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[A Simmons-Boardman Publication]

AMERICAN BUILDER

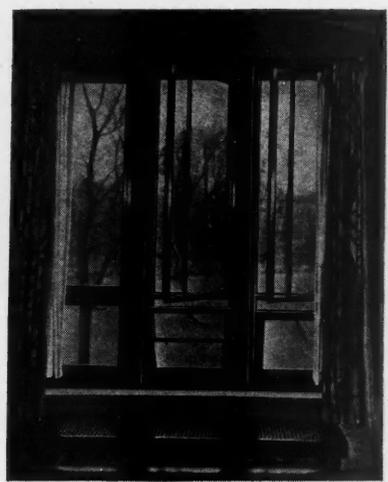
and Building Age

NAME REGISTERED U. S. PATENT OFFICE AND CANADIAN REGISTRAR OF TRADE MARKS

JANUARY, 1936

58th Year

Vol. 58—No. 1



Effective window group in home of F. J. Plym, President, Kawneer Company, Niles, Mich., demonstrating new hinged "storm sash" for air conditioned homes.

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BERNARD L. JOHNSON
Editor

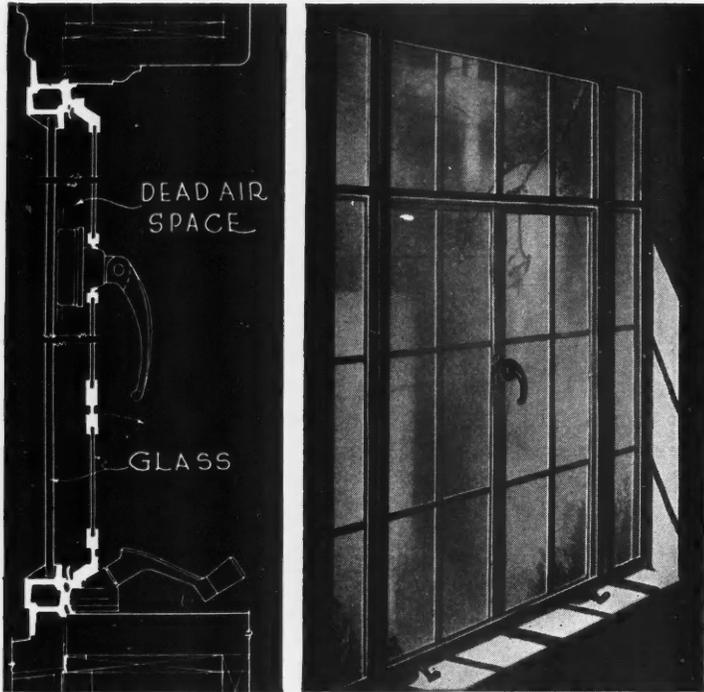
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The STEEL WINDOW for
Air Conditioned Homes
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Photograph above (right) shows Fenestra double steel window.
Vertical Section (left) shows inner window with tilt-in sill ventilator.

It reduces heat loss through windows approximately 60 per cent.*

It eliminates condensation and frost under all ordinary conditions.

It saves fuel... sometimes actually reduces the cost of heating equipment.

It reduces the load on the air conditioning system.

It is applicable to all standard types of Fenestra Screened Fenwrought Casements equipped with Roto-Adjusters.

It is removable to permit occasional cleansing of the inner glass surfaces.

It is attached to the inside face of the casement... easy to put on... easy to take off... preserves the attractive appearance of the window... all noteworthy advantages over storm windows.

*Heat loss through double windows is 60 per cent less than the heat loss through single windows according to figures indicated by the "Guide" of the American Society of Heating and Ventilating Engineers. Double windows also solve the major problems that develop when humidity inside the building is high and temperatures

outside are low. To provide these advantages in a practical unit, easily handled, Fenestra offers new insulating windows rigidly attached to Fenwrought Casements and baffled against heat transmission. Insulation is provided equivalent to a fixed, double window with dead air space between the two frames.

Figure your windows on an INSTALLED basis and you'll be surprised how often Fenestra Casements actually COST LESS than double hung wood windows. Chief misconception of window costs lies in the idea that a window is merely sash and frame. In double hung wood windows labor and extra materials may run as high as 75% of the total cost. In Fenestra Casements, which are preassembled, labor and extra materials run much lower.

DETROIT STEEL PRODUCTS CO., 2242 E. Grand Blvd., Detroit, Mich.
Please send me details of your Fenestra Windows for "Air-Conditioned" Homes.
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Address _____
Town _____ State _____

BETTER WINDOWS THAT COST LESS
Fenestra

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21

"HAPPY NEW YEAR— AND MANY OF THEM"

MOST persons enter the New Year with optimism. This is especially true in the home building industry.

There is good reason for this optimism. But the Great Depression is not ended. The volume of all business being done is not three-fourths as large as in 1925-1929. The volume of residential construction is not yet one-third as large as then. There are still over 9,000,000 unemployed.

Much remains to be done to restore prosperity. It must be done by business men, farmers and their employes. Politicians are always more likely to retard business and employment than to stimulate them.

AS WE start the New Year it would be well if all of us would consider certain fundamental facts.

1. Food, clothing, housing, all the necessities comforts and luxuries, *are due to production alone.*

2. Almost every kind of production is due to mental and manual work and to *machinery*, including tools.

3. The more work we do, and the more of the right kind of tools and machinery we use, the more we will produce.

4. There is *no danger of general over-production* of the things we want. The value of all the commodities and services produced in 1929 *averaged only \$2,800 per family.* The average family would be glad to have twice as much of everything as it had then. But before the average family can have it there must be produced twice as much as in 1929 and *three times as much as in 1935.*

5. To treble the production of 1935 would require much more work, and the *use of much more*

and better tools and machinery. Only by far greater use of more and better tools and machinery could all the workers available in the country, if working full time, increase their production enough to provide an Abundant Life for themselves and their families.

6. The tools and machinery required *are not now being produced.* They must be produced by the "durable goods" industries. These industries are still greatly depressed because there is not enough buying from them. One-half of the unemployment is in them. The other one-half is in industries dependent upon them for business. The continuance of millions on relief is due, directly and indirectly, to the continued depression in the "durable goods" industries.

7. The bulk of the buying from the "durable goods" industries *is done by business itself from its profits or because of confidence in future profits.*

8. The problem then, of reducing relief and unemployment; of increasing the production of tools and machinery; of thereby increasing the production of all things that all of us want—is mainly the problem of increasing the confidence of business men in future profits so that they will largely increase their buying from the "durable goods" industries.

THE profits and confidence of business cannot be restored by increasing government subsidies, spending and taxing, and competition with business. In the long run such policies injure everybody.

Prospects for 1936 are good. We can improve them by getting our economics straight, and making government, business, agricultural and labor policies conform with them.

This is the only way to a Happy New Year for all—and many of them.

Samuel O. Drumm,
CHAIRMAN

AMERICAN BUILDER PUBLISHING CORPORATION
SIMMONS-BOARDMAN PUBLISHING CORPORATION

STUCCO BIG FAVORITE IN TODAY'S BUILDING UPTURN —Here's why...

● The building business is looking up. And, for both new home construction and for modernizing, there is a swing to stucco. There are sound reasons for this.

1. Portland cement stucco (factory-prepared is preferable) is a strong, durable finish. Actually it is a thin wall of concrete, comparable to concrete in permanence, weather and fire resistance.

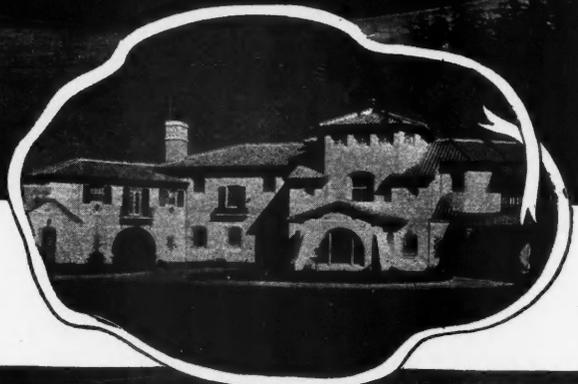
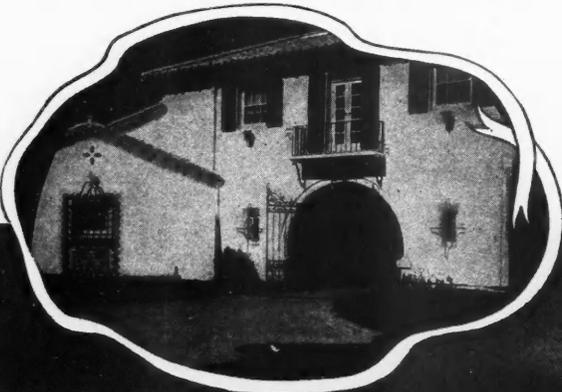
2. Stucco is applied in any texture suited to the

architectural design—floated to a smooth finish, troweled in various semi-smooth effects, tooled, stippled, spatter-dashed, rough torn, or treated in other pleasing ways.

3. With a finish coat made with *white* portland cement, any color is available in stucco—from pure white, through pastel tints of cream, salmon, tan, pink—to rich warm yellows, browns, greens, and other shades.

Add to these three the *economy* of stucco, and you've got four strong selling points that are hard to beat.

For details write Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), 208 South La Salle Street, Chicago.



You may not have many jobs as palatial as this one! But we show it here as a beautiful example of stucco finish made with Atlas White—the ideal finish for modest homes as well as the finest homes. John A. Brown, Oklahoma City, is the owner of this house. Atlee B. and Robert M. Ayres, Architects, San Antonio.

STUCCO *made with* ATLAS WHITE
PORTLAND CEMENT



AMERICAN BUILDER AND BUILDING AGE

SOUND ADVICE—

“Build What Public Wants”

AN ARRESTING title, “‘Cute Colonial Cottage’ Fans Peeve Architect,” was carried by the Chicago Tribune on December 14, over a Schenectady (N. Y.) Associated Press news item, which we quote in part: “The sentimental citizen who must have one of those ‘cute Colonial cottages’ was disclosed tonight as a thorn in the side of the progressive architect. The modern architect says that the sentimental citizen would do well to let the former have his way, according to the editor of an architectural paper who proceeded to take up the cudgel for the modern architect.”

This slurring reference to America’s most highly regarded architectural style raises a question of vital interest to contractor-builders in the residential field and to their clients—a question involving what is desirable today in home design and where can really competent designing service be obtained.

DECLARING again American Builder’s insistence that *competent planning* should be the basis of every building job, we must protest against the current tendency of a certain portion of the self-titled “advisors” of the home building industry periodically to condemn the home-buying public for its lack of acceptance of the entire bag of tricks which the modernists would force down its throat in one large dose. If the home buyers do not want to put their money into the freak styles and nightmares which some designers turn out and label homes, there must be a good reason for their reactions. Undoubtedly, people still want the structure in which they live to look like a home and not a factory.

The designing, building and selling of homes is a business—one of the biggest of them all—and a principle of success in any industry is to give the prospective buyer what he wants for his money. Both the movie producers and the automobile manufacturers re-discovered this truth in recent years. Any change must be evolution—not revolution.

If the public is buying 60 per cent of its homes in the three types of Colonial design, those creating them will do well to bear this in mind if houses are to be

marketed and not stand vacant as show places or “model homes,” which will attract attention only because they are unique.

THIS also is a good guide in the matter of construction and materials—untried and untested theories have no place in the planning of houses which the builders of this country can expect to sell. The predicted large home market for the next ten years will undoubtedly attract a host of unsound theorists; the wise builder might well listen most critically to the exponents of this “new order” in the home building field. Remember the person who is to buy or build is a conservative individual planning one of his major investments and does not want to be stuck with a house that will turn out to be just another “wildcat.”

American Builder has always displayed for the benefit of its readers such houses as are found to be the best in present day practice—not visions of what might be selling ten or twenty years from now. Likewise such new methods, designs and materials as are proved find their proper place in the contents so that the industry will be informed of these developments and will be able to make the best use of them.

APROMINENT building industry man recently observed regarding the radical trend among artist-architects, “These architects by their freakish designs and impractical ideas are pushing themselves still further out of the general home building picture, and just at the time when they ought to be seriously studying home building and devising some workable means for participating helpfully in the present home building activity.”

Subscribers of American Builder are the practical men of the home building industry who make their living planning, building and selling homes to the bulk of the American public. As such they can and must always be aware of false prophets and indulging theorists. A good slogan is “Keep Your Feet on Firm Ground.”

"Hope Chests" Too Big!

ONE of the things that is standing in the way of home buying and home building for the masses in this country is the inflated ideas and exaggerated requirements of the average family when "owning your own home" is proposed.

It is the old story again of the champagne appetite and beer pocketbook; for it appears from information now being more or less broadcast that the average renting family "would insist on" a nine-room house, complete with three bathrooms, basement recreation room, health glass and automatic garage doors, if planning to build—in other words, a home in the \$20,000 class!

A weekly publication of general circulation has made a "survey," it is revealed, of 6,000 of its subscribers picked at random. The purpose was to find out the current trend in housing specifications. The readers of this publication may, of course, be a very select lot, with incomes far above the average. Certainly their "hope chests" are stuffed with big ideas on home building; and it is apparent that the realists of the building industry, the practical contractors and builders, will have to do a neat job of trimming, selling and persuading before their dream homes assume tangible form in "bricks and mortar" within the limits of their actual present ability to shoulder the financial burden of home building.

Here is what the "survey" revealed:

On the question of number of bedrooms, the answers indicated that the house required for the average family would have two double bedrooms; two single bedrooms; one servant's room and three bathrooms. Other special rooms needed, according to the report, are: separate dining rooms, 80 per cent; game room in the basement, 54 per cent; separate library, study or den, 80 per cent; sleeping porches, 36 per cent; and sun porches, 50 per cent. Synthesis of these figures produced, on the average, a 9-room house. When questioned as to garage requirements, 53 per cent said they would insist on built-in garage; 40 per cent wanted automatic doors.

Now it seems to the *American Builder* that the above catalog of things to be insisted upon is really an obstacle in the way of a sensible home-building program for the average American family, whose income on the average is extremely modest. According to the best available information, only 7 per cent of the American families in 1933 had an income exceeding \$3,000 per year, and only one per cent exceeding \$7,500 per year. It seems evident that it is not the high cost of building, but the cost of high ideas, that has been holding back construction; for, if this survey is any criterion, it is such extravagant and story-book requirements which many now living in hotels and modest apartments seem to have set up for themselves that make home owning a goal too far out of reach for actual attainment.

The practical business men of the building industry

must overcome this obstacle by offering low-cost, long-term financing, combined with good design and staunch construction. Someone who really understands home building must work with these day-dreaming home seekers, helping them to squeeze down their "hope chests" to square with their available building budgets.

One Million, Not Ten

AN EDITORIAL in the December issue of this publication, appraising the accomplishments of FHA in financing and promoting repair and modernization of work under Title I of the National Housing Act, stated erroneously that "man-hours of labor sufficient to give ten million men employment for one year have been utilized in this work, created by and under Title I of the National Housing Act." The estimate should have been *one* million men, not *ten*. The basis for this estimate is the FHA statement that over one billion dollars of repairs, postponed maintenance, and modernization jobs have resulted to date from its efforts. Since building work is 95 per cent labor, counting both that on the job and back at mine, pit and forest, this sum would give one million men a thousand dollars each—a year's income in times like these. Approaching this estimate in another way, we see that one billion dollars spent at an average rate of 50 cents per hour for mill and job labor would buy two billion man-hours. The average man-year is now about two thousand hours. So again, the estimate figures out that at least one million men have been given a year's employment because of Title I of the National Housing Act.

Unless amended by the next Congress this part of FHA activities will stop on April 1, 1936. *American Builder* favors extending Title I at least two years more—to April, 1938. We urge every reader of this publication to write to his Congressman and Senator to work for extending this sound and successful FHA activity.

Argument for Home Owning

THE Chicago Real Estate Board has drawn up a new apartment lease form, that prohibits use of radios late at night by renters, and compels quiet operation the rest of the time.

Thus, another "freedom" which home owners enjoy, but which renters are denied, is added to the list. It is very likely that this radio issue will prove one of the building industry's best arguments for home ownership and sale of new homes. Folks like to tune in their own radios when and as they please; they will resent interference from renting agents or flat janitors. On the other hand, they object to the noise and blare of their neighbor's sets, and are forced to move to escape present-day (and night) apartment house din.

Home ownership with its privacy and independence from outside dictation is the best answer; and salesmen of the home building industry should urge it.

G.C. KIRN SIGN CO.



