blinds open or closed



No. 1682
For Frame Construction
Gravity type fastener. Blinds cannot be unlocked from the outside when closed.

Shutter Turnbuckles

For holding blinds open on frame, brick or stucco construction. Reversible for right and left hand. Both patterns made in three styles.



No. 1685
with lag screw



No. 1694
with back plate



No. 1685 1/2
With non-rattling device. Blind fits between the "S" hook and the phosphor bronze spring. Tension holds the blind rigid and prevents rattling.



No. 1695
with drive pin

Should you have a difficult Blind Hardware problem send us the details so that we may suggest how to solve it.

THE STANLEY WORKS
New Britain, Conn.



STANLEY HARDWARE

Building Activities

The Month's News of the Industry

Costs Are Down

THE cost of remodeling and modernizing work and general improvements both inside and outside of the house shows decided price declines from last year, according to the latest findings in the general survey of commodity prices now being made by the Marine Midland group of eighteen New York State banks.

Taking seven typical improvements as standard for comparison, costs in every instance show a saving as compared with last year's costs, ranging from 10 per cent to 32 per cent. These figures represent an accurate check of today's values with those of 1929, with all the estimates based on actual figures obtained from plumbing, painting, and electrical contractors, and carpenters. The estimates in each case include labor.

	Cost Today	Cost 1929	Approx. % Saved
Steam Heating Plant..... (Including new boiler, radiator, fittings.)	\$375	\$450	17%
Redecorating Living Room.. (Including painting and papering.)	85	125	32%
Painting..... (Outside of house, two coats.)	200	270	26%
Driveway..... (Concrete 4 inches deep, 100 feet long, 7 feet wide.)	\$125	\$155	19%
Bathroom..... (Including new washstand, bathtub, lavatory, tile floor, painting and electric fixtures.)	450	500	10%
Garage..... (Two-car, novelty siding, wood shingles, including painting.)	227	269	16%
Sun Porch..... (8 feet by 13 feet including foundation, painting, lighting and heating.)	615	700	12%

To Settle Disputes

A JOINT conference, composed of representatives of the Building Trades Department of the American Federation of Labor, and the National Association of Building Trades Employers, has recently agreed to establish a board of arbitration to settle jurisdictional disputes. The ratification of the agreement by the individual unions and employers' associations is regarded as a formality which will be completed quickly and permit this new organization to start functioning immediately.

Previous attempts to set up a national board of trade claims have not been successful. The new board seems to differ from preceding attempts in that it has compulsory jurisdiction over all such controversies and its findings are not to be subject to further dispute.

Coming Events

- Jan. 12-16, 1931 — American Road Builders' Association, St. Louis.
- Jan. 13-15, 1931—Ohio Association of Retail Lumber Dealers, Annual, Cleveland Auditorium.
- Jan. 14-15, 1931—Retail Lumber Dealers Association of Indiana. Annual, Claypool, Indianapolis.
- Jan. 15-17, 1931—National Association of Real Estate Boards, Mid-winter Meeting, St. Petersburg, Fla.
- Jan. 15-17, 1931 — Mountain States Lumber Dealers Association, Annual, Broadmoor, Colorado Springs.
- Jan. 20-22, 1931—Northwestern Lumbermen's Association, Annual, Minneapolis Auditorium.
- Jan. 21-23, 1931—Pennsylvania Lumbermen's Association, Annual, Bellevue Stratford, Philadelphia.
- Jan. 22, 1931—New Jersey Lumbermen's Association, Annual, Robert Treat Hotel, Newark.
- Jan. 22-23, 1931—Carolina Retail Lumber & Building Material Dealers' Association, Annual, Charlotte Hotel, Charlotte.
- Jan. 27-29, 1931—Northeastern Retail Lumbermen's Association, Annual, Hotel Pennsylvania, New York.
- Jan. 28-29, 1931—Tennessee Lumber, Millwork & Supply Dealers' Association, Annual, Hotel Noel, Nashville.
- Jan. 28-30, 1931—Southwestern Lumbermen's Association, Annual, The Forum, Wichita, Kan.
- Feb. 3-5, 1931—Iowa Lumber & Material Dealers' Association, Annual, Coliseum, Des Moines.
- Feb. 4-6, 1931—Michigan Retail Lumber Dealers Association, Annual, Hotel Book-Cadillac, Detroit.
- Feb. 10-12, 1931—Illinois Lumber & Material Dealers Association, Annual, Hotel Stevens, Chicago.

Westinghouse Appointments

THE Westinghouse Electric Elevator Company has announced the appointment of Joseph U. Douglass as northeastern district manager, with D. W. Hughes as his assistant. Mr. Douglass is replacing Ridgway F. Moon, who has resigned to become vice-president of Hoggson Bros., bank designers and builders. Walker G. White, who has been with the Westinghouse organization since 1922, will become New York manager.

Prepare Elevator Code

A NEW conception of vertical transportation expected to remove one of the principal obstacles to the erection of buildings 100 stories and more in height, is contained in the report of the Subcommittee on Elevators of the Merchants' Association's Committee on the revision of the New York Building Code.

In the proposed code the 700 feet per minute speed limit of the present code, is raised to 1,200 feet per minute, or between 13 and 14 miles per hour. Because people can sleep without discomfort at speed of nearly 6,000 feet per minute on trains, it was decided that 1,200 per minute in elevators would not be uncomfortable.

Another contemplated change would provide for installation of two-story passenger elevators which would double the number of passengers that could be carried. Still another contemplated change is the operation of two individual cars in the same shaft with automatic safety devices.

All of these changes would, by increasing elevator carrying capacity, reduce the amount of elevator space required for the taller buildings which, under the present code, becomes excessive and uneconomical above certain levels.

Make Vacancy Surveys

DURING the past year, real estate boards in 71 typical cities have made detailed surveys of building vacancy in their cities. These surveys show the percentage of occupancy and vacancy for buildings of various types. The purpose was to determine in what types of building the market is well supplied, and in what types a shortage exists.

In a number of these cities the surveys were made through the co-operation of the post master. Actual counts of vacancy were made by the postmen on their mail delivery trips, the reports were turned over to the real estate boards for tabulation.

About 25 per cent of the cities reporting show a vacancy in residential property of three per cent or under. Assuming the low replacement factor of two per cent and a normal increase in population in these communities, there is reason to expect a normal construction program in residential building.

Appoint Representative

THE Porter-Cable-Hutchinson Corp., Syracuse, N. Y., has announced the appointment of P. W. Egbert, 42 11th St., Toledo, Ohio, as its district representative on woodworking machines.



UNUSUAL PLASTICITY

UNLESS the bricklayer is given good, rich, mortar, he cannot do quick, neat, economical brickwork. One part Brixment, three parts sand, makes a mortar plastic like a straight lime mix and strong as the brick itself.

It is unusually easy to spread, and when the bricklayer throws up a head-joint, the mortar sticks to the brick. Louisville Cement Company, Incorporated, Louisville, Kentucky.

CEMENT MANUFACTURERS SINCE 1830

Mills: Brixment, N. Y. and Speed, Indiana

BRIXMENT

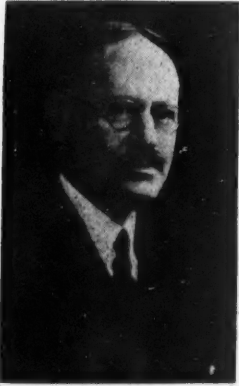
for MASONRY and STUCCO



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

New A.G.C. Officers

NOMINATION of Albert P. Greensfelder, of St. Louis, and William A. Starrett, of New York, as president and vice-president at large, respectively, of the Associated General



Albert P. Greensfelder.



Col. Wm. A. Starrett.

Contractors of America, for the year 1931, was announced following a special meeting of the nominating committee. These nominations, which are tantamount to election, will be officially acted on at the association's annual convention, to be held during the week of January 25, at San Francisco.

Ilg President Is Honored

J. M. FRANK, president of the Ilg Electric Ventilating Co., Chicago, was elected president of the National Association of Fan Manufacturers, which comprises more than 80 per cent of the ventilating fan and blower industry, at the association's annual meeting, recently.

Chain Belt Personnel

AN announcement from C. R. Messenger, president of the Chain Belt Company, of Milwaukee, Wis., calls attention to the following changes in the company's executive personnel:

C. F. Messenger, vice-president, has been elected general manager; H. S. Greene succeeds Mr. Messenger as general sales manager; Brinton Welser, formerly secretary, has been

CURRENT CONSTRUCTION FIGURES

CONSTRUCTION contract figures for the month of November made a poor showing, being lower than for any November since 1920. The November total of \$278,931,070, was a decline of 24.2 per cent from October, and a decline of 38.6 per cent from November, 1929. This total was divided among the various classes of construction as follows:

Residential	\$88,860,090
Commercial	34,109,460
Industrial	17,764,120
Educational	32,480,690
Hospitals and Institutions	7,630,480
Public Buildings	5,763,670
Religious and Memorial..	5,570,400
Social and Recreational..	7,886,780
Public Works and Utilities	78,865,380

\$278,931,070

These figures are for contracts awarded in 37 states, as reported by the F. W. Dodge Corporation, plus an estimate for the West Coast and Mountain States, which are not covered by the Dodge reports. In addition to the above reported contracts, there was, as always, a large amount of work in outlying and rural districts,

and contracts for less than \$5,000, which Dodge reports do not cover, which amount to about 24 per cent in addition to the amount shown.