PAY YOURSELF *The Rent Money*
OWN YOUR OWN HOME
THROUGH THE
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5% MORTGAGE LOANS

B R O A D W A Y & O L I V E

Federal Housing Mortgage Loans...5%

Pay YOURSELF
The RENT MONEY
and Own
Your Own Home



Through the
MORTGAGE LOAN PLAN
of the
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ADMINISTRATION



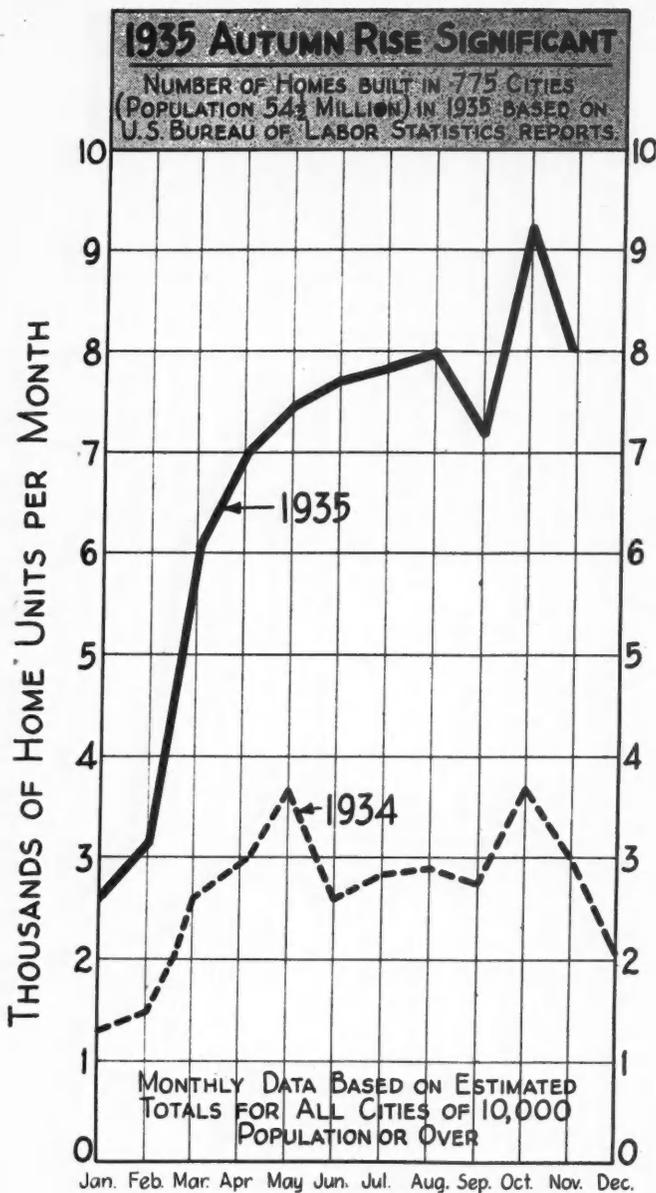
MISSISSIPPI VALLEY TRUST COMPANY
in Cooperation with the
FEDERAL HOUSING ADMINISTRATION

LOW COST MONEY OFFERED

Home Building is stimulated as banks, insurance companies and building and loan associations come into the market seeking new home mortgages.

This prominent St. Louis (Mo.) bank, the Mississippi Valley Trust Co., is setting a fine example both in business enterprise and public spirited leadership by its stalwart backing of the FHA 5 per cent mortgage plan.

1936 Building



100 Per Cent Increase Over 1935 is the Forecast of American Builder Survey Shows Importance of Rural and Small Town Market

THE building outlook for 1936 is extremely encouraging. Analyses of all the factors—financial, social, political and economic—point towards a rapidly accelerating volume of home building, with the probable number of houses built in 1936 doubling 1935.

Building men will long remember 1935 as the year that the nine-year decline in residential construction was halted and a vigorous revival staged. The peak of home building occurred in 1925, not 1929. Since 1925, every year until 1935 recorded the construction of fewer houses. But the tide finally turned, and as a result of the upturn that got under way early in the year, the number of homes built more than doubled those in 1934.

Especially significant was the broad front on which the improvement took place: in the smaller towns and

rural communities as well as in the cities. The improvement was cumulative, with the fall months showing unprecedented strength. October was the best since 1929, being 198 per cent better than 1934. The monthly record of residential building permits issued in 776 cities, as recorded by the U. S. Bureau of Labor Statistics, and pictured on the accompanying chart, shows how the home building program in 1935 grew in strength, month by month, culminating in a strong fall activity of great significance.

It is estimated that the total number of residential units including farm and rural homes built in 1935 was 125,000, representing a valuation of \$600,000,00. As the building permit chart to left indicates, 76,000 houses were built in 776 cities which have a total population of 54,474,000. On the basis of reports to *American Builder* from small town, rural and farm areas, representing a population greater than the 54 million covered by the Bureau of Labor Statistics reports, a total of 125,000 units for the entire country is not considered excessive, although it is higher than the published reports of agencies that do not take into consideration home building in the rural areas.

The residential building industry is carried on in thousands of small towns and rural communities as well as the larger city and suburban areas. Its volume is made up of a multitude of small operations that mount to large national totals. The sharp reversal of trend that took place in 1935 is therefore considered highly significant. The building industry's move forward in 1935, analysts agree, marked the end of a long decline and the beginning of an equally long period of rising volume. There are many forces making towards a home building increase of considerable proportions. The need for modern new homes is great and credit for home financing is available in large amounts. These two factors, plus the tendency towards rising rents and shortage of houses in the moderate cost field, indicate a sharp increase. On the basis of reports from the most reliable sources, *American Builder* predicts 1936 residential volume will double that of 1935. In terms of housing units this means 250,000 homes. In terms of dollar volume it means a market of approximately one billion two hundred million dollars.

Great Home Need

In February 1934 the *American Builder* published a statistical issue dedicated to the re-employment of two million men in the building industry. In that issue an annual need for 800,000 new homes per year was shown. It was pointed out, however, that to show a statistical need for 800,000 new homes per year was one thing, but to expect that need to be translated into actual houses for the millions of American citizens needing adequate homes was another matter.

Today a review of the statistical background affecting the need for homes for the masses of the American public amply confirms this figure. *American Builder* does not predict that any such volume will be built in 1936, or for several years thereafter, but it does reaffirm that the tremendous piled up volume of housing deficiency clearly shown by an analysis of housing facts

Outlook BEST In Years

is beginning to break through, and that in 1936 a start will be made—a healthy start—towards supplying the crying need for homes.

The most recent study of the need for homes in the United States is that made public by The Committee for Economic Recovery, a non-political group of business men who declare the only way the present "standing army" of unemployed in this country can be put to work is through a revival of home building. This Committee, on the basis of analysis of basic housing factors, declares that from 750,000 to 1,000,000 homes per year will be required for the next ten years. The following table is presented by the Committee, showing the background data for its estimates:

For a ten-year program the picture is as follows:

1934-45	New dwellings needed	
Net increase in number of families.....	5,000,000	
Cumulated shortage since 1929.....	2,500,000	
Units to be demolished.....	1,000,000	
Ordinary disappearance through fire, etc... 1,000,000		
Necessary reserve of homes.....	650,000	10,150,000
<hr/>		
Deduct		
Vacant available homes.....	750,000	
Houses that could be subdivided to make more units	500,000	
Families who for various reasons cannot aspire to separate homes.....	1,400,000	2,650,000
<hr/>		
Actual need for new homes, 1935-45.....	7,500,000	
Annual need for new homes, 1935-45.....	750,000	

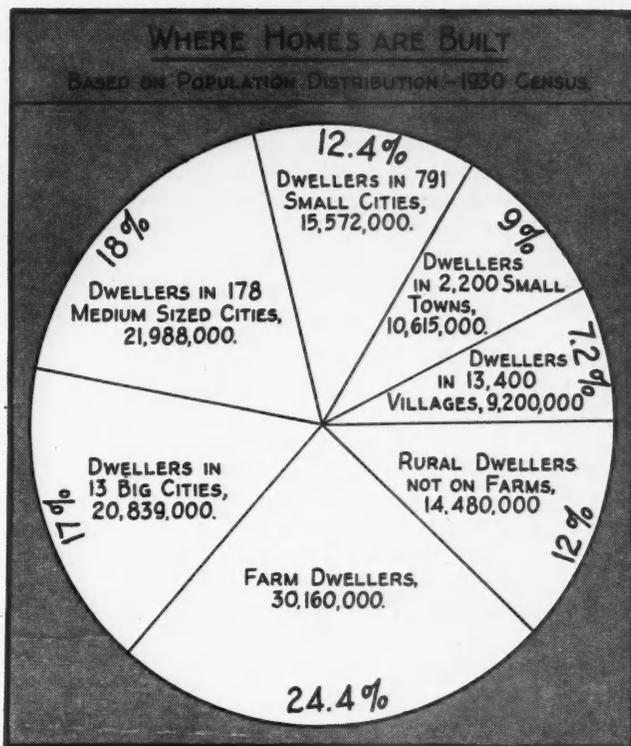
These figures further substantiate the recent estimates of Peter Grimm, Assistant Secretary of the Treasury, in an interview published in the November *American Builder*, pointing out a need for from 6 to 10 million new homes in the next ten years. The Committee's estimate for 1936 is 250,000 homes, which is more conservative than the 1936 estimate of Mr. Grimm, who perhaps did not take into account the slowness with which the widely diversified elements of the residential building industry move despite the pressing need for a building revival.

To most building men the sharp increase in home building in the fall of 1935 is ample proof that 1936 will move at an accelerated pace, with but one possible deterrent—credit. They know that there is a need for modern homes at moderate cost, but can these homes be financed? Let us consider this point fully:

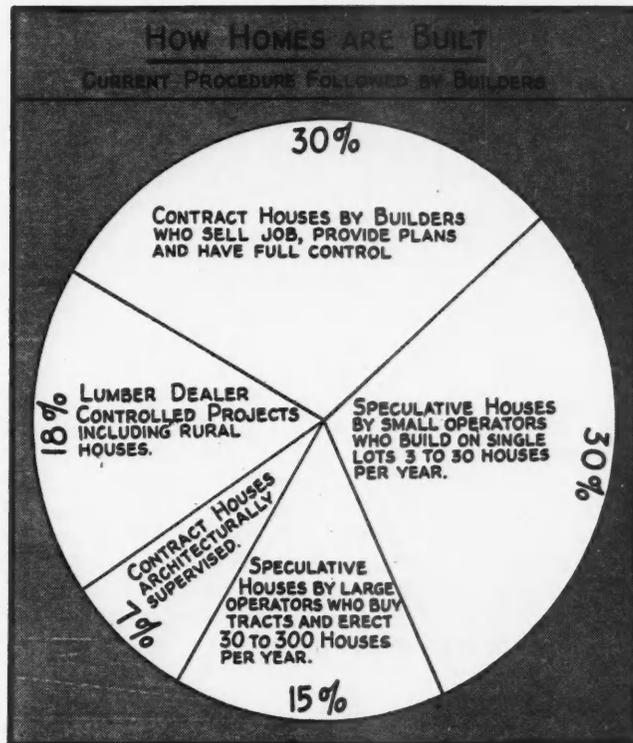
Greatest Credit Reservoir in History

There is in the United States today the greatest credit background for home building in its history. The 21.1 billions of savings bank deposits; the 20.9 billions of life insurance company assets; and the 7 billions of building and loan association assets form a credit reservoir for home building greater than exists in any other nation or has ever existed in this nation. It may be truly said that if ample credit can make a building boom we will have a boom.

The year 1935 will be historic to building men as the year in which the long-term amortized mortgage was successfully put into operation and completely displaced



the old form of costly first and second mortgage financing. The year 1935 will also be remembered for other measures taken to liquify and amplify residential mortgage credit. Under the Banking Act of 1935 amortized loans were given a liquidity comparable to any sound asset. Under the provisions of the National Housing



Act and the Home Loan Bank System, credit channels were opened up that make available funds in great quantities for home building. The absorption of some 3 billion dollars of distressed mortgage loans by the Home Owners' Loan Corporation in effect placed that much additional funds into the mortgage market. All of these factors lay the foundation for an unprecedented credit expansion for home building. It is true that only a small start was made in 1935, but in an industry as gigantic and ramified as home building and its financing institutions, slowness is unavoidable.

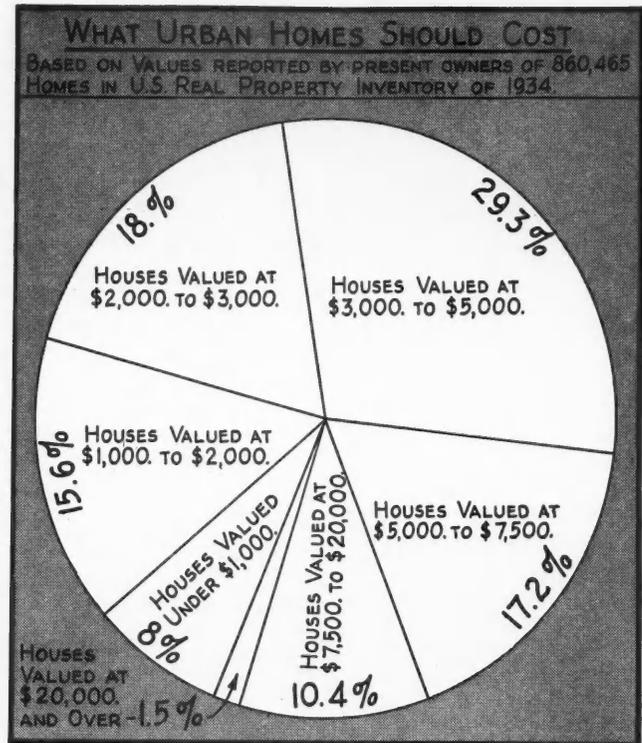
The fact remains that a start was made and that by the end of the year many banks, insurance companies and building and loan associations were actively competing for sound mortgage loans and were stating their willingness to take all they could get. How leading life insurance companies increased their loans is shown in an accompanying chart. It is to be expected that this competitive situation will increase in 1936 and greatly enhance the flow of funds into the mortgage field. A gradual lowering of interest rates is predicted in some quarters as a result of this competitive situation. The Committee for Economic Recovery has pointed out, in a thorough and carefully developed analysis, that mortgage money should be available for soundly planned and well built homes at a cost of 4½ per cent, which is the rate prevailing in England, where a housing boom has been in progress for several years. Any movement towards lower interest rates, however, it is generally conceded, will be over a period of years, and no immediate or sharp reduction is considered imminent by students of financing methods.

Where Homes Are Built

The houses to be built in 1936 will be located in thousands of small towns and rural areas, as well as in the cities. This is a point not to be overlooked by analysts of the building industry. To get a picture of the market, the following population distribution figures from the 1930 census should be considered:

Farm Population	30,160,000
Rural Population Not on Farms.....	14,480,000
Rural Population in 13,400 Incorporated Places of	
Less than 2,500.....	9,200,000
2,200 Towns of 2,500 to 10,000.....	10,615,000
791 Small Cities, 10,000 to 50,000.....	15,522,000
178 Medium Sized Cities, 50,000 to 500,000.....	21,988,000
13 Big Cities, 500,000 up.....	20,839,000

The urban building that goes on in the larger cities is well covered by the U. S. Bureau of Labor Statistics reports in 776 towns. These towns, however, represent only 54½ million population, or 44 per cent of the total. Persons interested in getting a complete picture of home building should not neglect the 14,480,000 persons listed above who are a rural population *not on farms*. They should also consider the homes built in the 13,400 incorporated places of less than 2,500. They must not neglect the homes that will be built in 2,200 towns of 2,500 to 10,000. There is much evidence to indicate that due to the improvement of farm purchasing power and better small town and rural business conditions, the revival in small town home building will be even more vigorous than in the urban centers. In fact, an analysis by the Federal Home Loan Bank Board, Washington, released on December 4, shows that 1935 home building activity has been greater in the smaller cities.



"Smaller cities showed a greater rate of home building than did larger cities during the first nine months of 1935," the report states.

"In this period building permits were granted for 41 per cent more dwelling units per 10,000 of the population in cities of 10,000 to 25,000 inhabitants than in cities of 100,000 and over."