One encouraging factor appears in these contract figures. While the contracts for public works and utilities accounted for 32 per cent of the total in October, this item was only 28 per cent of the November total. The decline in November from October, in building construction amounted to only 19 per cent as contrasted with 24 per cent for all construction.

During most of 1930 the total construction figures have been greatly swelled by public works and utilities contracts which, as a result of concerted efforts to maintain employment, have run ahead of previous figures. Actual building construction is now more nearly approaching its normal proportion of the total.

It has also been noted, in surveys of vacancies, in various typical cities, that residential vacancies are normal or below normal, indicating a need for residential construction which must be met before long and which should be felt when the spring building season opens up.

elected director and vice-president; J. C. Merwin has been re-elected vice-president; A. R. Abelt has been elected secretary and continues in charge of chain sales; W. H. Brandt, formerly assistant secretary, has been made assistant to the president.

Reading Iron Personnel

THE directors of the Reading Iron Company, Baer Bldg., Reading, Pa., have announced the election of P. N. Guthrie, Jr., to the presidency of the company, to assume office immediately, with headquarters at Reading.

It was also announced that A. M. Cullum had resigned as Oil Country sales manager of the company, with headquarters at Tulsa, Okla., to accept

a position with the Harbison & Walker Refractories Co., Pittsburgh, Pa.

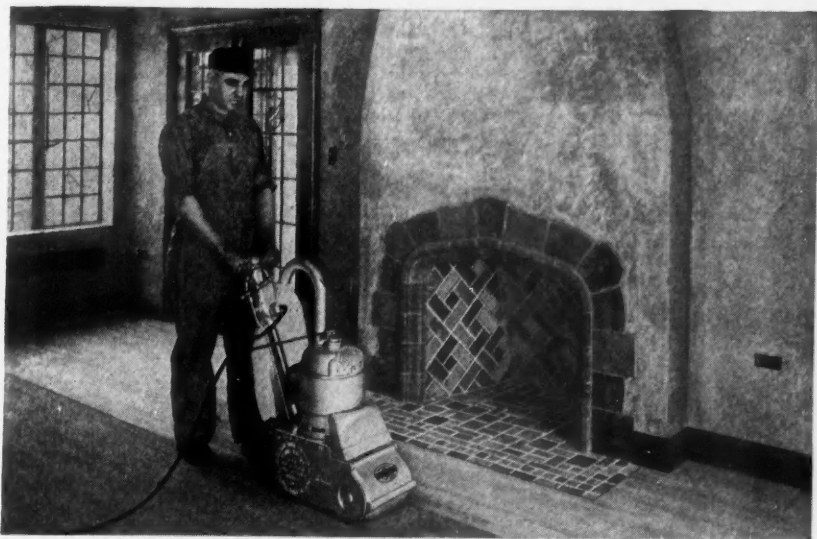
Build Largest Service Store

GROUND has been broken for the largest automobile service store in the United States, according to an announcement made by Harvey S. Firestone, president of the Firestone Tire & Rubber Co. This store, which is expected to be open for service about April 15, 1931, will cover approximately one and half acres of ground and, with four stories and a basement, will provide more than 80,000 square feet of floor space. The building will be of reinforced concrete, with brick and stone trim, and glass doors. It is located in Detroit.



New Automobile Service Store of the Firestone Tire & Rubber Co., at Detroit, Which Will Be the Country's Largest.

MAKE BIG MONEY



The American Method of floor finishing

Here is a new, sure and fast way of making big money. The new American electric floor finishing machines are so much better and so much faster that the new "American Method" is revolutionizing the floor industry.

Here is your chance to get into something for yourself and make the big money you have been looking for—to be your own boss—to quit worrying about your job and to get ahead in the world.

The New American Method opens up a tremendous field

In addition to smoothing up and sanding newly laid floors and the resurfacing of old floors—the new "American Method" enables you to wax, polish and finish complete any old or newly laid floor. There are hundreds of old floors that need resurfacing and refinishing in every locality, while there are many more that simply need waxing and polishing. With this dual system of either resurfacing or waxing and polishing there is no end to the work.

Keeps the Money Rolling in the year 'round

Floor finishing is nice, easy and pleasant inside work out of the weather and cold. The "American Method" profits are big. There are scores of jobs right now all around you. Office buildings, stores, schools, colleges, clubs, hospitals, churches, apartments, dance halls, roller rinks, bowling alleys, auditoriums, banks, hotels, and hundreds of residences all have floors that are being worn day in and day out by being constantly walked upon, which gives you more work than you could do once you get into the "American Method" business.

We help you get the business

A complete set of advertising material, post cards, folders, business cards, with your name and address, makes it easy for you to get plenty of work. This is a tried and proven plan that's bound to get the work. Every floor you refinish so delights the customer that you get several more from their friends.

No experience required

American machines are so simple in their construction, so easy to operate, and our instructions so thorough that the most inexperienced can get entirely satisfactory results right from the start. Simply connect the cord to the electrical connection, turn on the switch, guide the machine like you would a vacuum cleaner, and that's all there is to it. Let us show you pictures of boys from 14 years of age to men 74 years old running these machines.

We will back you

If you're honest and not afraid to put on a pair of overalls, you won't need much money to get started. We will back you, work with you and give you plenty of time to pay for the equipment. We've helped hundreds get started, seen them succeed, and there's no reason why anyone not afraid of work can't make the "American Method" of floor finishing a big success in their community.

C. H. Jimison of West Virginia averages \$25.00 a day; Parsons of Kansas making \$20.00 a day; Parr over in Iowa making \$24.00 a day; Turcott in Mississippi over \$400.00 in one month; and many others. Let us tell you of Cunningham in Detroit starting with one machine and now keeps a dozen machines going—Also big increases of others.

Building Contractors take notice

If you're becoming sick and tired of waiting for something to break in the building line—why not become an "American Method" floor finishing contractor and start right in resurfacing old floors and waxing and polishing others. There are hundreds all around you and you'll make more money in a month in this line than you'll make a year in the building game.

Get the facts

Get the facts NOW. Don't turn over this page before you tear off the coupon below and mail it in. It costs nothing to investigate and there's no obligation. Here's a chance to get into something for yourself, to be your own boss, and to make more money than any job could possibly pay you.

Don't throw your chance away, but tear off the coupon and mail it right NOW.

The American Floor Surfacing Machine Company

511 South St. Clair Street, Toledo, Ohio

COUPON



American Waxing and Polishing Machine

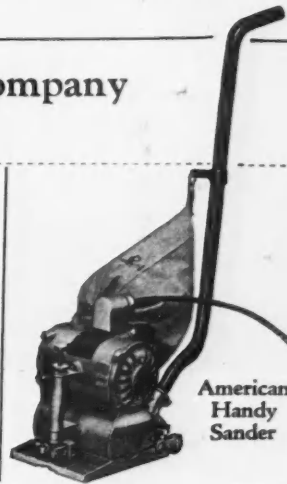
American Floor Surfacing Machine Co.,
511 S. St. Clair St., Toledo, Ohio.

Gentlemen:—Send me without obligation your complete plan for starting in business with your machines.

Name

Street

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



American Handy Sander

Study Seasonal Employment

A SURVEY of seasonal employment in the building trades has recently been completed by the Seasonal Operations Committee of the New York Building Congress, for the purpose of comparison with a similar survey made in 1922, to determine the effect of efforts made during the intervening years to level the curve of employment.

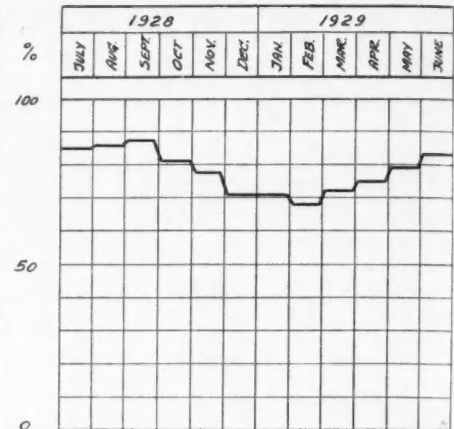
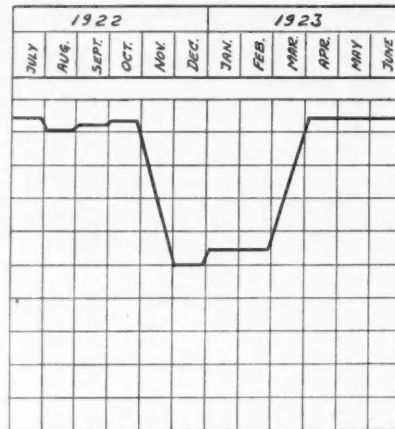
The surveys were conducted by individual trades. The composite curve of employment obtained in the first survey showed a variation in employment of about 45 per cent between the summer and winter months. The last survey covered the period July 1, 1928, to June 30, 1929, as data obtained on any later period would have been affected by the abnormal conditions resulting from the depression.