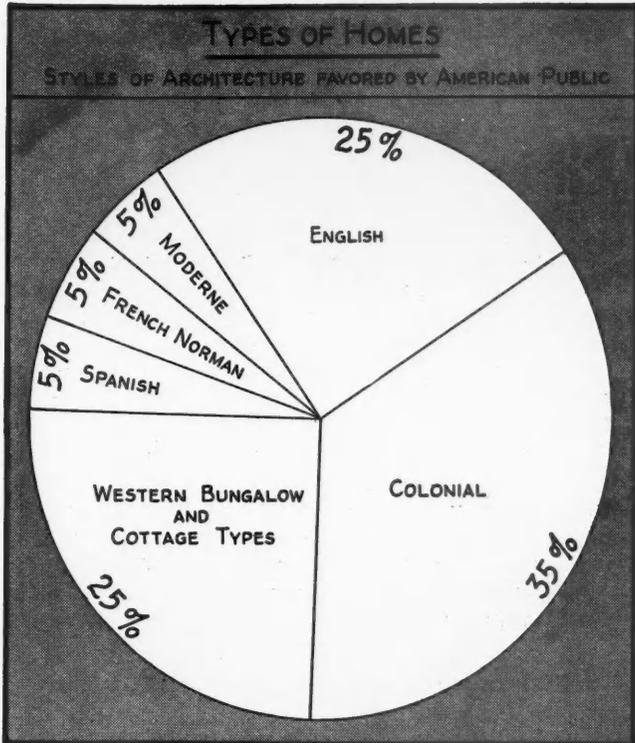
American Builder investigators have found signs of unprecedented residential activity in small Mid-western and rural Southern towns. The only statistical report of home building in the smaller towns and outlying areas is the sales of lumber and building materials. Reports from dealers in widely scattered areas give conclusive evidence that a strong revival is under way. Reports of leading manufacturers of lumber, sash and doors, hardware and other products show sales in rural and small town areas equal to or greater than volume placed in the cities. Although exact statistical proof is not available, the best analysis indicates that at least 50 per cent of the homes built in 1936 will be located in towns of 10,000 or under.

Methods of Building

In an industry as diversified and widespread as residential construction, a variety of home building procedures is followed. There is widespread misinformation about the methods of building for the country as a whole. In general, the following five methods of procedure are prevalent. On the basis of present practices, percentage of work to be done by each group is as follows:

1. Contract houses built by a contractor who finds the prospect, sells him the idea, provides plans, and retains full control of the job. In the low-cost market expected next year, analysis indicates *this group will perform 30 per cent of the new residential work.*
2. Speculative-built houses by small operators who put up three or four or a dozen houses on speculation during the course of a year, and at the same time do

AMPLE CREDIT—HOUSE SHORTAGE—RISING RENTS



whatever work they can get on contract. These builders buy single lots, sometimes in realtor subdivisions, but more often in key spots of their own choosing, and erect houses for sale. Estimates of the importance of this group indicate they control 30 per cent of the home market. There is a large overlapping between this group and group one, and in many respects they might well be merged, for most residential builders are engaged in both contract and speculative work.

3. Speculative-built homes by large operators who buy a tract of land and put up groups of houses ranging from ten to several hundred. They are typified by certain large Long Island and New Jersey operators, as well as realtor-type builders who, because of the spectacular nature of their operations, are frequently assigned greater importance than they actually have for the building field as a whole. The actual number of such operators is small. They should not be confused with land developers and real estate men who develop tracts but do no actual building themselves. Lumping the large-scale speculative builders together, it is estimated they will build 15 per cent for the country as a whole in 1936.

4. Architecturally-supervised contract jobs. Individually-designed homes in which supervision is in the hands of an architect make up a small percentage of the volume residential market. Best indices indicate 7 per cent of the 1936 home market will be controlled by this group.

5. Contract houses built by a carpenter-builder or subcontractor, working out of a lumber yard, where the lumber dealer does the selling and retains a large measure of control of the job. This practice is prevalent in many cities, and methods vary from cases where the dealer actually handles the general contract to a system in which the dealer does most of the selling, planning and financing but turns the contract over to a builder who agrees to purchase materials from him. Included also are the farm and semi-rural homes largely controlled by lumber dealers. For the country as a whole

this type of operation represents 18 per cent of the home market.

Every statistical report indicates that the great volume of residential building in 1936 will be in the moderate and low-priced field. It is estimated that 90 per cent will be priced to sell at under \$10,000 and the largest market will be from \$5,000 to \$7,500.

Price Classes of Houses

Analysis of a number of fairly recent statistical studies shows why the market must fall in this classification. In 1934 the Real Property Inventory conducted in 64 cities by the U. S. Department of Commerce showed the overwhelming majority of houses now existing to be valued under \$10,000. On the basis of reports of owners of 860,465 single-family houses, the values stated were as follows:

VALUE OF OWNER-OCCUPIED HOMES
Value of Single Family Owner-Occupied Homes as Reported by Owners, 64 Cities Combined. R.P.I. 1934.

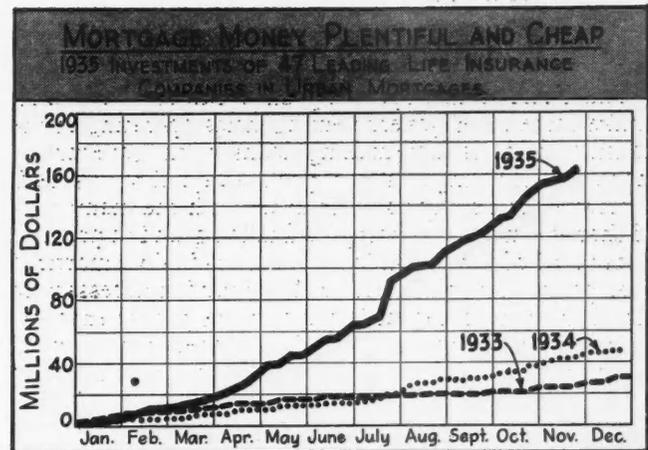
Value	Number of Homes	Percent of Total
Total	860,465	100.00
Under \$1,000	68,894	8.01
\$ 1,000—\$ 1,499	61,651	7.16
\$ 1,500—\$ 1,999	72,313	8.40
\$ 2,000—\$ 2,999	154,730	17.98
\$ 3,000—\$ 4,999	250,515	29.11
\$ 5,000—\$ 7,499	146,921	17.07
\$ 7,500—\$ 9,999	46,169	5.37
\$10,000—\$14,999	31,144	3.62
\$15,000—\$19,999	11,405	1.33
\$20,000—and over	12,550	1.46
Not reported	4,173	.49

It can be seen from the above analysis that less than 7 per cent of the houses in 64 principal cities are valued by their owners in excess of \$10,000. The value of rural homes is much less than city properties.

In analyzing the future market for homes in the United States, The Committee for Economic Recovery, previously mentioned, stated that 80 per cent of the urban and suburban homes should be built to sell below \$6,000. The following figures give the Committee's recommendation as to price range:

- 35% of our homes should not cost over \$ 3,000.
- 60% of our homes should not cost over \$ 4,000.
- 75% of our homes should not cost over \$ 5,000.
- 80% of our homes should not cost over \$ 6,000.
- 83% of our homes should not cost over \$ 7,000.
- 86% of our homes should not cost over \$ 8,000.
- 88% of our homes should not cost over \$ 9,000.
- 90% of our homes should not cost over \$10,000.

(Continued to page 74)



HELP HOME BUILDING—RECORD RISE SEEN FOR 1936

Contends FHA is Fair to **LOW COST HOMES**

BY H. F. LANE

Washington Editor, AMERICAN BUILDER

American Builder has challenged the apparent FHA policy of favoring expensive houses and of offering little encouragement to the financing of low cost houses on cheap land. It welcomes the administration's clarification of this issue through interviews with its Washington editor, as reported herewith:

AN IMPORTANT feature of the work of the Federal Housing Administration is its efforts to safeguard the interests of home buyers and investors by establishing minimum standards for the mortgages which it approves for insurance which will create confidence on the part of the public and financial institutions in the type of properties which it accepts for this purpose. For this reason, according to its officials, it is endeavoring to approve only "quality" mortgages, and already they are finding that the public is becoming conscious of this fact to such an extent that it is declining to purchase homes in developments that do not have the FHA approval.

This insistence on the quality of the mortgages to be approved, however, according to these officials, has brought about some misunderstandings and criticisms of its policies on the part of developers whose projects have failed to meet approval unless modified and who have complained that the FHA is discriminating against "low-cost" homes and against properties away from paved streets and other urban utilities. They point to their record of loans approved, averaging less than \$4,000, which means that most of them are very much less than that figure, to show that this is not a fact and assert that many of the lower-priced homebuilding projects which have not been accepted for insurance were rejected not because of the low-cost feature but because the plans presented to them were not economically sound or safe investments.

Must Win Approval of Private Investors

The FHA is not operating on a subsidy basis and, unlike some other government agencies operating in the housing field, is not making loans with government money but is trying to attract private capital to this field. Moreover, in its efforts to do away with the many evils of short-term second-mortgage financing, and to promote a standard of long-term loans to be gradually amortized over periods up to 20 years, it has found it necessary to establish many safeguards which were too often overlooked in the past by a class of developers whose interest in the property did not always continue much beyond the first five years. Its mortgages must stand on their own feet, because they are insured on a mutual basis.

"In establishing a system for the insurance of mortgages," the FHA circular on Subdivision Development says, "the Federal Housing Administration must take cognizance of any condition which produces unusual risk

in real estate investment and mortgage lending. On the other hand, it must not discourage desirable urban expansion. Therefore, while it cannot promiscuously insure mortgages in new areas, it may, by the erection of reasonable safeguards, assist in the development of areas which are needed to care for increasing population or changing modes of living and are so located and planned as to offer the prospects of continuing desirability for residential purposes. The Administration adopts the policy that only the neighborhoods where families may obtain reasonable standards of comfort and amenity and permanent protection and value, within the limits of their capacity to pay, provide a field for secure investment."

Each Project Treated on Own Merits

The subdivision circular also points out that "the Administration does not desire to discourage development and thereby render it necessary for people to accept surroundings which are manifestly unsuitable to reasonable living requirements simply because an apparent surplus may be claimed to exist. On the other hand the Administration does not wish to encourage an unnecessary duplication of existing facilities. Each development therefore must be treated on its own merits in relation to the existence of other areas which are capable of caring for increasing population or changing modes of living and which are so located and planned as to offer the prospect of continued desirability for residential purposes.

"There are many existing developments in favorably located districts which will probably never be more than partially built up owing to serious errors, such as faulty design; failure to reserve, before lots were sold, the right to grade lots and streets to practical and reasonably attractive grades so as to make all lots desirable; failure to provide for installation of a practical sewer system that could be installed at a reasonable cost; failure to place proper restrictions; and other similar defects of plan and organization."

"It is not the sole purpose of the FHA to provide low-cost housing for people with small incomes," said Seward Mott, chief of the Land Planning Unit. "There are other agencies of the government engaged in that field, a primary function of the FHA is to provide low-cost and sound financing for decent homes and to stop some of the practices that have been partly responsible for pulling down real estate values. That does not mean, however, that we are limiting our activities to the more expensive properties. Our requirements are very broad and flexible and adapted to the character of the neighborhoods involved. The Administration does not propose to regulate subdividing throughout the country, nor to set up stereotype patterns of land development. It does, however, insist upon the observance of rational principles of development in those areas in which insured mortgages are desired, principles which have been proved by experience and which apply with equal force to neighborhoods for wage earners as they do for the higher income groups."

(Continued to page 76)

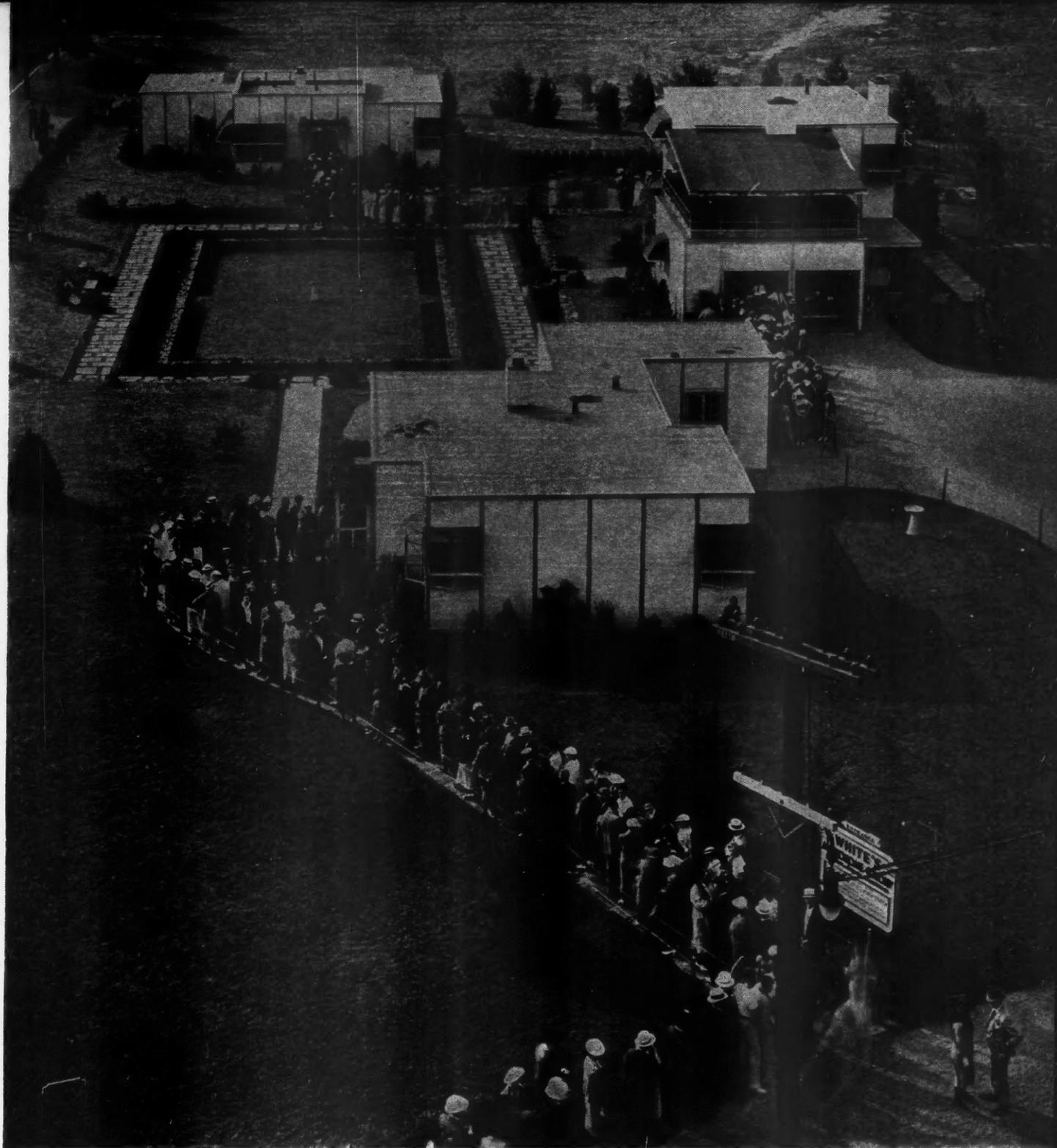


PHOTO SHOWS:—Crowds awaiting opening of new style model homes in Cambridge, Mass. More than fifty thousand people from all parts of the United States visited this demonstration. From foreground to background are four, seven and five-room "Motohomes" around an attractive garden.

KEEN INTEREST IN NEW DESIGNS

American Builder Presents
Selection of Popular Home
Suggestions from Leading
Design Authorities



Well Designed Cape Cod Colonial

This story and a half house in the popular Cape Cod style shown as the House of the Month was selected because of its fine proportions and authentic detail as well as the good construction that make it outstanding. The passageway between the main portion of the house and attached garage gives access to both the service entrance and motor room. Walls of structural tile faced with common brick and painted white are unusual in this size house.

F. G. WALKER, Architect
J. B. HERBOTH, Contractor
Built at Elmhurst, Ill., for
H. D. Zeigler

Cost Key is 2.375-200-
1064-44-28-25.



All views of this house emphasize the thoroughness with which it was designed — the west elevation at the left shows a partly open porch off the living room. The specifications and plans on the page opposite give the main construction points and interior arrangement which includes such features as breakfast nook, first floor toilet room handy to kitchen, ample closet space and cross ventilation for main rooms.

SPECIFICATIONS—

As actually used by contractor.

FOOTING TILE: 4" tile around exterior of all footings or excavated portion; covered with crushed stone or gravel 6" thick.

FOOTINGS AND FOUNDATION WALLS: Foundation—13" concrete; footings 20" wide. Exposed concrete work given one good brush coat Medusa Waterproof white cement.

CHIMNEY AND FIREPLACE: Hard-burned common brick; flues lined full height with burned clay. Morgan Colonial design fireplace frame.