The curve for the 1928-1929 period shows a variation of approximately 20 per cent. This is a distinct improvement but shows the need for still further efforts along the same line. This is further emphasized by the statement that the variation was much greater in some trades than in others, several being as high as 50 per cent.

Complete Floor Finishing

THE American Floor Surfacing Machine Company, of Toledo, Ohio, has recently started a campaign to make floor finishing contractors of floor surfacing contractors and, thereby, increase the profits for these contractors. This company has brought out a maintenance machine for waxing and polishing floors, to round out the equipment of the contractors.

Floor surfacing contractors who have, in the past, handled the surfacing only, on both new and old



Comparative Composite Curves for Seasonal Unemployment in the Building Trades, for 1922-3 and 1928-9.

floors, turning the finishing over to some one else, can now equip themselves with this new machine and take a double profit, on surfacing and also on finishing.

Will Not Cut Wages

FOLLOWING a joint meeting of building trades representatives and building employers, held in the Builders Club, Chicago, E. M. Craig, executive secretary of the Building Construction Employers' Association, announced that Chicago builders do not contemplate a reduction of wages as a solution of the business depression.

"American builders today are striving to stimulate construction," said Oscar W. Rosenthal, head of the builders' association, "and this is not to be accomplished by reducing wages and cutting the purchasing power of the large unit of craftsmen who hold a strategic position in the composite makeup in the industrial life of the nation.

"Labor today is at a peak of efficiency, material prices are low, and these two important factors should prove an economic incentive for persons to build now. American prosperity can be attributed to well paid men and women of toil. To grasp this low ebb of business as a means to reduce wages would not be conducive to the welfare of the nation. Such action would retard and not stimulate business."

To Plant 250,000 Trees

OVER a quarter of a million walnut trees are being planted, in Lake County, Ind., and Cook County, Ill., as a result of an offer made by Frank S. Betz, of Hammond, Ind., to provide as many tested walnuts for seed as there were walnut seedlings planted by all the state nurseries of the country last year. These walnuts are being planted by school children and Boy Scout and Girl Scout organizations.

Mr. Betz, a wealthy, retired, business man, has won a prominent place during the past few years as a practical exponent of reforestation. About five years ago he bought a farm near Hobart, Ind., and has since been devoting his farm and his own time to the raising of all kinds of trees from seed. Up to the present time he has sent out over 62,500,000 tree seed which have been planted by over 400,000 school children of the country. His latest offer of walnut seed will probably mean over \$750,000 added to the wealth of the state, according to the Division of Forestry, of the Indiana Department of Conservation.

Aluminum Paint

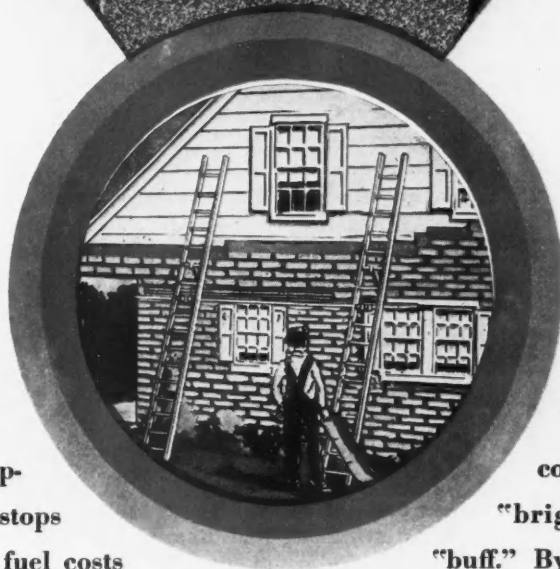
"Aluminum Paint in the Protection of Wood," is the title of a new booklet prepared by the Research Laboratory staff of the Aluminum Company of America, Pittsburgh, Pa.



Factory Branch Managers of the American Floor Surfacing Machine Co.; with Wm. B. Frey, President, Seated, to Right, and H. H. Wolfe, Standing, at Extreme Left.



BRICK-STYLE SIDING - A WINTER PROFIT-MAKER



Keep your men busy with this winter profit-maker—Brick-style Siding. This home improvement product has outstanding sales features that appeal to property owners. It stops paint bills forever. It reduces fuel costs drastically. It gives property owners a beautiful, weather-tight, durable siding at only a trifle additional cost over paint.

Brick-style Siding is easy to apply. It is self-aligning, and is especially designed so that there is a thick layer of asphalt felt behind each butt. Strips are 36 in. long, reducing application costs to the minimum.

The double coated, heavy slated, exposed butts have the appearance of deeply recessed bricks in true brick size. The colors are a rich "red," a radiant "bright red," and a handsome "buff." By combining these colors you get an attractive tapestry effect.

The market for Brick-style Siding is gigantic. Every owner of a frame building that is weather-worn is your prospect. See samples. Get descriptive literature and full particulars how to get this business. Address and mail your letter to the nearest office listed below. It will have prompt attention.

The RUBEROID Co.

ROOFING MANUFACTURERS FOR OVER FORTY YEARS

Sales Divisions: RUBEROID MILLS—CONTINENTAL ROOFING MILLS
SAFEPAK MILLS—H. F. WATSON MILLS—ETERNIT

← ASPHALT SHINGLES AND ROLL ROOFINGS—ASBESTOS-CEMENT SHINGLES AND CORRUGATED SHEETS—ASBESTOS, ASPHALT, COAL TAR PITCH AND FELT BUILT-UP ROOFS—ASBESTOS: SHEATHINGS, FELTS, MILL BOARD, PIPE COVERINGS—KRAFT WATERPROOF PAPERS—COAL TAR AND ASPHALT FELTS AND SHEATHINGS—ASPHALT WATERPROOFING PAINTS AND CEMENTS—DRY FELTS AND SHEATHINGS →

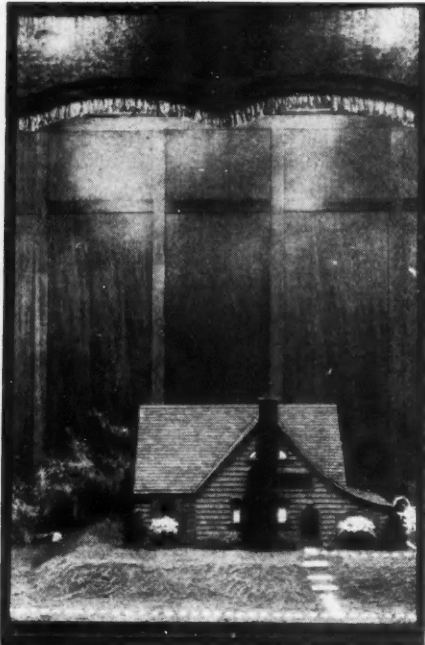
← Offices & Factories: New York, N. Y.—Chicago, Ill.—Millis, Mass.—Erie, Pa.—Baltimore, Md.—Mobile, Ala. →

Antrim Opens Model Yard

APPROXIMATELY 5,000 persons attended the recent opening and house warming of the Antrim Lumber Company's new plant at Enid, Okla., which has been described as one of the most modern, efficient and attractive retail lumber establishments in the country.

This model yard is one of a line of yards operating in Missouri, Oklahoma and Texas, with general offices in St. Louis, Mo. Charles A. Antrim, president of the company, this year celebrated the fiftieth anniversary of his entrance into the lumber business.

This company's yards are, for the most part, of a standard type, but the one at Anadarko, Okla., which was designed by Guy Dale, architect, and the new one at Enid, are exceptions to this standard. All of the company's yards are built and planned for convenience, better and quicker handling



A Miniature Model House Is One Attractive Feature of the Antrim Window Display.



The New Enid, Okla., Plant of the Antrim Lumber Company in Which Attractive Appearance Is of Equal Importance with Efficient Layout.



Bronze, Brick-size Marker, the Guarantee of the Common Brick Manufacturers' Association of America.

methods, and systematic stocking of all materials at the smallest possible cost.

"The association with our local contractors, carpenters, and builders, and their friendship secured by first class service, is far more valuable and necessary to us than the other advantages gained by this efficiency," says Clelland A. Antrim, treasurer of the company.

"We always arrange for a private office where they can bring their prospects if they choose. They find there a complete stock of plans, booklets, material lists, everything to make their work easier and quicker. At most points we have a carpenter shop equipped with a master woodworker, and all equipment, and we urge all carpenters to use it free of charge. This shop is open at all times and it is gratifying to note that they use it to good advantage."

Organize Sales Company

ANNOUNCEMENT has been made, by M. B. Nelson, president of the Long-Bell Lumber Co., of the formation of the Long-Bell Sales Corp., to handle the business of the company in its operating and sales relations with the public, in all states in which the company operates. The sales corporation has been organized under the laws of Delaware, and is capitalized at \$1,000,000.

Certified Brick

A BRONZE marker, brick-size, which is the guarantee of the Common Brick Manufacturers' Association of America that the fired clay materials in any particular wall are of first class quality, has been extensively used by association members for the last three years. This marker has now been patented and will be found only in homes certified by the district associations of the national organization, and will be used only by its members. The marker, as well as the certification plan was first used by the Cleveland Clay League.

E. C. Waldvogel Dies

AFTER an illness of four days, Edward Conrad Waldvogel, a director and vice president of the Yale & Towne Mfg. Co., Stamford, Conn., passed away at his residence in New Rochelle, N. Y., on November 13. His death was due to pneumonia, growing out of an ordinary cold.

Architectural Competition

THE Governing Committee of the James Harrison Steedman Fellowship in Architecture, which carries an award of one year's study abroad and an opportunity to qualify for a master's degree at Washington University, has announced the sixth competition for this fellowship to be held this spring.

The competition is open to architectural graduates who have already, or will have by summer, completed one year of practical work in the office of a St. Louis, architect. Application blanks can be secured from the School of Architecture, Washington University, St. Louis, Mo.

The New York State Federation of Women's Clubs is building an "X-Ray" house in the Grand Central Palace New York City. This is a full-size, cross section of an actual home.

In GRAND RAPIDS

9 Architects Endorse DUNBRIK

Used in all Municipal Work and largest Public and Industrial Buildings



**20%
Lighter In Weight
Big Savings In
Construction.**

Capacity 24,000 per Day, Modest Capital Starts You

ENDORSEMENT of all these leading architects in Grand Rapids has resulted in the use of DUNBRIK in the most extensive and important construction work in that city and surrounding territory. Starting only last Spring, the Stonecraft Company have sold over a million DUNBRIK for use in municipal, public, and industrial buildings alone.

READ MR. HANKE'S LETTER

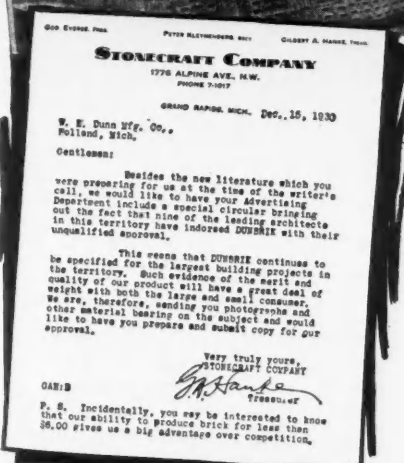
Observe how his low production costs and the high quality of his DUNBRIK—4 times the strength requirement of the city—have secured for him all these large and profitable jobs, given the builders a better product, and saved them thousands of dollars in construction. In every city where a plant has been established, the DUNBRIK line-production machine has astounded the building industry in low cost of production and high quality product.

EXCLUSIVE FRANCHISE

Your business and future are protected by exclusive franchise. You have no competition. Only one franchise to a territory. Send coupon today. Learn all about the business the product, this marvelous production machine, and how it can be secured on a pay-as-you-produce basis.

PAY AS YOU PRODUCE

Small investment starts you,—balance as you produce. The TOTAL represents only a fraction of what would be required to start any other business of such volume and profit. No other business remotely offers you such an opportunity. Get the facts.



6 SUPER ADVANTAGES

1. The most revolutionary development in brick making.
 2. Super-production speed—51 brick per minute.
 3. Endless chain delivers finished brick to off-bearer.
 4. 25% more brick to a barrel of cement and yard of aggregate.
 5. Recessed for lighter weight, stronger bond, greater permanency.
 6. Supplies complete market—common, tinted, and face brick.
- A superior product, ability to undersell any other brick, 2,000 daily capacity,—doesn't this spell opportunity for you in your territory?

W. E. Dunn Mfg. Co.
450 W. 23rd St.,
Holland, Mich.

I want to weigh the possibilities for a DUNBRIK low production cost plant in this territory. Please send me immediately full details covering operation, advantages, and cost of establishing this new industry for my city. Also how I may visit DUNBRIK plants in actual operation at your expense.

Name

Address

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

The Builder's Library

Offered by Book Publishers

"Builders' Materials"

This book was written by R. F. B. Grundy, engineer and lecturer at Bournemouth Municipal College, for the purpose of presenting in as concise a form as possible, for quick reference, information on all the common builders' materials, for the use of those engaged in building and those preparing for examinations. Published by Longmans, Green and Company, New York City. Price, \$2.50.

"Detailing and Fabricating Structural Steel"

Here is a second edition of a complete manual of practice in detailing and fabricating structural steel which has been revised and brought up-to-date to reflect the progress in recent years in this field. It contains much new material and new drawings. By F. W. Dencer, assistant bridge engineer, American Bridge Company. Published by the McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City. Price, \$5.00.

"Operating Results and Policies of Building Material Dealers in 1928"

This book is Bulletin No. 81, of the Bureau of Business Research, Harvard University, Soldiers Field, Boston, Mass., and summarizes the data secured by the Bureau during its third year of study in this field. Price, \$2.50.

Construction Materials

Gypsum Materials

The United States Gypsum Company, 300 W. Adams St., Chicago, has published the 1930 "Red Book of Building Materials." This is a complete and well illustrated catalog of the products it manufactures, and also contains specifications.

Steel Construction

A new pamphlet on the subject of the elasticity of steel has been issued by the American Institute of Steel Construction, 200 Madison Ave., New York City.

Spring Hinges

A new catalog, No. 47, has just been issued by the Chicago Spring Hinge Company, 1500 Carroll Ave., Chicago.

Coated Fabrics

Style, design, color and texture are the subjects treated in a handsome booklet, illustrated in colors, which is offered by the Fabrikoid Division of E. I. du Pont de Nemours & Company, Inc., Newburgh, N. Y.

Check These Items Every Month and Write for Those You Need to Keep Your Files Up to Date. Any Item Listed Will Be Sent Free on Request Except Where a Price Is Noted. The American Builder & Building Age Should Be Mentioned When Writing for These Publications.

"Milcor Spanish Texture"

This new Spanish Texture, obtained by the use of a new Milcor metal wall and ceiling design which reproduces the effect of Spanish plastering, is described, and illustrated in colors, in a new pamphlet offered by the Milcor Steel Co., Milwaukee, Wis.

Fireproofing Insulation

Thermax, a new fireproofing insulation, is being presented by the manufacturer, the Thermax Corporation, 1411 Fourth Ave., Seattle, Wash., in a broadside illustrating its manufacture and use.

Insulating Board

Wood fiber insulating board, known as In-Cel-Wood, and manufactured by the Cornell Wood Products Company, 307 N. Michigan Ave., Chicago, is described in a new pamphlet offered by that company.

Builders' Hardware

"Modern American Hardware by Sargent" is the title of a new booklet in which Sargent & Company, New Haven, Conn., presents its new line of builders' hardware, which is characteristic of the modern movement away from traditional forms.

Equipment for Buildings

Concealed Radiation

"Modern Style in Room Heating with Trane Concealed Heating" is the title of a handsome new booklet published by The Trane Company, La Crosse, Wis., which is distributed in a binder with three other booklets, "General Data and Capacities on Trane Unit Heaters," bulletin No. 23; "Trane Extended Surface Blast Heating Elements;" and "Trane Highest Grade Heating Specialties," bulletin No. 14.

Dumb Waiters

"Sedgwick Dumb Waiters and Elevators" is the title of a catalog "R" issued by the Sedgwick Machine Works, 150 W. Fifteenth St., New York City. It covers a very complete line of lifting equipment and contains charts of suggested uses.

Miscellaneous Publications

"Building and Loan Annals of 1930"

This 600 page volume, published by the United States Building and Loan League, 59 E. Van Buren St., Chicago, has been prepared by some fifty authorities in the real estate, construction, advertising, and building and loan field, and also includes proceedings and speeches from the League's annual convention. It is furnished gratis to members of the League; to others, price \$10.00.

"Making the Plant Safe"

This booklet is number nine in the Industrial Safety series being published by the Policyholders Service Bureau, of the Metropolitan Life Insurance Company, New York City, and contains actual methods used to provide safe working conditions.

Contractors' Equipment

Transmission Chains

The Link-Belt Company, 200 S. Belmont Ave., Indianapolis, Ind., has published a very complete booklet, No. 1050, on its Promal chains for power transmission and conveying service.

Motor Trucks

"On Jobs Like These" is the title of a new booklet published by the International Harvester Co., 606 S. Michigan Ave., Chicago, illustrating the use of International trucks on construction work of various types.