EXTERIOR WALLS: Load-bearing structural clay tile; common brick facing secured by means of non-corroding metal wall ties.

MORTAR: Carney Cement Co., waterproof mason's cement.

FRAMING LUMBER: Sill, studs, posts, girders, joists, rafters, etc.—No. 1 fir or No. 1 yellow pine.

UNDER FLOORS: 1"x6" square edge No. 2 common, yellow pine.

SHEATHING: Sidewalls of dormers—1"x6" No. 2 yellow pine or fir; Roof—1"x6" square edge No. 2 yellow pine or fir.

INSULATION: Second story ceiling and sidewalls of dormers and floor over passage between garage 1/2" Balsam Wool.

ROOFING: No. 1 Grade clear 16" red cedar shingles.

OUTSIDE WOODWORK: Clear, well-seasoned cypress; shutters—clear Pondosa pine or cypress.

FINISHED FLOORS: Except in kitchen, toilet room, entry and nook—13/16"x2 1/4" T and G end matched clear oak; other floors—1"x3" T and G clear fir covered with linoleum.

INTERIOR TRIM: Door jambs, casings, window casings, base, carpet strip, picture mould, chair rail, etc.—white pine.

BATHROOM CABINET: Lawson metal cabinets in bathroom and toilet room with 18"x26" Venetian mirrors.

SHEET METAL WORK: Gutters, downspouts, flashing material—No. 26 gauge Toncan rust-resisting galvanized steel.

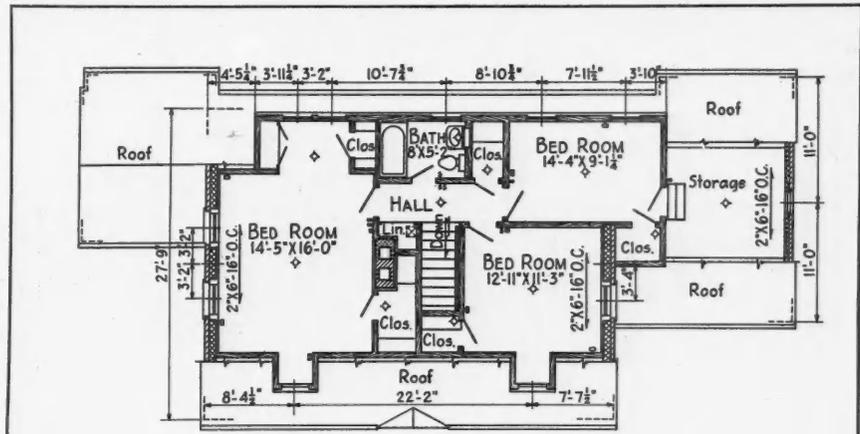
LATH AND PLASTER: U. S. Gypsum Rocklath; Bathroom lathed with 3.4 lb. coated metal lath. Plaster, two coat work; bathroom above tile wainscot, three coat work done with Best Bros. Keene's Cement. Garage and open porch two coat portland cement plaster finish on metal lath.

ELECTRICAL WORK: 14 gauge insulated copper wire in iron pipe conduit.

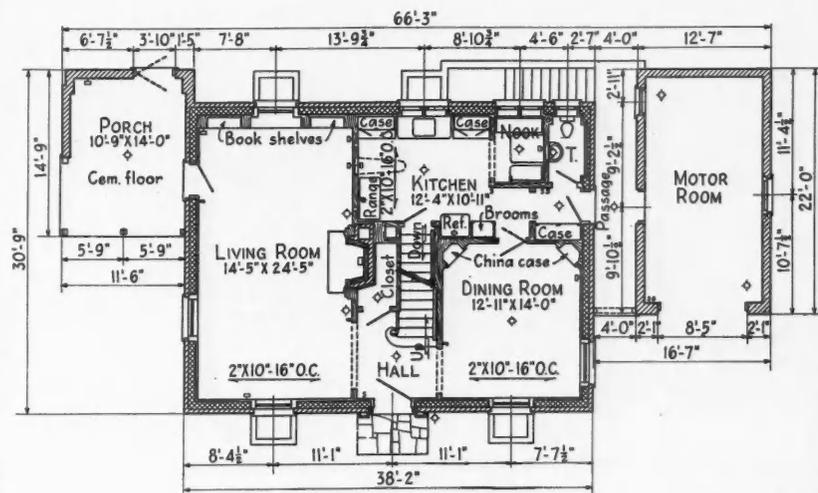
TILE WORK: Tile floor and base in bathroom with tile wainscot 5 feet high above floor and 6 feet over tub.

HEATING: Lennox Warm Air Heating System with Oil Burner and two 175 gal. storage tanks.

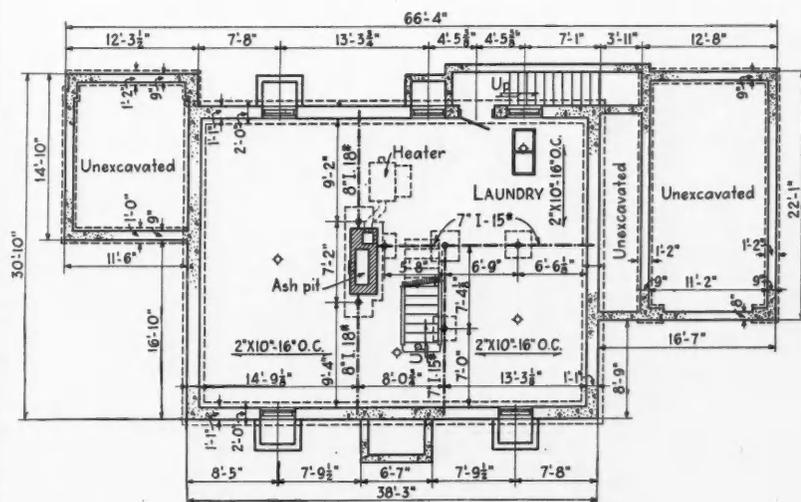
PLUMBING: Kohler fixtures in kitchen, toilet room and bath.