Stone Cutting Saws

Skilsaw, Inc., 3310 Elston Ave., Chicago, has issued a pamphlet describing its new, portable, electric, hand saw for cutting stone and scoring it for ornament.

Electric Moulder

A booklet offered by the Oliver Machinery Co., Grand Rapids, Mich., very fully describes the double chain drive, electric moulder made by this company.

Concrete Molding Equipment

A catalog of molding equipment and the use of color in concrete products has been published by Colorcrete Industries, Holland, Mich., under the title "Colorcrete, The New Gateway to Money-Making Opportunities." Price, 50 cents.

Tractor Power

A new periodical has recently been launched by the International Harvester Company, 606 S. Michigan Ave., Chicago, under the title "Powertrax." It deals with the use of McCormick-Deering power in industry.

Every Modern Builder NEEDS THIS NEW BOOK OF Architectural Designs



It is a handsome book of 272 pages, size 9¼ x 12¼ inches, bound in durable green cloth. It will be a real addition to any builder's library.

This book has been prepared by the staff of AMERICAN BUILDER AND BUILDING AGE as a Style Book on Residential Architecture for the Practical Builder.

It contains a carefully assembled group of designs that are examples of all that is best in convenience of floor arrangement, as well as models of exterior and interior architecture. Every design is in line with the demands of the day. They range from small homes of moderate cost, to the more elaborate types in demand by many prospective builders. The varying needs of different sections of the country have been heeded.

Twelve Architectural Period Divisions

For convenience and comparison, the designs have been divided into *Twelve Separate Period Styles*. Houses of similar character are grouped together. Each of these groupings is introduced with a description of the style, decoration and furnishing appropriate to the period discussed.

This book is offered with your *New* or *Renewal* subscription to AMERICAN BUILDER AND BUILDING AGE. You may obtain your copy at the following liberal prices:

Designs By Leading Architects

Illustrated in this book are homes designed by over 100 leading architects, in period styles as follows: *Early American, New England Colonial, Dutch Colonial, Southern Colonial, Colonial Types, Tudor, Georgian, English Types, Norman, Italian, Spanish, Modernistic*, also specifications of residence, details of residential construction, useful rules, tables and data.

122 Designs with Floor Plans

In all, there are 122 illustrated designs with floor plans. These are arranged according to type, so that they may be referred to conveniently. 1½ story, 2 story and 3 story houses are shown in a variety of materials—stone, brick, stucco, wood, etc. There are 79 illustrations of interiors in the correct period style described. 181 illustrations show fittings and furnishings appropriate to style of architecture. 85 views show exterior details of doors, windows, towers, gates, etc.

These offers good only within the United States and Canada.

\$4.50

Will bring you *American Builder and Building Age* for 3 years and a copy of the book postpaid.

\$3.50

Will bring you *American Builder and Building Age* for 2 years and a copy of the book postpaid.

\$2.50

Will bring you *American Builder and Building Age* for 1 year and a copy of the book postpaid.

Here Is your Order Form — Clip and Mail — NOW!

The American Builder and Building Age,
105 W. Adams St., Chicago, Ill.

Date..... 1-31

Gentlemen: Find \$..... to pay for..... year's subscription to the big New AMERICAN BUILDER AND BUILDING AGE—with which I am to receive, postpaid, a copy of your New "American Builder Year Book—Modern Homes."

Name

St. and No.....

Post Office..... State.....

IMPORTANT: Building publications are required to show occupations of subscribers. Please help us to properly classify you by stating on line below the business in which you are most active.

My Business is.....

Home Modernizing Bureau Plans 1931 Activity

THE Home Modernizing Bureau of the National Building Industries, Inc., is launching a new program of activities for the year 1931. For the past two months this Bureau has been taking stock of its history, and it has become evident that its two and a half years of activity have constituted one of the most interesting and significant experiments in the history of the building industry—the first effort of the building industry to co-operate in an endeavor to control a disastrous situation which it has been forced to face.

The group of leaders, who, under the leadership of Governor Walter J. Kohler in April, 1928, inaugurated this movement, foresaw the present depression, two years before it occurred. The machine they set in motion has been the salvation of many branches of the building industry during this present depression. In spite of the almost insurmountable difficulties that any association of associations must face, it has accomplished an invaluable service for the industry.

The purpose of the Bureau as it was originally organized, was, specifically, to develop the modernizing market, but it was believed that developing that market would result in many highly beneficial results, such as advancing the standards of housing of the American people, providing a broader and enlarged market, for the building industry, a more uniform monthly and yearly building activity and employment, and a resultant high level of national prosperity. The entire achievement of such results could not be accomplished in two and a half years, but that period of time has been sufficient to prove what enormous results co-operative effort can achieve.

The sponsors of the Bureau do not feel that the Bureau's work is done. A deep appreciation of what has been done in the past only emphasizes the need for concentration in the future. The program for 1931 includes these four activities:

1. To establish a new conception in home building sections in newspapers throughout the United States.
2. To enlist the co-operation of trade journals to bring to the industry information as to methods and markets.
3. To mobilize the support of allied agencies and civic groups for business stimulation.
4. To establish a fact finding department that will gather information from independent existing agencies.

This Bureau will inaugurate through

its revised news service a campaign with newspapers throughout the country to establish this new conception of Home Building Sections, so that the publicity on building materials may effectively reach its actual market. It will be presented to newspapers by competent representatives.

The Bureau will work in close co-operation with trade journals for the purpose of gathering and disseminating information on the methods which individual dealers and contractors are using for securing modernizing business as well as information on co-operative campaigns in local communities.

The Bureau will secure the active co-operation of allied and civic groups, such as architects' associations, financing companies, chambers of commerce, women's clubs, etc., to interest them in the larger aspects of a modernizing campaign.

The Bureau will act as a clearing house for all branches of the industry—the manufacturer, the dealer, the contractor in compiling data and statistics which can be issued in usable, workable form.

Facing a Skyscraper

THE Empire State Building, now rapidly nearing completion in New York City, presents an interesting example of modernism in the use of facing for large buildings. The illustration shows workmen, high above Fifth Avenue, installing the facing materials, Indiana Limestone and white metal.

The piers between windows, running



Workmen Placing Limestone and Metal Facing on the Empire State Building.

the full height of the building, are of dark buff Indiana Limestone. The mullions and window sills are of non-tarnishing, chrome nickel alloy with a silver gray finish, and are also continuous to the full height of the building. The effect of stripes of two contrasting but harmonious materials, each beautiful on its own account, is characteristic of modern design and strikingly beautiful.

To Exhibit Model Office

AN interesting feature of the Semi-Centennial Building Products Exposition, to be held in the Cleveland Auditorium, in connection with the annual convention of the Ohio Association of Retail Lumber Dealers, January 13 to 16, 1931, will be a life size, model, retail lumber office, about which the exposition will center.

This model office is being prepared under the auspices of the Home Builders Studio Company, an organization which has recently been formed to sell franchises in a national, voluntary chain yard organization.

IT IS REPORTED THAT—

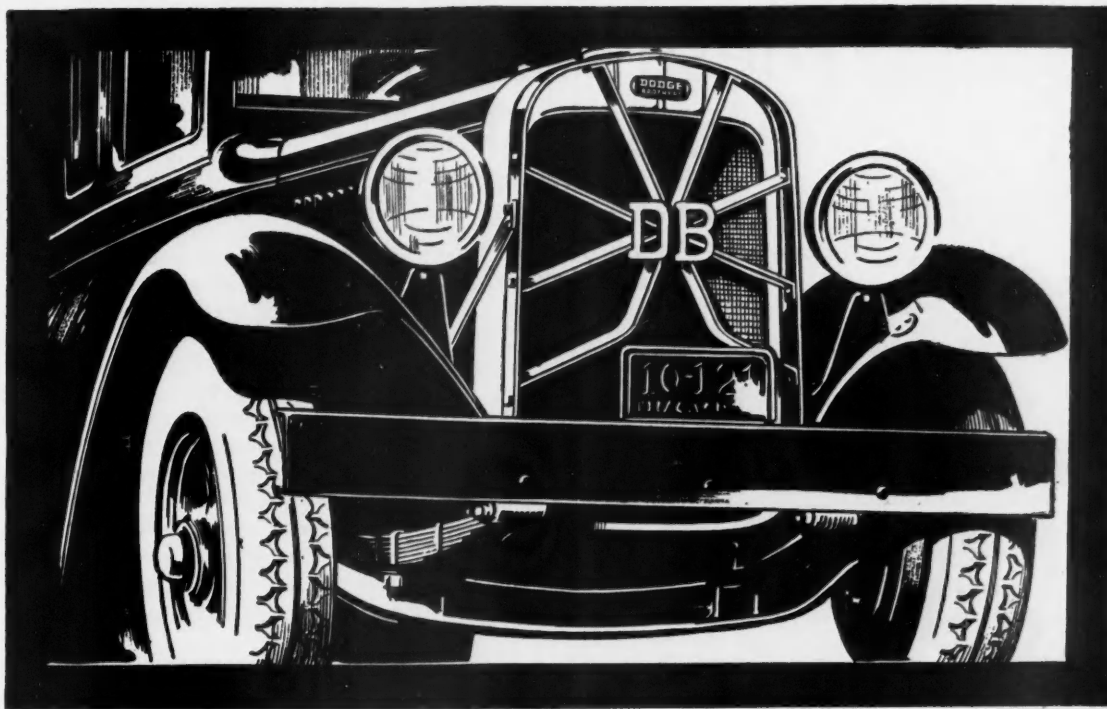
The 48 states and District of Columbia collected an average tax of 3.39 cents a gallon on 6,809,863,076 gallons of gasoline during the first six months of 1930, yielding a net total of \$230,982,099.

Class I railroads have a property investment of \$40,048,607 in motor vehicles. These figures do not include investments of contract operators carrying either passengers or freight for the railroads though several roads make extensive use of such service.

There is a local finance company, in Washington, D. C., which does nothing but finance small modernization jobs. It is overwhelmed with business and in four years of operation has not had a single loan loss.

More than 31,000,000 vehicles have passed through the Holland Tunnel between New York City and New Jersey, in the three years since this tunnel was opened to traffic.

Announcement that the U. S. Steel and Bethlehem Steel has advanced prices for deliveries in the first quarter of 1931 is one of the significant indications that the depression has touched bottom and business is ready for an upturn.



SEE THE COMPLETE HEAVY DUTY LINE

For the heavy duty needs of Contractors, there is now an unusually complete line of Dodge Trucks—ranging in payload capacities from 2950 to 11,175 pounds. They are heavy duty trucks through and through . . . with exceptionally powerful, dependable, economical engines . . .

truck-type clutches
. . . sturdy 4-speed
transmissions . . .

deep, rugged frames . . . drive shafts, springs, internal hydraulic 4-wheel brakes and full-floating rear axles (including double reduction) that are brutes for heavy duty work and look the part.

Inspect, drive and compare these modern heavy duty Dodge Trucks. You will say that they are "all-truck"—

<p>THE COMPLETE LINE OF DODGE TRUCKS RANGES IN PAYLOAD CAPACITIES FROM 1,200 TO 11,175 POUNDS—PRICED, CHASSIS F. O. B. DETROIT, FROM \$435 TO \$2695, INCLUDING 1½-TON CHASSIS AT</p>	<p>\$ 595</p>
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that they look able, perform ably and are unusual values on any basis of comparison.

DEPENDABLE DODGE HEAVY DUTY TRUCKS

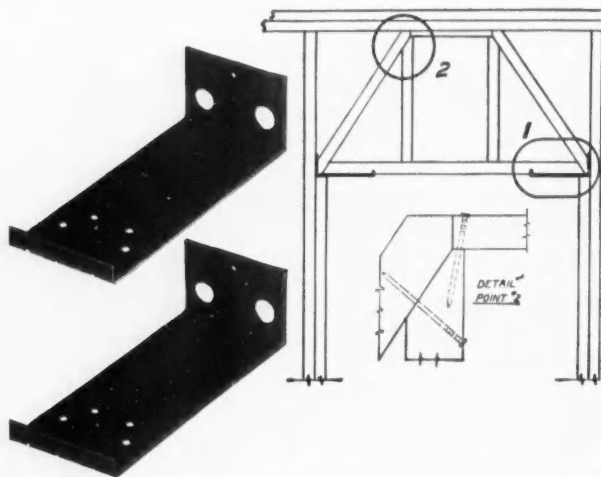
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

These Are New

Header Dogs Prevent Cracks

WHEN headers over doors and windows shrink through evaporation of moisture in the wood, or deflect because of added weight, disfiguring plaster cracks are bound to occur, over the upper corners of the opening. This can be prevented by means of the header dogs shown in the illustration, which also shows their application.

These dogs are made of flat steel 12 inches long turned up at each end and are securely fastened to the bottom



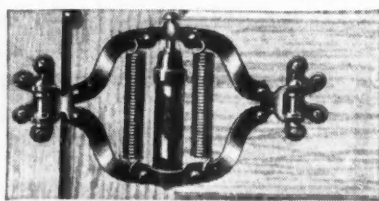
Header Dogs Which Prevent Plaster Cracks and the Method of Applying Them.

member of the door header. They utilize the 2 by 4 door header as a tension member of the truss, the dogs forming the connection at the ends. They prevent the spreading of the members at the heel of the truss and counteract the effects of shrinkage by forming a complete truss of end grain.

These dogs not only prevent cracks but also save time in the construction and framing of headers, and save lumber, it is stated. They are supplied in two sizes, $3\frac{5}{8}$ inches wide and $5\frac{1}{2}$ inches wide.

Improved Type Door Check

HERE is a new door closer which can be installed with nothing but a screwdriver and is applicable to any door.



Installation of This Check Requires Merely Driving a Few Screws.

A turn of a screw adjusts the closer to any desired speed of operation, for any size or weight of door. There is no complicated mechanism to take apart or put together. When installed on a door that will open past center, this check will also keep the door open when desired. And with all these advantages it is a moderate price check.

For Further Information in Regard to Any Product Described in This Department, Write to the American Builder and Building Age, Information Exchange, 105 W. Adams St., Chicago.

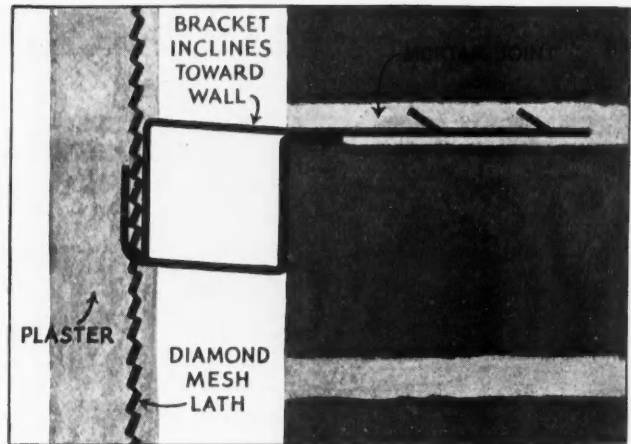
These checks can be easily and quickly installed in any home or building and add to its value and salability.

Furring Brackets

THE application of a new furring bracket is shown in the accompanying illustration. This bracket is easily and quickly installed in the soft mortar

joints as the masonry wall is laid up and when the mortar sets it is securely anchored. The lath is then quickly attached by means of the prongs provided on the ends of the brackets.

This bracket provides furring in depths from $1\frac{1}{4}$ inches to $4\frac{1}{2}$ inches and forms a clear space between the brackets and the plastering which affords protection from dampness and provides insulation against exterior heat and cold. It also simplifies the problem of concealing electric conduits, piping, radiator connections, air ducts, and concealed radiators to be enclosed in the inner wall space.



This Shows the Application of Furring Brackets for Masonry Walls.

These brackets are sufficiently flexible to take up shrinkage and settlement in masonry, it is said, and each section of the furring construction is supported by the wall directly behind it when they are used. They speed up construction, and eliminate much cutting, patching, debris and wasted time. They are cold formed from 16-gauge rust resisting copper steel, and are painted.

New Starting Switches

HERE is one of a new line of starting switches for motors which is designed especially for normal and high torque, low starting current, line-start motors.

They can be used to start all motors of their rated capacity. Their initial cost and installation cost are low. They are small in size, and come complete in a cadmium plated box with knock-outs, ready for any motor job.

The handle is protected by a metal guard and the switch can be locked either "On" or "Off." They give a sturdy control for the power machine. A special lever construction combines easy operation with positive "kick-off" release. The metals and insulation are all oversize giving vital initial-surge capacity so necessary to motors.



One of a New Line of Starting Switches.

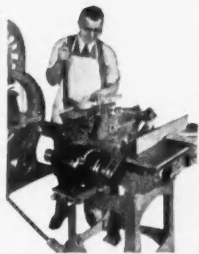
1931 Model EVER-READY COMPLETE WOODWORKER

40
OPERATIONS
WITH 1 MOTOR

8
MACHINES IN
1



The last word in combination machines!
ACCURATE—FAST—HANDY—ECONOMICAL



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A Money Maker

Right up to the minute in every detail, the Ever-Ready offers you a whole shop in one machine. Every one of its eight units built to do work equal to single purpose machines.

With this commonsense arrangement of Saw Table, Jointer, Band Saw, Lathe, Shaper, Hollow Chisel Mortiser, Sander and Boring Machine, you can do all of your shop work at a very low operating cost, and with a very small investment. Ball bearing throughout, and guaranteed for ten years.

We can supply any combination of units of the Ever-Ready you desire.

Details of this machine will interest you. They will be gladly sent upon request.

Porter-Cable-Hutchinson Corp.