SECOND FLOOR PLAN

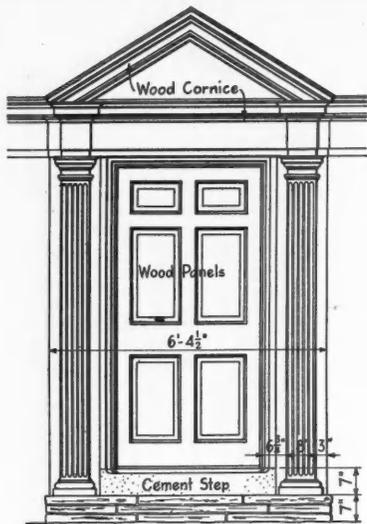


FIRST FLOOR PLAN

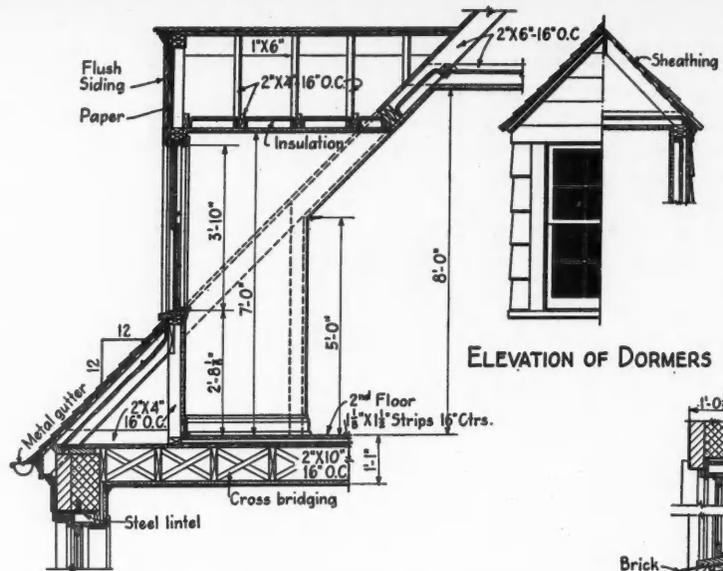


BASEMENT PLAN



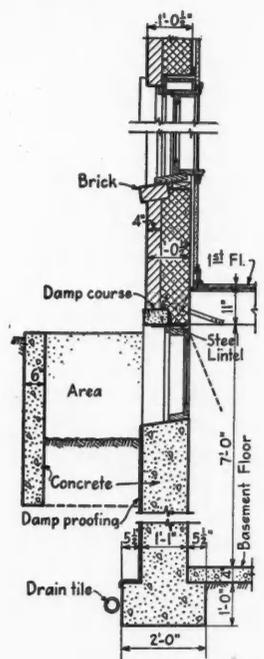


FRONT ENTRANCE

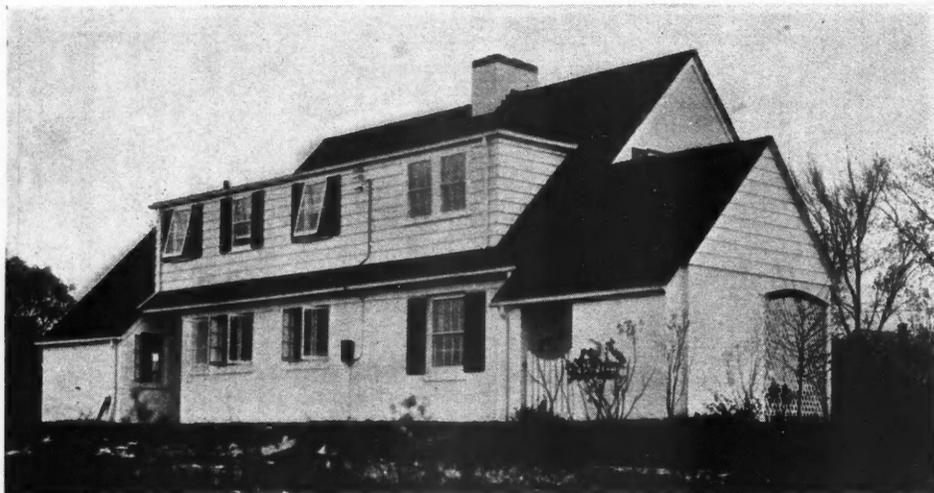


SECTION THRU DORMER WINDOWS

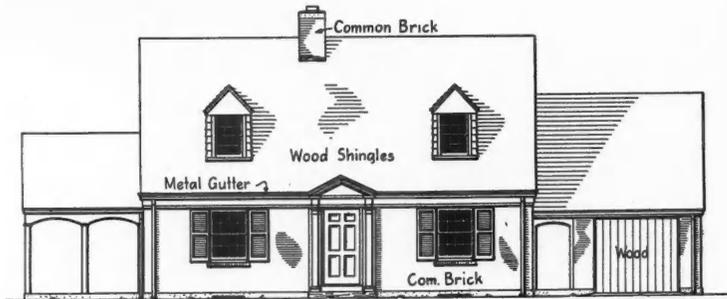
ELEVATION OF DORMERS



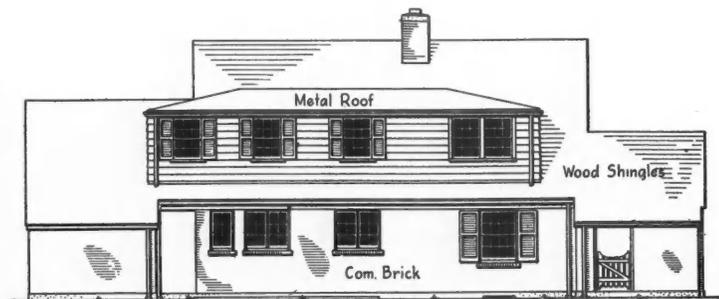
FRONT WALL SECTION



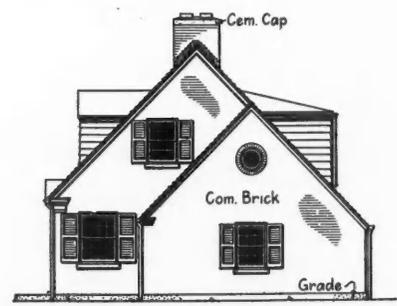
LEFT ELEVATION



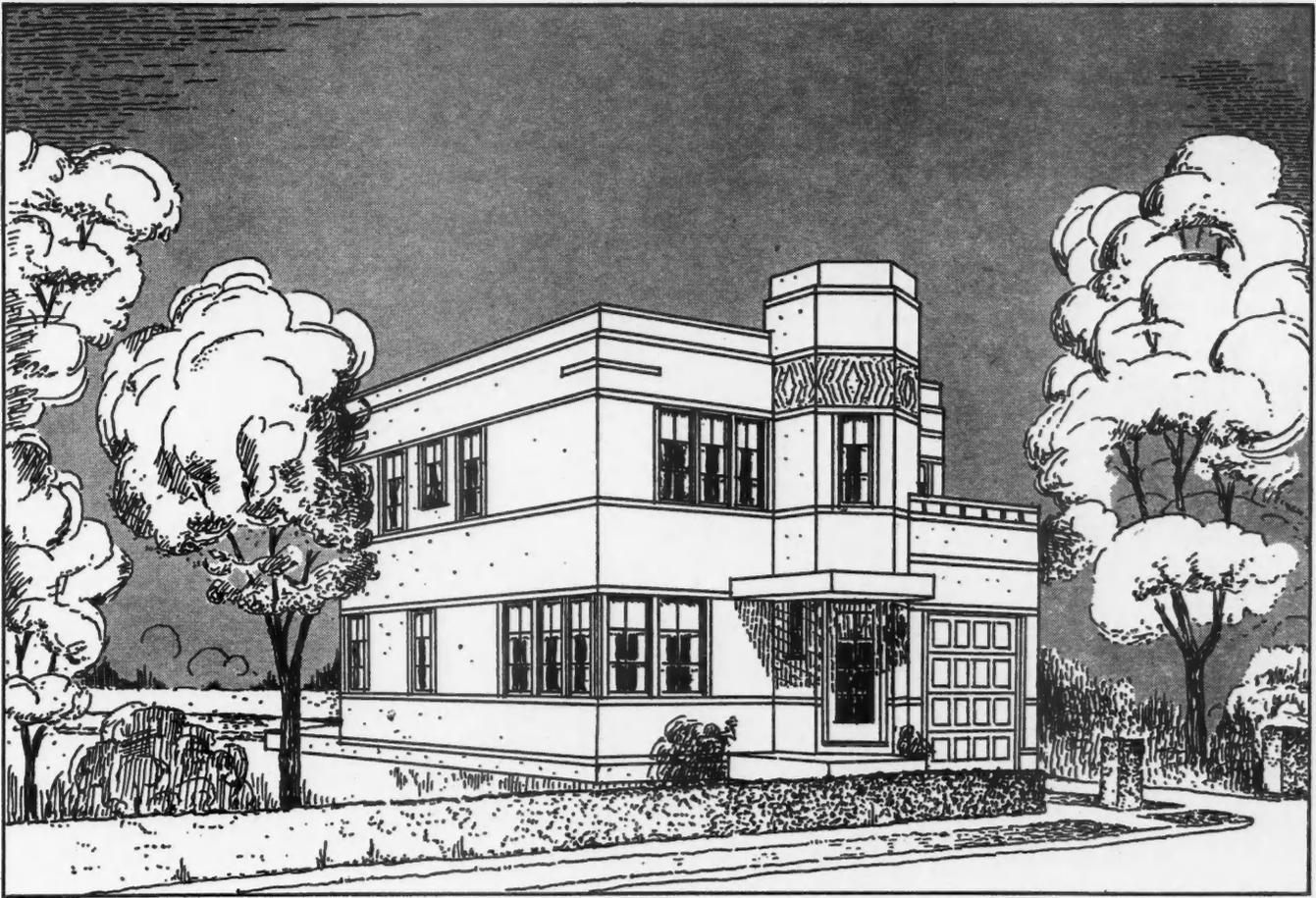
FRONT ELEVATION



REAR ELEVATION



RIGHT ELEVATION

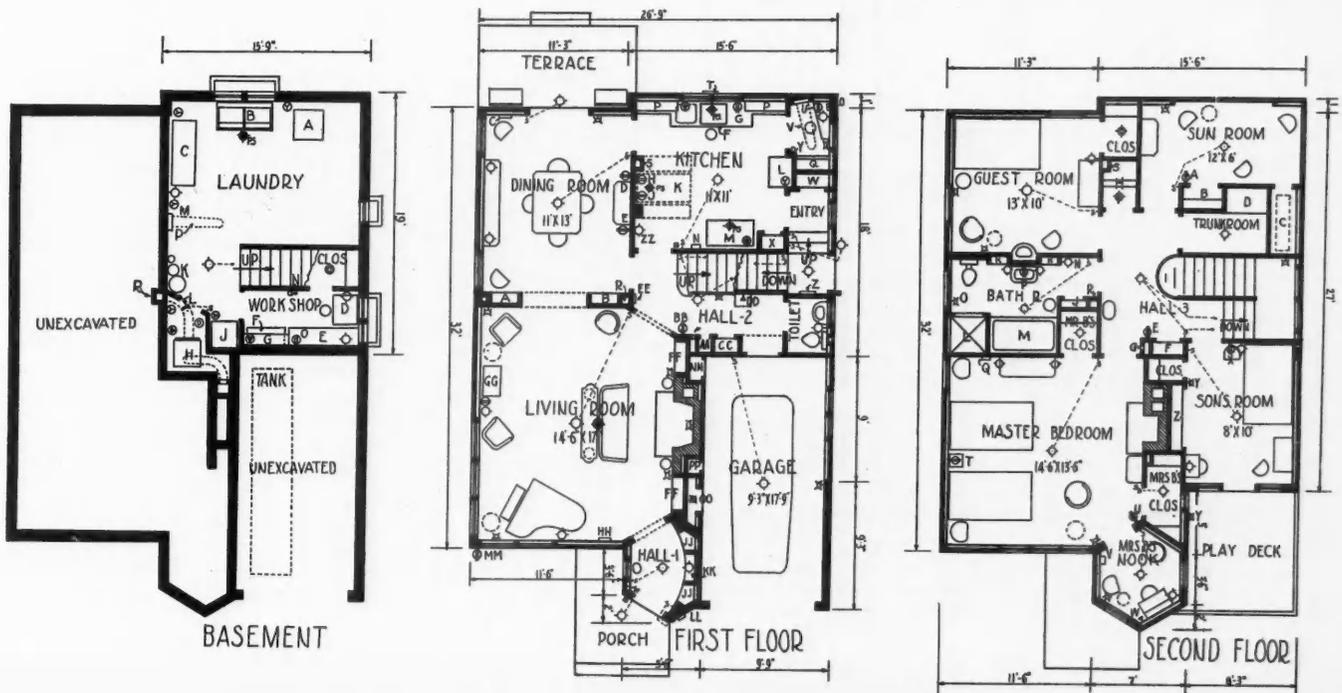


MODERN WITH GOOD PLAN

Cost Key is 2.040—128—

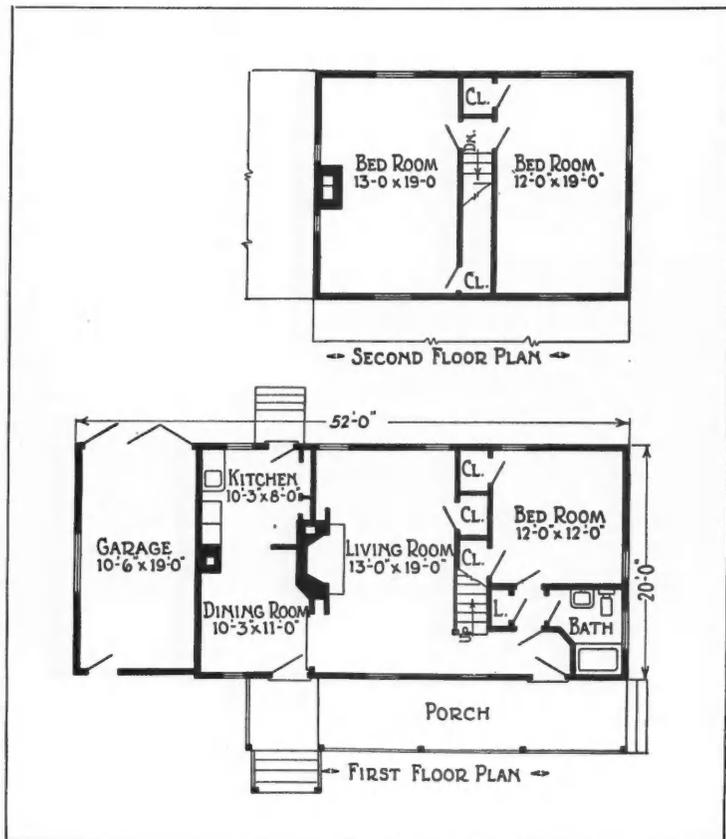
788—34—26—10.

The efficient and workable floor plan is outstanding in this modern design by Charles P. Rawson, Chicago architect. Although space has been given to many extra equipment features, the arrangement is compact enough so that this seven-room house and garage can be well placed on a fifty-foot lot for good light and ventilation. The sun room serves as extra bedroom.





The Edgar Allan Poe Cottage located in Colonial Village, Lake Mohawk, N. J., which sold shortly after completion. Cost Key is 1.674-122-820-35-21-17.



HISTORIC HOMES BRING CROWDS

In Opening Its New Colonial Village at Lake Mohawk, N. J., the Arthur D. Crane Company hit upon the striking idea of featuring famous historic homes. The first half dozen houses built in Colonial Village this year were therefore exact replicas of some of the famous homes of American history. The original proportions and charm were retained as far as possible, but interior arrangement and equipment were planned for modern living. This spectacular promotion idea has attracted great interest and brought thousands of visitors.

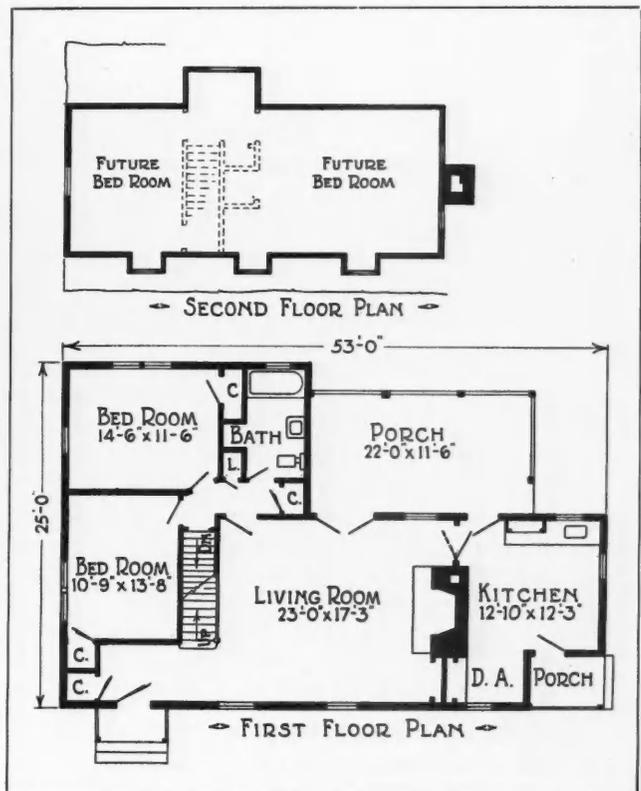
The house illustrated above is the original home of Edgar Allan Poe, located in upper New York, where he wrote some of his greatest poems.

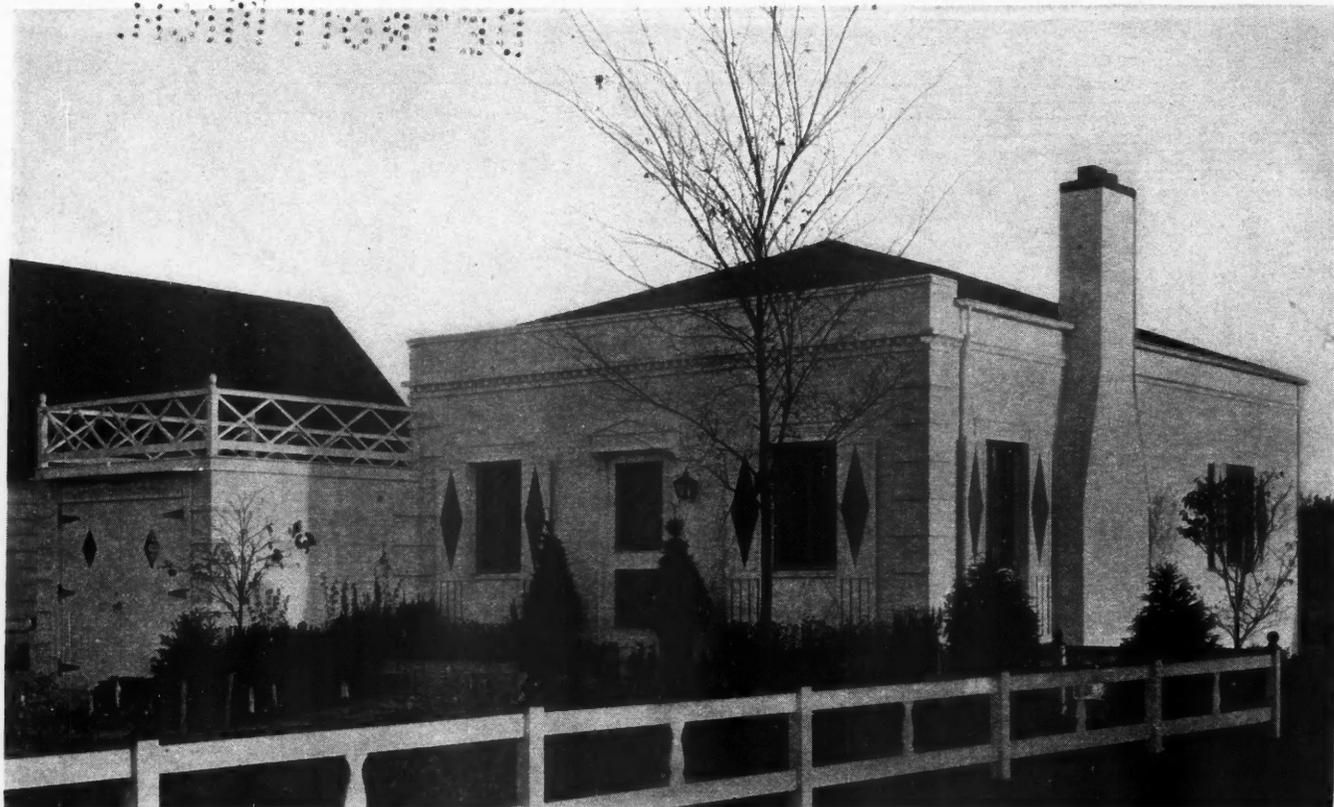


This house is a modernized version of the James Galt house built at Williamsburg, Va., about 1770.



The James Galt House illustrated above is one of the most interesting of the historical homes being featured in the new Colonial Village of the Arthur D. Crane Co. at Lake Mohawk, N. J. It is well lighted and cheerful, and the modernized interior is very pleasant. The fireplace detail above is from the Poe Cottage shown on opposite page.

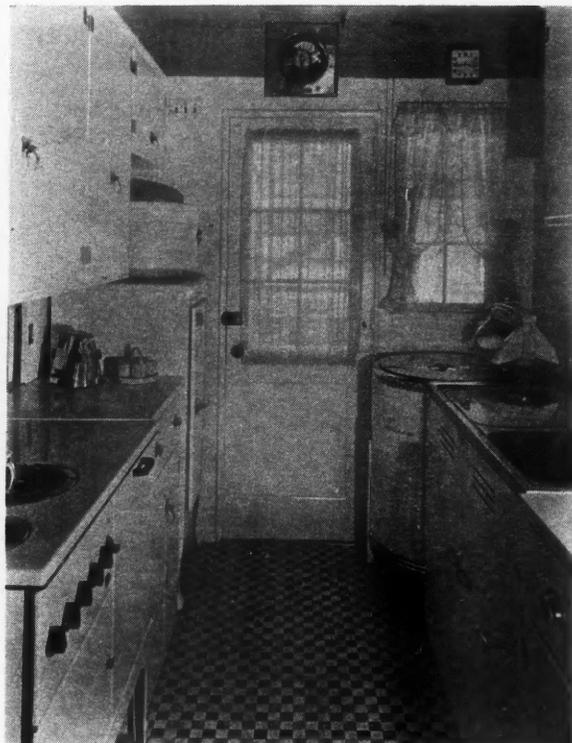
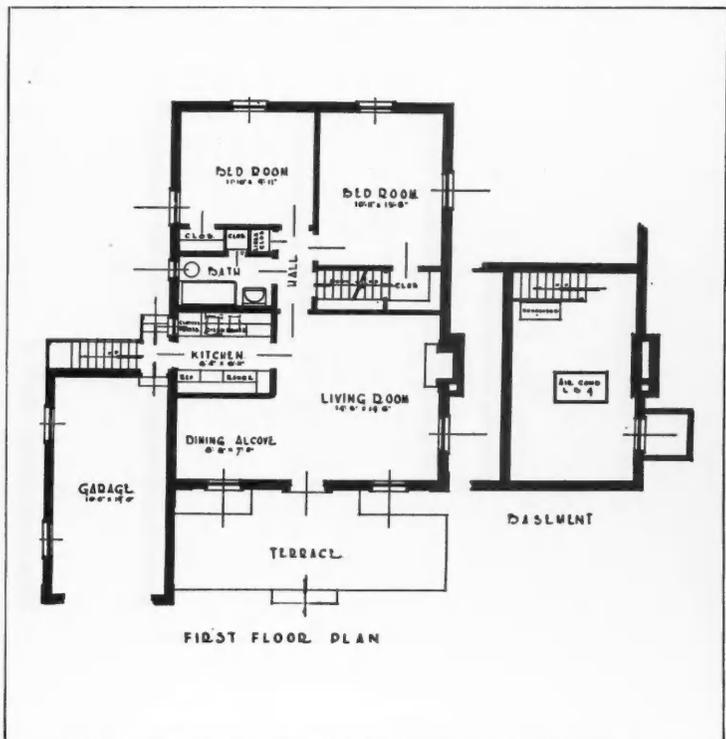




Alfred L. Hart, builder, and Walker & Gillette, architects, have here produced a low-cost, small home that is modern in every way yet pleasing to the eye. It was opened as a G-E "New American" demonstration home at Wantagh, Long Island, in October and features an air conditioning system that will cool kitchen and living room by day, bedrooms at night. The garage treatment is good and the open terrace on top appeals to outdoor living.

SENSIBLE MODERN LOW-COST HOUSE

Cost Key is 1.183-156-816-35-18-12.





Rear View of Wantagh model home shows clever garage and kitchen entrance treatment with attractive stairs leading to the railed-in garage roof.



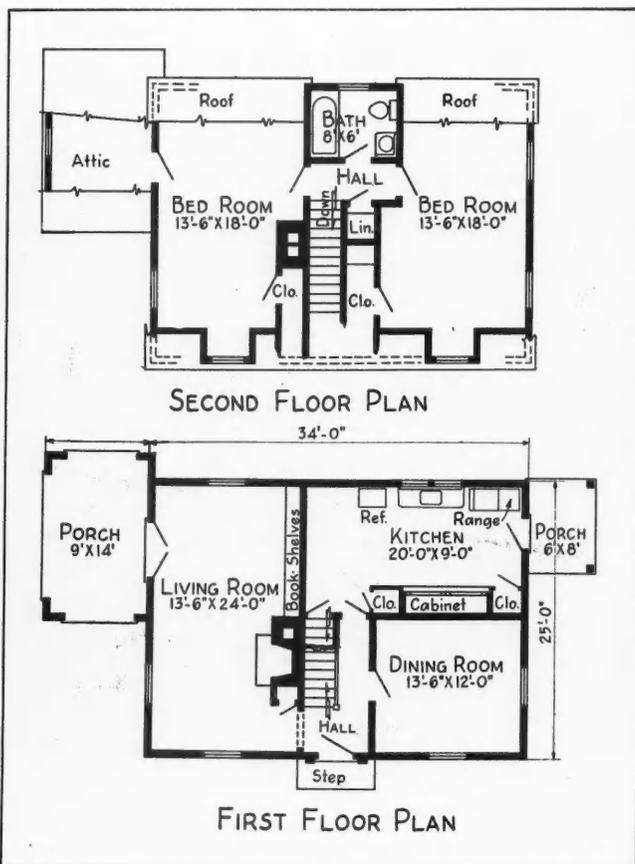
An Important Advance in small house design is shown in this kitchen-dining alcove arrangement. The alcove is an ell off the living room, an arrangement which provides an appearance of spaciousness in both the living and dining rooms. It permits better lighting and better furniture arrangement.



This Simple Colonial was designed and built by Charles Rasque, carpenter builder of Kent, Conn. It is a type of Connecticut architecture that suits the countryside and is built with high regard for good craftsmanship and design. The cost was under \$4,000.