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

We Also Build:

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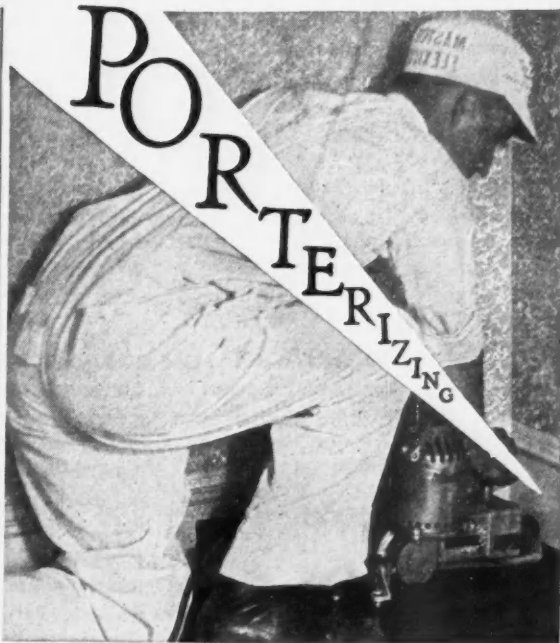
Porterize! your floors!

PORTERIZING is the latest and best method of eliminating expensive and slow handwork around the edges, and the new road to increased profits on floor surfacing work.

PORTERIZING gives the entire surface, right up to the base boards, the same uniform, smooth, rippleless finish, and surfaces butt ends with the grain.

Many builders and floor contractors are selling "Porterized" floors instead of ordinary sanding jobs, and find it pays better in both money and satisfied customers. Architects who want the best at no higher cost specify "Porterized" floors, stairs, halls and landings.

PORTERIZED work is done best with our new B-44 Edger in conjunction with a Speedmatic Floor Surfacer. Let us tell you why and how they work together for better work at less cost. Let us demonstrate the money-making possibilities for you in "Porterizing."



B-44 EDGER

A faster, more powerful belt sander, constructed to go right up to the edges, in corners, on stairs, and for completely doing small rooms. This edger may also be used as a bench machine for use on sash, trim, furniture, and woodwork of every description. A machine you really can't afford to do without.

MAIL COUPON TODAY

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Without obligating me, please send details.

Ever-Ready
 Porterizing with
B-44 Edger

Name

Address

Occupation

New Up-Sliding Door

A WOOD, upward acting, service door, suitable for warehouses, factories, service stations and public and private garages, has recently been placed on the market by a firm



Ease of Operation and Quietness Are Found in This New Upward Opening Door.

long established in the manufacture of rolling and folding doors. It is made in rabbited sections, equipped with ball bearing rollers, and rolls up out of the way on a steel track, suspended from the ceiling.

Although an unusually light door, each section is strengthened by galvanized steel truss members, the tension of which can be increased by means of the end bolts fastening them to the malleable iron hinges. All the hardware is of heavy malleable iron, bolted with 5/16-inch carriage bolts.

A cable, used in conjunction with a single, oil tempered, helical spring, encased directly above the door, furnishes a counter-balancing mechanism which affords quietness and ease of operation. A single locking device, consisting of a counter-balanced slide bolt, in connection with a cylinder lock, is used. Several sizes of doors are carried as regular stock and other sizes are supplied to order.

Rayon Shower Curtains

IN keeping with the trend toward more elegant bathroom equipment, one of the leading manufacturers of rayon has brought out two new types of shower curtains, in



Water Repellant Shower Curtains of Rayon in Aquatic Designs.

aquatic designs, in rayon fabrics, that are specially processed and made water repellant. Tests have shown that they will not mildew and may be laundered without losing any of their water repellant qualities.

The new rayon shower curtains are styled in conjunction with wall papers. The same designs are available in rayon piece goods for draperies, so walls, windows and shower may all carry out the ensemble idea.

For the rayon satin, an iris motif in white on blue and also in two tones of lavender and two tones of green, has been created. One of the taffeta curtains has been designed in an interesting color harmony of green, blue, lavender and peach, with a modern grouping of cat-tails and water lilies. There are also other interesting designs all keyed to the aquatic type and printed on all-rayon taffeta, and cotton-warp, rayon filled satin.

Washable Wallpaper

THERE has been perfected, and recently placed on the market, a wallpaper which is washable. It is treated by a process which makes it entirely impervious to soap and water. The result is that any kind of soiling can be removed with soap and water. This includes not only ordinary dust, but ink stains, pencil and crayon marks, dirt, finger prints, tobacco stains, and even the most stubborn grease marks, it is stated.



A Room Decorated with Washable Wallpaper for Permanent Beauty.

This paper comes in the convenient 24-inch width and requires no special hanging operation. Its cost compares favorably with that of ordinary wallpaper of the better

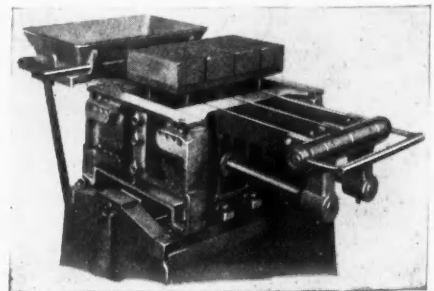
class, and in the long run it is economical to use because it eliminates replacement cost.

Not only for homes where there are children to soil the walls, but in any building it is appropriate. It should be especially valuable in apartment buildings and hotels, reducing the expense of keeping the rooms in a rentable condition.

Concrete Brick Machine

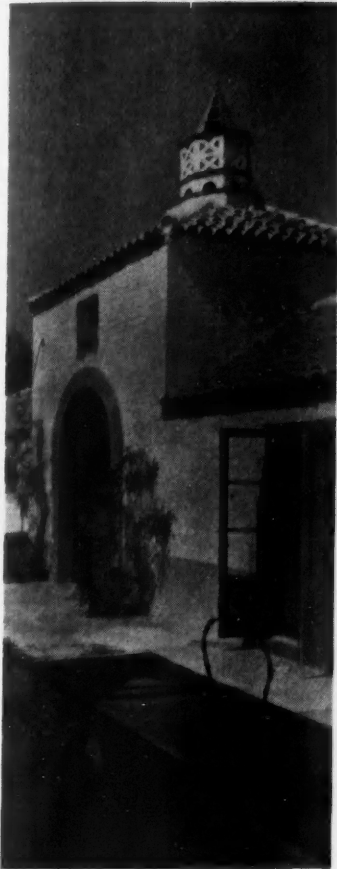
TO meet the increasing demand for brick form concrete block, one manufacturer of concrete block machines has brought out a simple, fast operating attachment for application to its strip block machines.

This company's machine is primarily designed to make plain and rock face blocks. By the use of different mold assemblies, these blocks can be made in several sizes and shapes. Changes are quickly made. The new attachment consists of a mold



Concrete Block Machine Equipped for Making Brick.

box and dividing plates for making four brick at a time. Pallets of wood or light steel may be used. They fit the car and rack equipment ordinarily used for blocks. If bricks with frogs or special cores are to be made, pierced or punched steel pallets are available.



**AMERICAN BUILDER
and
BUILDING AGE**

**IS THE BUSINESS
JOURNAL OF THE
ACTIVE MEN OF THE
BUILDING INDUSTRY**

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BUILDING AGE**

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53rd Year

Vol. 50—No. 5

FEBRUARY, 1931

Front Cover Painting	By L. E. Arent	1
Looking Ahead with the Editor	March Forecast	7
Subject Sign-Post	Editorial Department Classified	51
Editorials		53-54
Fight for Lower Taxes		
Too Many Lone Wolves		
Frontispiece		55
Power Tools Make a Good Builder Better		
"Build Now" Campaign Sweeps Nation	An Editorial Survey	56-60
Rock Bottom Building Costs Create Buyers' Market for Residences—Builders Urged to Capitalize on Situation		
Homes of Contentment	Photographs and Plans	61-71
Twelve Designs for Better Homes Both Large and Small		
The "Confessions" of an Architect-Builder	By Hugh McClure	72-75
How the Home Seeking Public is Well Served in America's 1500 Smaller Cities		
Apartment Designs		76, 77
Contractor-Owner Works Out Unique Problem with Apartment Units Built in Series		
Basements Along Main Street Provide New Modernizing Business		78-80
Architectural and Business Suggestions for Modernizing and Utilizing Store Basements		
What Our Friends, the Architects, Expect of 1931		
		A Forecast by Robert D. Kohn
		81
Wilmington, Del., Keeps Builders Busy	By Kenneth A. Horner	82, 83
Contractors, Architects, Realtors and Supply Men Co-operate with Chamber of Commerce in Successful Building Drive		
Larger Units Cut Costs		84-87
Five-Ply Fir Panels in Large Sizes Show Remarkable Results When Used as Sheathing, Rough and Finished Flooring and Wall Lining		
New Models Bring Promises of Lower Costs on the Job		88, 89
Speed, Close Control and Safety Are Features of 1931 Models of Electric Hand Tools		
Heating Progress Boon to Builders		90, 91
Health and Comfort in Present Day Air Conditioning Heaters		
Time Saving Trim Details		92
Short Cut in Finishing Door and Window Openings		
Two Elevators in One Shaft		93
Express and Local Service Arranged in Same Shafting Will Cut Costs of High Buildings		
Ginger Bread House		94
A Fairy Tale in Stone		
No Fuses to Blow!		95
New Circuit Breaker System Protects House Circuits		
Ornamental Gates	A Page of Details	96
The House of the Month	Building Plans in Detail	97-101
Garage Improvements	A Survey of Garage Door Hardware	102-110
How to Plan and Build Better Garages and Garage Doors		
What Price Houses Sell Best?	By E. L. Gilbert	112
Questions of Law Clearly Answered	By Leslie Childs	116
Practical Job Pointers	A Readers' Exchange of Tested Ideas	118, 120
The Month's News of the Industry		122-128
New Materials and Devices		130, 132
For the Builder's Library		134
Advertisers' Index		171

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WAY TO
GREATER
PROFITS

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... Says the Builder
of this Brick Dwelling

Sawyer and helper cut 170—3x10 joists—fire
cut on one end in two hours—on the DeWalt.