CONNECTICUT STYLE

Cost Key is 1.538-118-850-36-18-17.

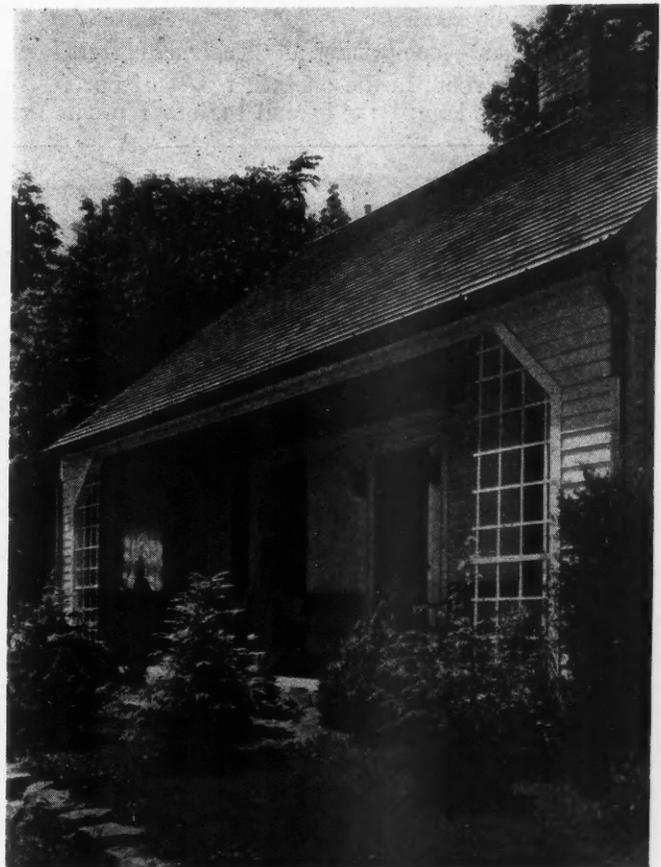
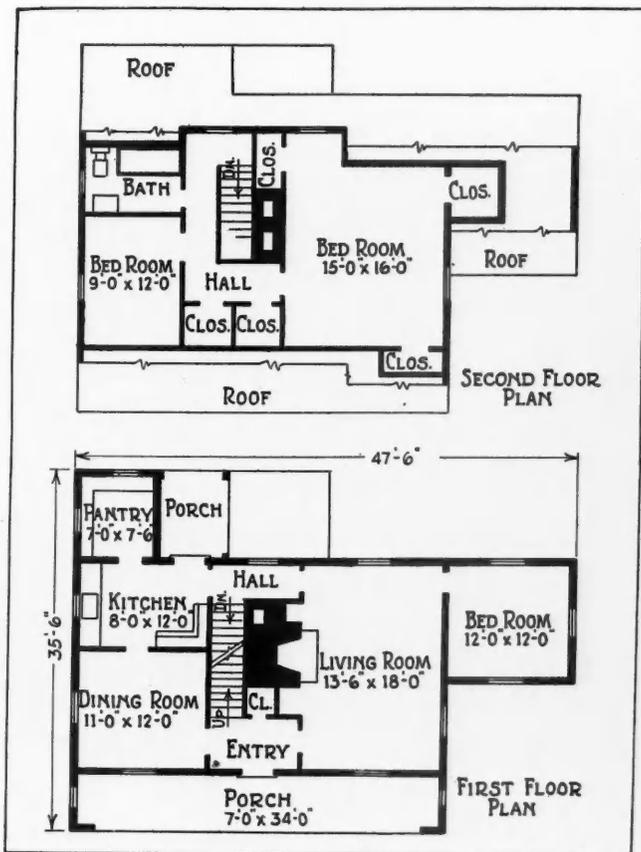




SUPERB PORCH

Cost Key is 1.844-152-962-41-21-19.

Charles Rasque, Kent, Conn., builder, originated the interesting open porch of this house, and it has proved extremely popular.



Planning More Efficient Kitchens

DURING the past decade many outstanding engineering developments of individual home equipment units and materials have greatly relieved the drudgery with which housewives of earlier periods had to continually struggle. The electric refrigerator, range, dishwasher, laundry equipment, cleaning equipment, improved lighting fixtures, better heating systems, and more recently air conditioning either have been or are being developed to a degree of high individual efficiency.

The development of these units and materials forms the basis of our major engineering problem in the residential field—the establishing of the proper relationship between these various units or materials which will change their status from one of an individual unit or material to that of an integral part of much larger units which will perform complete functions, in a more efficient manner.

For proper analysis of this problem we must divide it into two distinct parts:

1. That part which covers construction materials and the general structure of the house.
2. That part which concerns interior equipment and mechanics of operation of this equipment.

The second part of this problem we will further subdivide into three parts:

1. Operative—comprising kitchens, laundries, heater rooms and baths.
2. Recreational—comprising the living rooms, dining rooms and game rooms.
3. Retirement—comprising all sleeping quarters.

There is one room in the operation part of our residence which has lagged far behind the other rooms or

Engineered Kitchen Arrangements Solve the Problems of Properly Locating the Operating Centers

By **IRVING W. CLARK**

Westinghouse Electric & Manufacturing Company

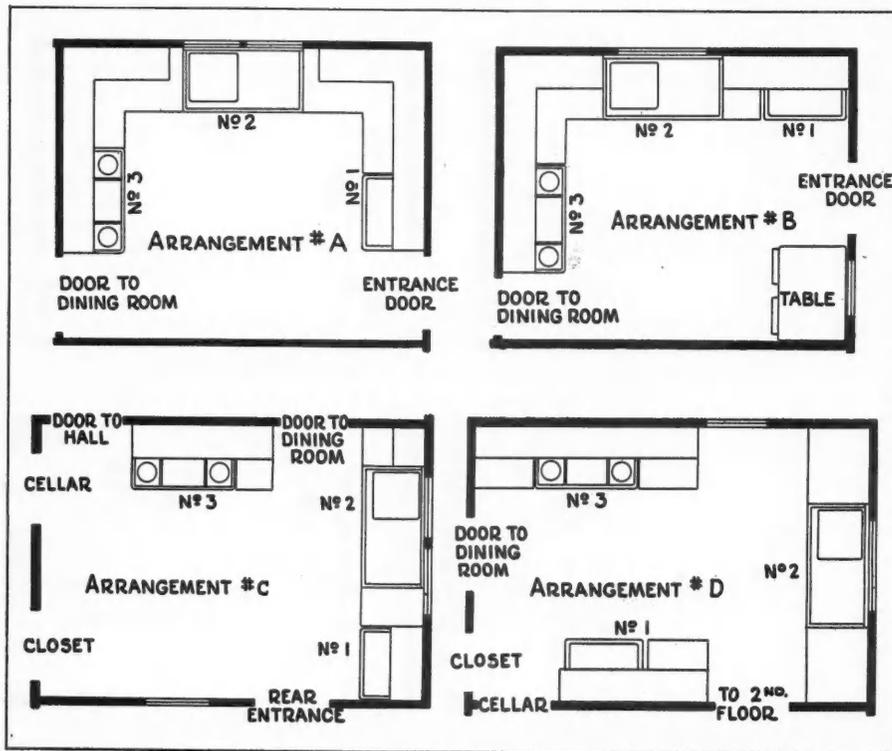
subdivisions. I should, therefore, like to confine our immediate thoughts to certain problems and a report of progress which has been made along the line of a better relationship between the various individual units which go to make up one of the most important parts in the operation of any house—the kitchen. Ninety to ninety-five per cent of the kitchens existing today are obsolete either from the standpoint of equipment or from the standpoint of arrangement.

The same principles which have been the engineers' guide in planning our efficient manufacturing plants are used in developing a kitchen plan. The kitchen is, in reality, the manufacturing part of a house. The "before" and "after" plans indicate the contrast between the average kitchen which, like Topsy, "just grew," and the planned kitchen. (See upper diagram.) The one at the left represents the average kitchen in which the routes of travel to prepare an average meal are represented. The other one indicates the great contrast that careful planning and proper relationship can accomplish.

We have found that in many kitchens which previously required from 200 to 320 steps to prepare an average meal, now by the proper planning and arranging of the work centers the same meal can be prepared in from 50 to 60 steps. This is a decided accomplishment.

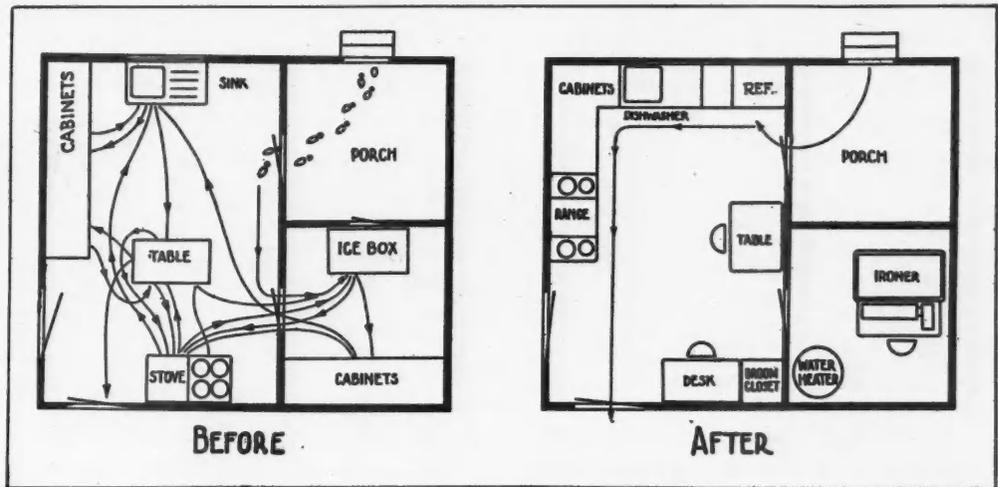
Fundamentally, good kitchen planning is comparatively simple.

Left, possible arrangements of the three operating centers to fit four types of kitchen plans.



On opposite page, the three centers of operation showing the equipment and functions.

Right, "before" and "after" kitchen arrangements indicating the steps saved by proper planning of work centers as compared with an old style layout.



Authorities agree that there are "Three Centers" of operation to this important room. These centers are:

1. The refrigeration and preparation center.
2. The sink and dishwasher center.
3. The range and serving center.

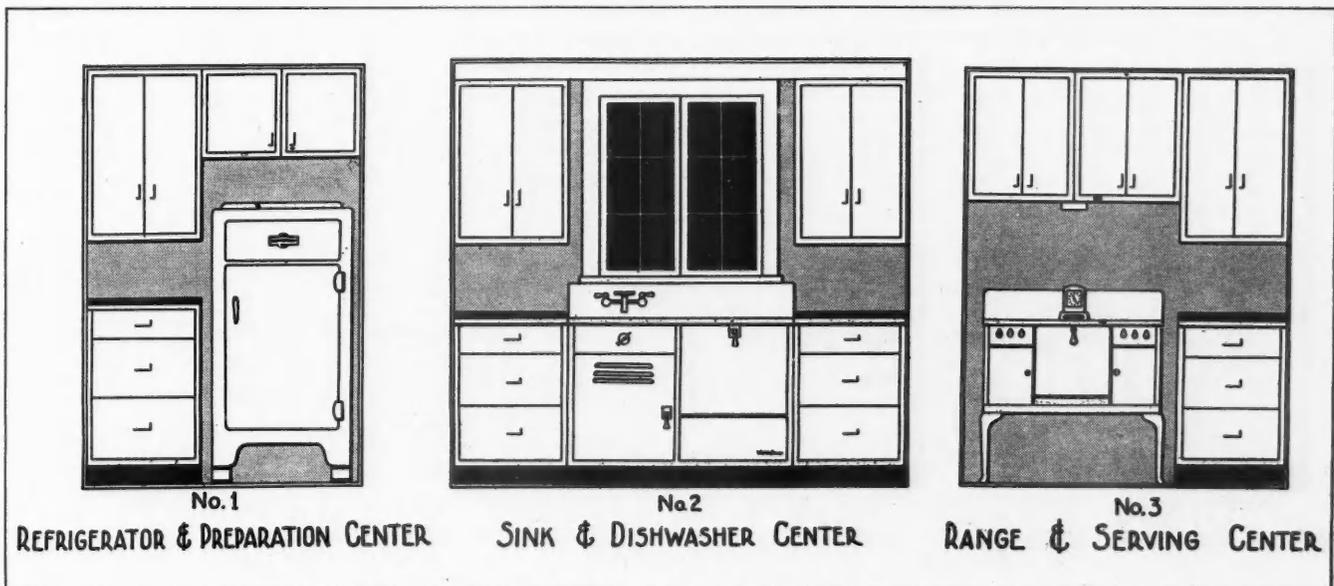
Each of these centers can stand as a complete unit in itself although, as we shall indicate, the relationship between the various centers has a very definite bearing on the efficiency of any particular kitchen.

The refrigeration and preparation center, figure No. 1 below, combines the storage of all perishable goods in the refrigerator, and, in the cabinets above the counter, the storage of staple food materials. The counter surface makes a convenient, properly located work surface upon which to blend these foods, while in the base cabinets beneath the counter surfaces are stored mixing cutlery, flour and sugar and baking utensils. This is quite a contrast to conditions found in the average kitchen where the refrigerator in far too many cases has simply replaced the old ice-box down the back hall, on the back porch, or in far too many cases in a poorly selected inconvenient corner of the kitchen itself.

The sink and dishwashing center, figure No. 2, is the key to kitchen arrangement around which the other centers should focus. It is, therefore, given the No. 2 position which places it definitely in the center between the refrigerator and preparation center and the range and serving center. Here all cleaning operations are performed. Cabinets on either side above the counter surfaces are used for the storage of dishes and glass-

ware, which is quite a contrast to carrying them back and forth to pantries or remote storage cupboards. The saving of both steps and time in this center arrangement is most apparent. Ample counter surfaces on either side of the sink care for the necessary stacking of dishes during cleaning processes. In the base cabinets on each side of the dishwasher sink combination, cooking utensils, cleaning supplies and equipment and a ventilated storage bin for non-perishable vegetables again cut the number of steps in the time element very materially and increase the efficiency of the kitchen operator.

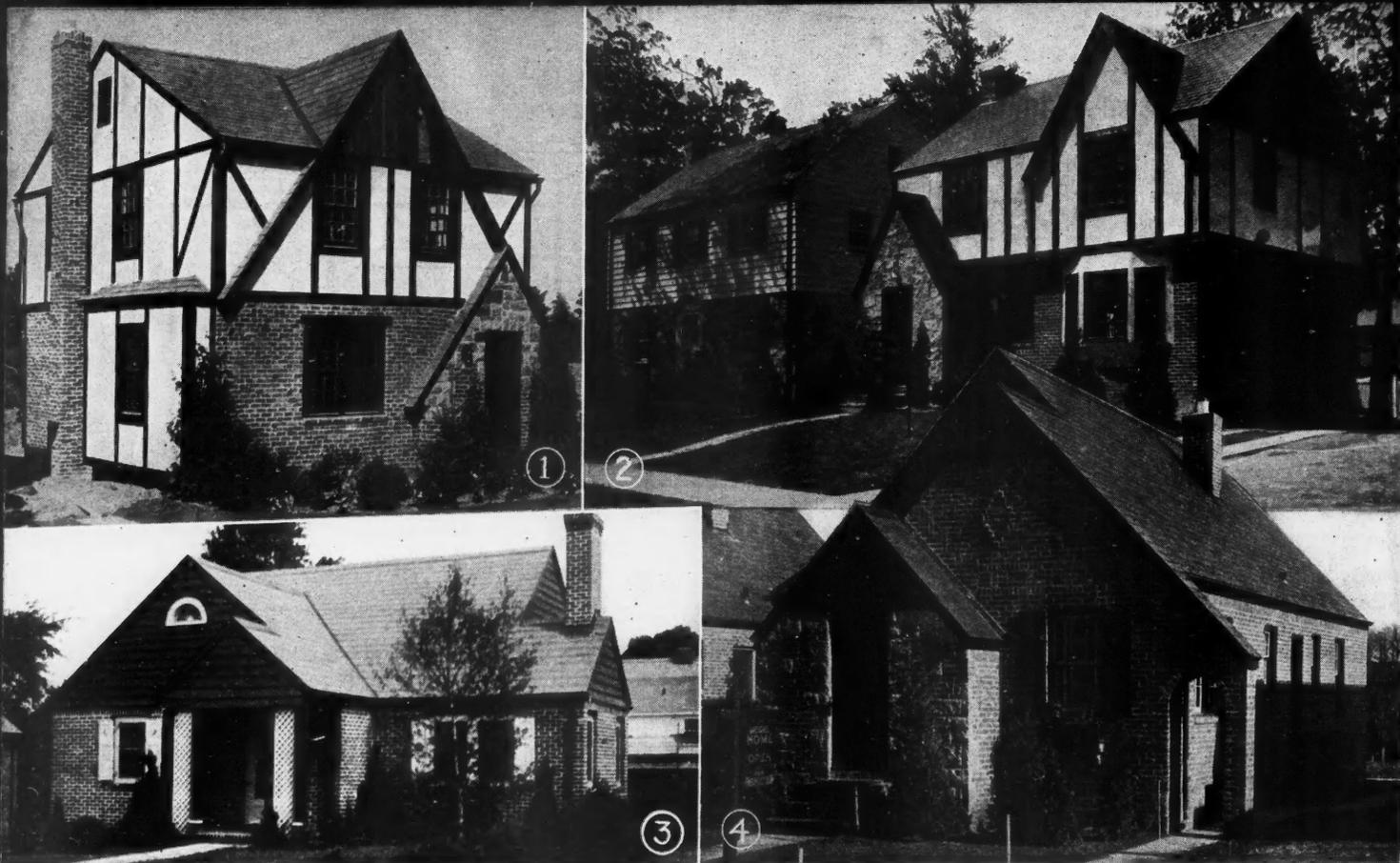
As in the other two centers the range and serving center, figure No. 3, with ample counter surface for the proper placing of serving dishes during the important period of serving a meal has greatly increased kitchen efficiency. The cabinet directly above the range cares for the storage of vegetable serving dishes and platters. Again, this is a contrast to the older methods used in the former hodge-podge kitchen of yesterday when these pieces of serving equipment were stored in the most inaccessible and out of the way places causing innumerable steps and inconvenience. In the cabinet below the counter on the side of the range are stored the necessary cooking cutlery, pastry which is needed in serving, and frying pans which are always used first by preheating at the range. This center, like the others, can stand as a single unit by itself but its efficiency is greatly increased by the proper relationship to the other two centers. The four arrangements on the opposite page show the possibilities of various layouts for these units.



No. 1
REFRIGERATOR & PREPARATION CENTER

No. 2
SINK & DISHWASHER CENTER

No. 3
RANGE & SERVING CENTER



SOME recent homes built for sale near New York: 1. National Housing Associates house at Bayside, sold for \$4,696. 2. Two attractive St. Albans, L. I. homes by Ross. 3. Attractive low-cost bungalow built by Walter Mezick, Teaneck, N. J. 4. One of the Parkside Homes, Inc., at Jamaica, L. I.

"Buying Lots—Drawing Plans"

Operative Builders Prepare for Big Year

OPERATIVE builders, large and small, are buying land, working on plans and making very optimistic preparations for 1936, reports from the field indicate.

The most active year in a decade is indicated by current plans. Spectacular purchases of large tracts in cities and metropolitan areas are sure indications of increased activities. Even more important are the thousands of smaller transactions by the operative builders who put up two or three or a dozen houses a year on single lots.

Large scale operations such as have not been seen for years are getting under way in the New York metropolitan area and in Washington, Boston, Detroit, Chicago, Cincinnati and other key cities.

What are these new home building projects like? How is the work handled? What type of houses are

being built? Who are the purchasers? Answers to some of these questions are indicated by a "high-spot" survey of the metropolitan New York area, certain parts of which, such as Queens County, L. I., Westchester County, N. Y., and Essex and Bergen Counties, N. J., may be described as the most concentrated home building markets in the country. On Long Island the most spectacular recent development has been Bayside Hills, a tract of 116 acres, on which 1,000 homes ranging from \$4,500 to \$5,500, will be built by the Gross-Morton Corporation, of which George Gross is president and Lawrence Morton, treasurer. More than 150 houses have been built since ground was broken this fall, and on December 14 permits were taken out for 54 additional dwellings, 25 by 44 and 23 by 26 feet in size, to cost \$162,000. Arthur E. Allen is the architect on this project.

OPERATIVE BUILDERS

A Monthly Department for the Men Who Plan, Erect and Equip Homes for Sale



CURRENT operative builder styles: 5. Charming Colonial, built by Elmer Blomkvest, near Ridgewood, N. J. 6. English houses by Bellerose Housing Corp., Jamaica, L. I. 7. One of the Fulton homes near Flushing L. I. 8. Row of new houses in Bayside Hills, 1,000-home Gross-Morton project on Long Island.

Wolosoff Brothers, Jamaica, L. I., builders, recently purchased 92 lots on Grand Central Parkway on which they will expand operations following a successful year in their Aladdin Homes development.

J. F. Ittleman, financial consultant announced on December 8 the financing of 306 small residences for St. Albans and Flushing, L. I. They will be built by the Ambassador Building Company, 110 houses in St. Albans; St. Albans Federal Building Corporation, 96 houses; and the Seglin Construction Company, 100 houses in Flushing.

A community of 250 dwellings recently started is making swift headway in Flushing, L. I., by National Housing Associates, of which Arthur Freed is president. Five model homes were opened early in October. Many home projects started this year have been completely sold out and the operators are starting new projects. Levitt & Sons, creators of Strathmore at Manhasset, is one of these. Paramount Homes at 195th Street in Flushing, L. I., have sold out the second section of their project and are now starting a third group of brick and stone six-room houses selling just under \$5,000, located on lots 40 by 100 feet. The builders are A. Edkiss and H. Hiller.

Harry Frankel, general manager of Merrick Homes on Long Island, has announced the opening of a new tract providing space for 105 houses. Plans for seven model houses are under way and will be built for early spring inspection.

A program of 250 medium-priced Cape Cod homes, plans for which were drawn by Benjamin Driesler, Jr., is under way at Hewlett Point, L. I. These are small Cape Cod homes of much charm. The project is under the management of James Dormont.

The 1939 World's Fair project, to be located in Queens County, L. I., is having a stimulating effect on operators in the Flushing-Bayside district where several

hundred houses are under construction this winter. Among these are Friendship Homes, on 166th Street; Skillman Homes, on 203d Street; Gable Homes, 171st; Bloodgood Homes, 172d; Bobrose Homes, Cross Island Boulevard; Meybro Homes, Twentieth Road; Utopia Homes, 147th Street; Sylvania Homes, 193d Street; Independence Homes, 193d Street; Marlene Homes, 189th; Domestic Homes, Oakland Hills section; Paramount Homes, 193d Street; Murdock Homes, Parsons Boulevard at Twenty-fourth Avenue; Krinrud Homes, 194th and Forty-second Avenue, and the Guterman project on Utopia Avenue.

A \$1,000,000 operation which got under way in August is making headway in Hempstead, L. I., known as Hempstead Park Homes. Some 200 six-room dwellings, selling for \$5,000, in English and Colonial styles are planned. Plots average 40 by 100 feet.

October was one of the busiest months in the history of the Jamaica Gardens Corporation, builders of homes at Rockaway Boulevard and New York Avenue, Jamaica, L. I. President of the firm is Louis Levy. An enlarged program for 1936 is planned.

New Jersey operative builders are extremely active this winter and business is running well through into a boom spring. The Teaneck and surrounding areas affected by the George Washington Bridge have experienced a vigorous revival. More than 300 homes were sold in Teaneck and Bogota the first ten months of 1935, and early in December some 100 houses were under construction.

One of the most recent announcements has been by Louis Gold of the American Home and Community Corporation of a new Colonial Village of 210 dwellings, \$6,250 to \$10,000, on a forty-acre tract just purchased. Contracts were let in December for thirty homes of early American style, air conditioned with attached garage. Plans by Eugene A. McMurray.

Rapid progress is being made in Bergen County, N. J. development near Haworth, by William J. Kiely of the Kiely Construction Corporation. These builders will erect 200 dwellings in the \$6,000 to \$9,000 class, on average eighty-foot-front lots. The architect is Edward H. Klein.

The Charles H. Reis development, Kenwood, in Tenafly has been very successful in 1935, and a large program is planned for '36. Colonial homes with stone front, slate roof, oil burner, attached garage, on 75 by 150 lots, are being sold for \$8,900.

Irving Bienenstock, New York builder, recently purchased a tract of five and one-half acres on Clinton Avenue in Tenafly, N. J., for the erection of moderate-priced houses. This operator completed a group of homes in Teaneck early this fall.

Albert Stier, builder, is planning to build 100 Cape Cod dwellings at Garfield, N. J. A new community known as Knickerbocker Village is also making progress near Tenafly, N. J., which will have sixty medium-priced homes on 75 by 110-foot lots.

One of the successful New Jersey developments is that conducted by Fred Ingannamorte of the Kings Builders, Inc., who completed 16 houses on a block near Julia Street, Tenafly early this fall, and a new program involving 14 dwellings has been started on Belle Avenue. Frank A. Leers, Inc. is building a group of 16 houses of five and six rooms on Palisades Avenue, Teaneck.

Much publicity has been attached to the fireproof home development of the McMorrow Construction Company, at Norwood Manor, near Englewood, N. J., Lester C. Burdett, president. Firesafe Colonial dwellings, \$5,950 to \$7,500, are being sold on eighty-foot plots.

Another most successful project that has completed a good year and is going through into 1936 is the Colonial Gardens near Ridgewood, N. J., built by Model Home Builders, headed by Elmer Blomkvist. These are unusually attractive, simple Colonial frame dwellings of five and six rooms, selling from \$6,100 to \$6,650.

A new highgrade residential community near Bloomfield, N. J., was announced in November by the Moreau Realty Company, Charles E. Moreau, president, to be known as Colonial Village. Frederick T. Warner has

been appointed architect for this new development.

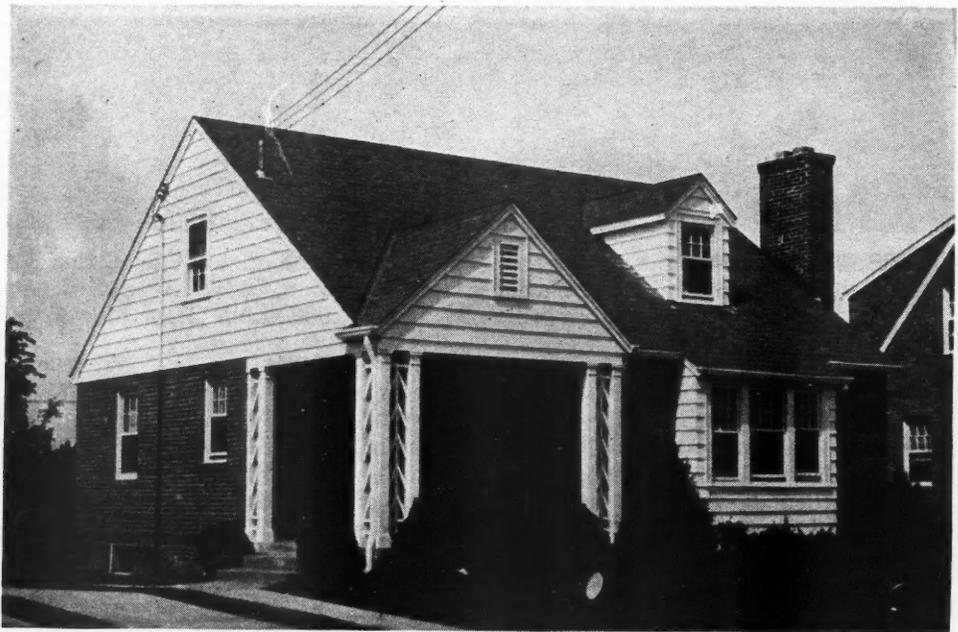
Following a successful season at Basking Ridge, Bernardsville, N. J., several new tracts have been opened up looking forward to an active 1936. Operations are headed by Ellsworth Dobbs.

Building operations in Westchester County, N. Y., have been slower to pick up than the Long Island or New Jersey areas. An unusually active fall has brought Westchester into the foreground with the following large projects:

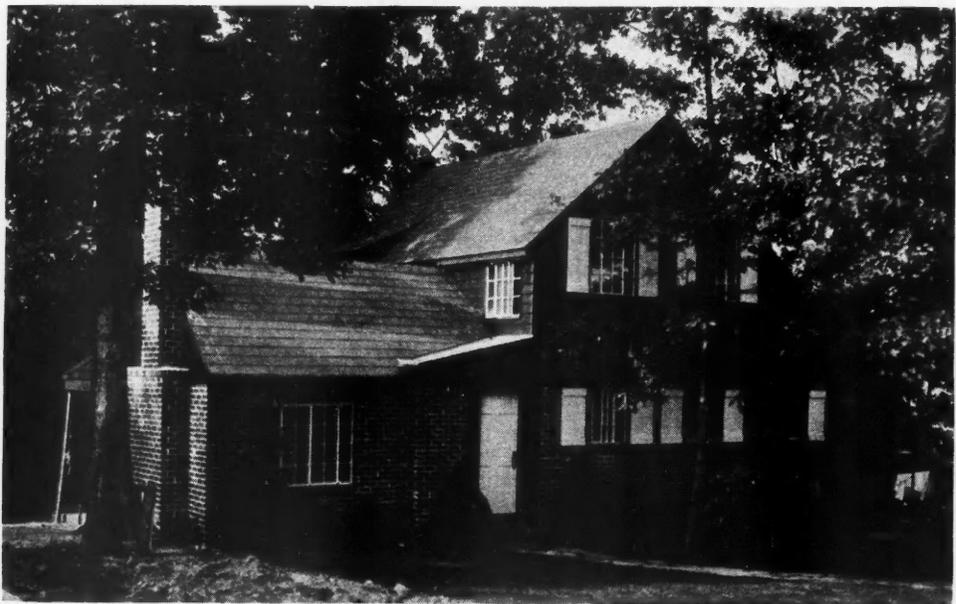
Fifty medium-priced dwellings will be built near Chappaqua, N. Y., in a tract just purchased by Begg Park Estates, Inc., Walter King Cooley, president. Ground was broken early in December for the first four dwellings, to be six rooms, two baths.

Sunwood Homes, Inc., Monroe Marks, treasurer, in November purchased the William Schuster estate near

(Continued to page 78)



TYPICAL low-cost home built for sale near Washington, D. C., by Goss Realty Co.



ONE of the first new homes built this year in Permanesque Homes Village near Washington, D. C.

MODERNIZATION

"which makes buildings of all kinds more cheerful, more livable and more salable"

Concrete Restores Old Mission

Modern Construction Comes to Rescue of Old San Jose Mission near San Antonio

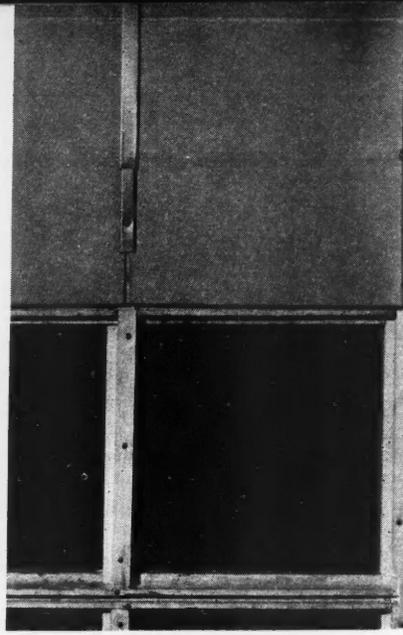
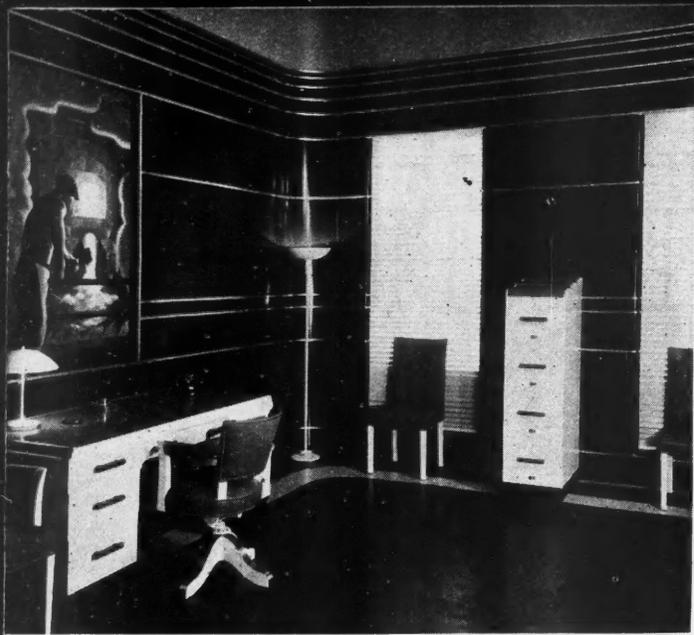
THE partially ruined Spanish missions which have stood near San Antonio, Texas, for more than two centuries, are being restored with modern materials. The first actual reconstruction is under way on the largest of all the missions, the famous San Jose Mission, built in 1721 and called by historians, "Queens of all the Missions in New Spain." Here relief workers, under the supervision of Harvey P. Smith, architect, are rebuilding the roof of the old granary, which collapsed in spite of four-foot stone walls and flying buttresses; replacing the great fallen dome and vaulted roof of the chapel itself and strengthening the thick walls with reinforced concrete.