Cut twelve stair horses out of 12" planks in
1½ hours.

Cut and squared studding (both ends) in 1 hour
and 15 minutes.

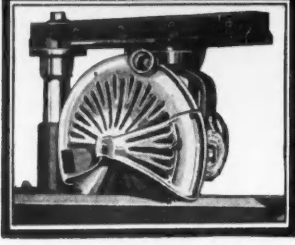
Made and assembled 30 window frames in only
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Cut and laid diagonal floor in only 4 hours.

With the aid of helper cut 85—2"x6"x16 ft.
rafters, four cuts to each rafter, two miter cuts
and a plumb and heel in thirty-five minutes.

Why not make your payroll more productive...
save your time... boost your profits with a
DeWalt Wonder Worker?

Don't forget also that with the application of a
carborundum wheel in place of a saw blade, that
brick can be scored or cut thru right on the job.



29 distinct operations can be performed on a DeWalt—with all the speed and precision of a single purpose machine.

A DeWalt saves money on any job where wood, brick or stone is cut. The fact that DeWalt leads in the sale of portable power cutting machines is due to its greater power, number of uses, ease of adjustments and accuracy.



DeWalt - Wodack Electric Hand Saw is speedy, accurate, safe and powerful. Rips, crosscuts, bevels. Four sizes, capacities 2½" to 4½"

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CUTTING MACHINES
DEWALT PRODUCTS CORPORATION
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Sales and Service in All Principal Cities in U.S.A. and Foreign Countries

LOOKING AHEAD
WITH THE EDITORS

March, 1931

These Men Were Not Afraid

THE developers of "Allwood", a new city in the making, located in northern New Jersey, did not hesitate to launch their big enterprise last year in the face of gloomy, even tragic predictions.

The story of how they went ahead and succeeded will be graphically presented in the March issue of AMERICAN BUILDER and BUILDING AGE.

An entire street of one hundred homes was built *as a demonstration* and sold in 1930.

The entire development of Allwood will extend over a number of years. Forty-five hundred homes and other buildings are to be planned, erected and sold.

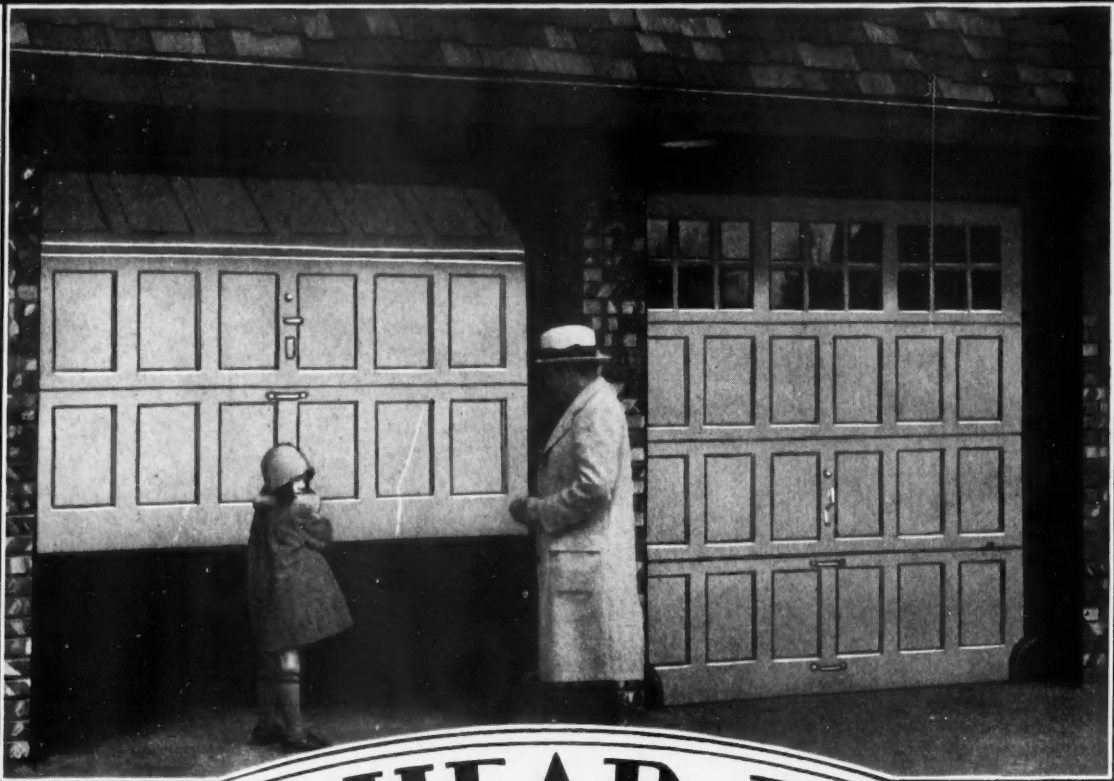
It takes courage, you say, to do a thing like this; the risk is too great. Messrs. Reis and

Prior, developers of Allwood, say, not when you have the right merchandise and can offer it at the right price.

How they laid out this development, planned it, financed it and have successfully inaugurated the construction and selling program is important information for every builder. The Editors of the AMERICAN BUILDER and BUILDING AGE are happy to announce this outstanding feature for March.

Another article of special reader interest and reference value to be presented next issue will be the conclusion of the garage improvement feature started this month, the first installment of which appears in this current issue. Next month important details of garage design and construction will be presented.

—The Editors



Stock design door with special glass arrangement

The **OVERHEAD DOOR** for GARAGE-FACTORY-WAREHOUSE

TRADE MARK REG. U.S. PAT. OFFICE

Builders and contractors can honestly promise garage door service with The "Overhead Door" for our nation-wide sales-service organization stands behind each "Overhead Door" sold.

See listing on opposite page for the Overhead Door Company in your community. That company will welcome the opportunity to confer with and serve you.

Introduced years ago as the **New Thought** in garage door design and operation, The "OVERHEAD DOOR" has completely revolutionized the public conception of what a good garage door should be.

Pioneered by Overhead Door Corporation as the **Perfect** garage door, The "OVERHEAD DOOR" has now come to be recognized as the truly modern door for private and public garage, factory, warehouse, and similar buildings.

Our only testimonial of the worthiness and merit of The "OVERHEAD DOOR" is the fact that there are nearly one-half million "OVERHEAD DOORS" in actual

use today. Of that number we have no direct knowledge of a single one which is not rendering absolute satisfaction.

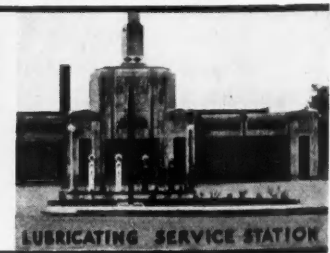
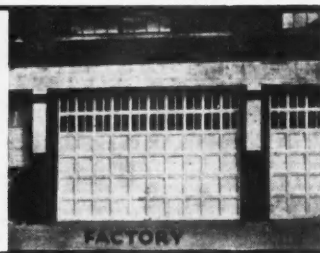
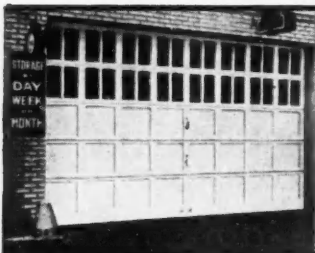
This acceptance, both by the general public and the architectural and building profession, is evidence of the fact that The "OVERHEAD DOOR" has been lifted from and stands alone and apart

from the classification of "experimental new-fangled contraption or idea." You may have knowledge of a door similar to The "OVERHEAD DOOR," for, as you know, every good product is quickly and widely imitated. For that reason we wish to remind you that The "OVERHEAD DOOR" is manufactured by

OVERHEAD DOOR CORPORATION

HARTFORD CITY, INDIANA - U. S. A.

Made in Canada by Overhead Door Company of Canada, Limited, 1951 Dundas St., West, Toronto 3, Ontario



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