"When the work of constructing the dome and the vaulted roof over the church, as well as the roof of the granary, was started," Architect Smith said, explaining what has been done on the San Jose Mission, "a very careful examination of the remaining walls was made. They were found to be in such a precarious condition structurally, that it was decided that the load of the new concrete roof and dome would have to be carried down separately through the walls to individual footings so that no additional load would be placed on the ancient walls. Even though the walls were four feet thick with added three foot pilasters and buttresses inside and out, this was not sufficient to overcome the handicap of poor mortar and stone used in the original construction. It was determined this time to use a permanent construction, and, therefore, reinforced concrete was chosen for the structural work of the roof and dome."

Slots were chiselled in the pilasters of the original walls so that reinforced concrete columns could be placed. These rested on concrete footings on good bearing soil well below the old walls.



Famous Old Spanish Mission near San Antonio, Texas, is being rehabilitated and strengthened with reinforced concrete.



Left, walls of research director's office of "velvet matt" enamel; a close-up view of the construction showing the vertical T-bar, horizontal U-bar, panels and the stainless steel strips covering the caulked joints.

ENAMELED SHEETS

for Wall Finish

A method of applying vitreous enamel panels developed and successfully used to remodel the laboratories of a Chicago plant shows that this new system has many construction advantages.

THE DISCOVERY of iron ore and porcelain enamel is lost in history; however, it is known that the ancient civilizations of Egypt, India, Assyria and Persia owed much of their development to iron, and it is also known that they were among the earliest enamellers, using copper, bronze and even precious metals. Until quite recently porcelain enamel was manufactured and applied by a more or less hit-or-miss method. Then shortly before the World War the iron and steel industry developed a special ingot iron sheet, designed especially for porcelain enameling.

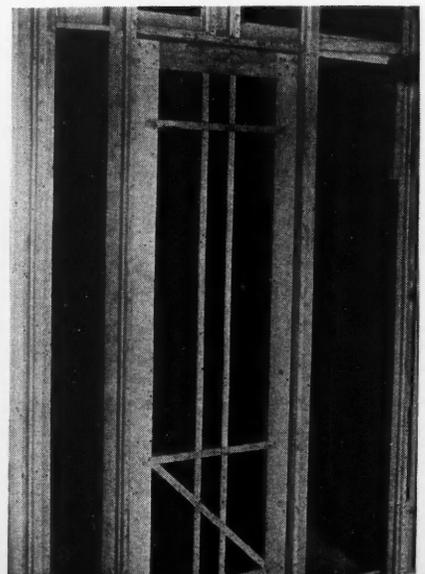
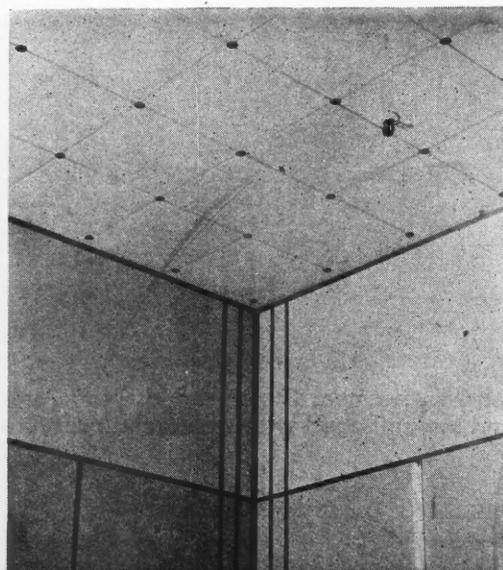
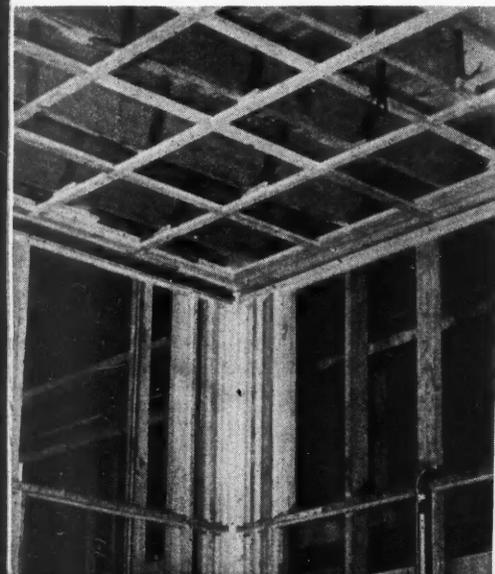
During the last few years various new types of finish were discovered and the methods of application

were improved for use on refrigerators, washing machines and many other products. Experiments on the possibilities of porcelain enamel as a building material were likewise conducted by several companies in this field—one of them being in Chicago Vitreous Enamel Products Company of Cicero, Ill.

After several years of work on the part of experts of this company, and consulting architects and engineers, in perfecting a system of construction, a decision was reached to remodel the company's laboratories as a demonstration of what could be done with the new system. Some of these laboratory rooms and the construction methods used are illustrated on these pages.

In the analytical chemical laboratory pastel green enameled panels have been used. The only horizontal line in this room is formed by a stainless steel trim strip three feet below the ceiling. Above it are ivory enameled panels 20 inches square. This room which, like most of the other sections of the laboratories, is lined with acid-resisting porcelain enamel, has been designed to demon-

Below, ceiling furring strips, studs, and corner pieces ready for panels; the same corner after the panels and strips have been attached; wood framing of the chemical laboratory door before being covered with enameled sheets.



Right, construction view of the shower and locker room; aquarium scene done in enamel panels covering the walls of this attractive wash room.

strate how porcelain enamel on metal may be used in places where the utmost in cleanliness and sanitation must prevail, such as in hospitals, milk and food handling plants and breweries.

The office of the director is a room having no sharp angles. It is rounded off into large radius corners, utilizing curves, all running in parallel planes. The walls are of egg plant porcelain enamel and the ceiling is masonite, painted bright green with two bone white stripes following the room's contour.

A porcelain enameled mural representing an aquarium extends around the locker and shower room. The room contains lockers for the laboratory personnel, two porcelain enameled toilet stalls and a porcelain enameled shower stall. A feature of the latter is a non-skid floor of porcelain enamel.

The new type of construction introduced in the laboratories is relatively simple. One innovation is the use of No. 24 gauge steel for the base metal. In addition to the panels and stainless steel trim, only five elements are involved:

1. General type of wall studding (2 x 4's). (While wood was used in this installation, steel studding is readily adaptable.)

2. Furring strips are placed over studding and may be arranged for stainless steel strips to run horizontally, vertically or both ways.

3. A U-bar is used where there is a flange joint, with the flange of the enameled panel fitting inside of the U and being caulked with a plastic compound.

4. A T-bar is used where there is a stainless steel panel strip, with the edge of the panels resting on the face of the T-bar, and covered with a stainless steel strip which is caulked underneath. Another strip of stainless steel is snapped over the covering strip for appearance.

5. An angle bar is used for ceiling, coping or base. In this instance a special prefabricated piece is used in which a stainless steel cover strip is fastened to the angle

bar at its base and filled with caulking. Panels are then slipped between the folded edge of the strip and angle bar, and the spring tension of the stainless steel holds it in place.

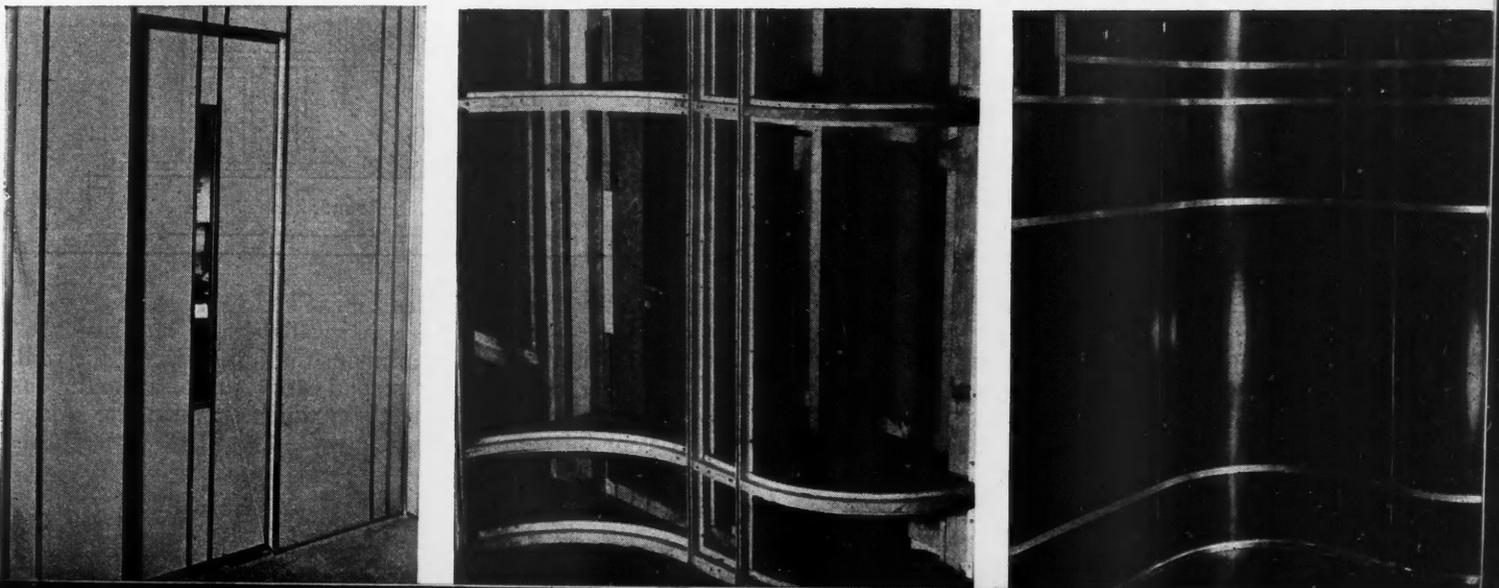
Panels for the laboratories are veneered to $\frac{3}{4}$ inch Celotex. This flattens the sheet, prevents sweating and insulates panels for heat, cold and sound. After insulation the panels fit into the framework of the furring so that edges of the metal panels rest on wood, at the same time permitting the Celotex to fit into a wood frame. To permit this on flat panels, the Celotex is cut back a short distance from the edge.

The stainless steel strip used for this purpose is in the form of a U-shaped track containing a caulking compound and is placed over the raw edges of panels. This is screwed to the wall and seals the edges, permitting expansion and contraction to the extent that it results in a floating panel and at the same time seals the building.

By utilizing a new method for porcelain enamel on metal construction and introducing new architectural enamels, the Chicago Vitreous Enamel Product Company has attempted to do two things: provide the most efficient place possible in which to conduct its research development and control of porcelain enamels; and to demonstrate in its own plant a new and practical method of porcelain enamel on metal construction.



Below, completed laboratory door having few horizontal ledges for sanitary purposes; corner framing in the director's office; curved panels showing design possibilities of this new system of wall construction.



How to Build STORM-PROOF

AT VARIOUS times during the past year newspapers have carried stories of damage done to communities by storms and quakes. Homes and other buildings in the South, West, and Northwest particularly have been subjected to the forces of nature—some properties being totally destroyed, some badly wrecked and others escaping with but small damage.

Pictures have shown a row of structures where the so-called freaks of the storm would single out certain structures to be the casualties. However, it is conceded that on the average, the poorly constructed building is the one that suffers the greatest damage regardless of location, as compared to the well built structure.

With these recent cases of destruction still fresh in mind, a summary of some of the features of good construction should be of value to builders in all parts of the country as well as in those areas which have experienced storms and tremors. The following *fifteen points* represent good building practice, and when applied will provide assurance that the structure will have a better chance of coming through than the poorly built one which might be next to it.

Points of Correct Construction

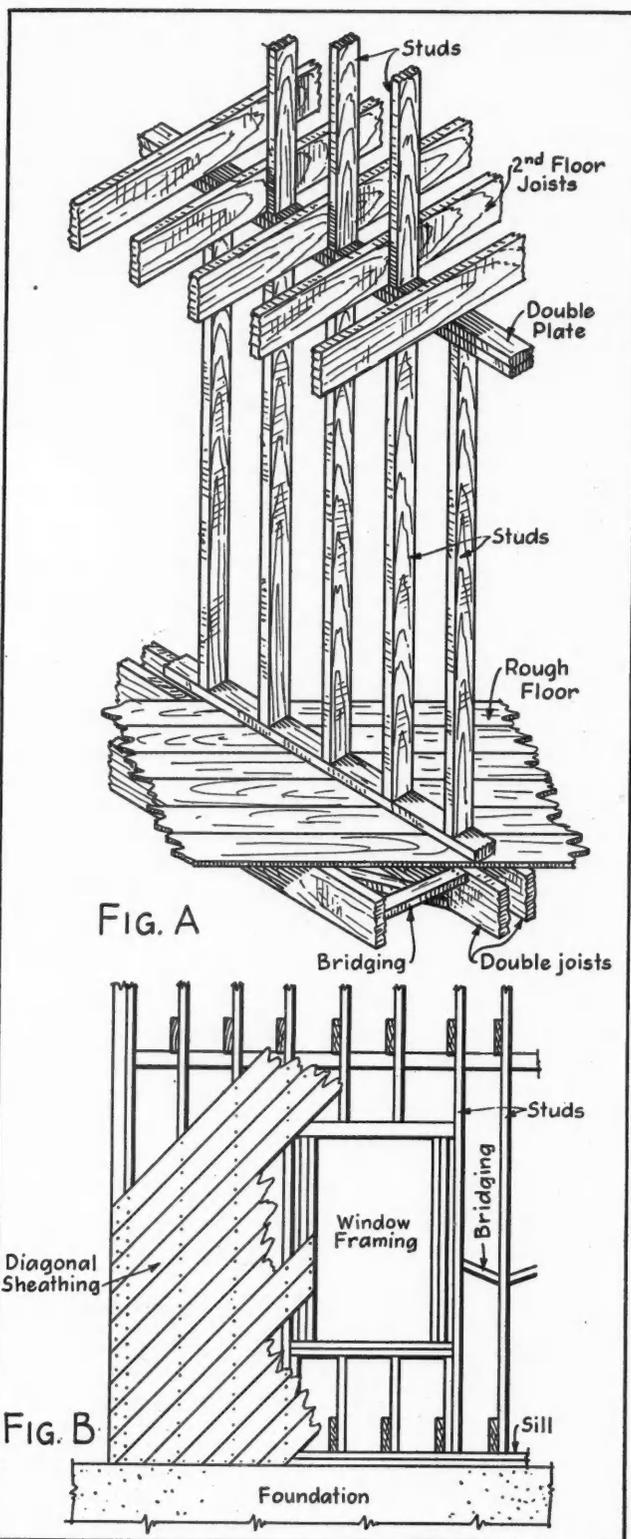
No. 1—The foundation must be of material adequate to carry the load. If of concrete, the proportion of portland cement in the mix should be not less than 1 to 3 of sand and 5 of stone. If of brick or native stone, the mortar should be mixed with enough portland cement to provide a binder impervious to disintegration under moisture. The foundation, whether a continuous wall or of piers, should rest on concrete footings. For walls, footing should extend not less than 6" beyond both sides of the wall, and be at least 8" deep. For piers, the extension should be from 4" to 6" beyond all four sides, and at least 8" deep. Bottom of footing should be perfectly level, to insure an even distribution of weight of foundation wall and super-structure, and should be carried below the deepest frost line. Foundation should be carried to at least 12" above the grade line (Fig. E).

Wherever footing passes over trenches holding service pipes, they should be enlarged or reinforced with steel.

Bearing posts which carry the load in the center of the building should have footings 8" to 12" deep and from 18" to 24" square. Footings shall be built up slightly larger than the post size and project 3" above the line of the finished basement floor.

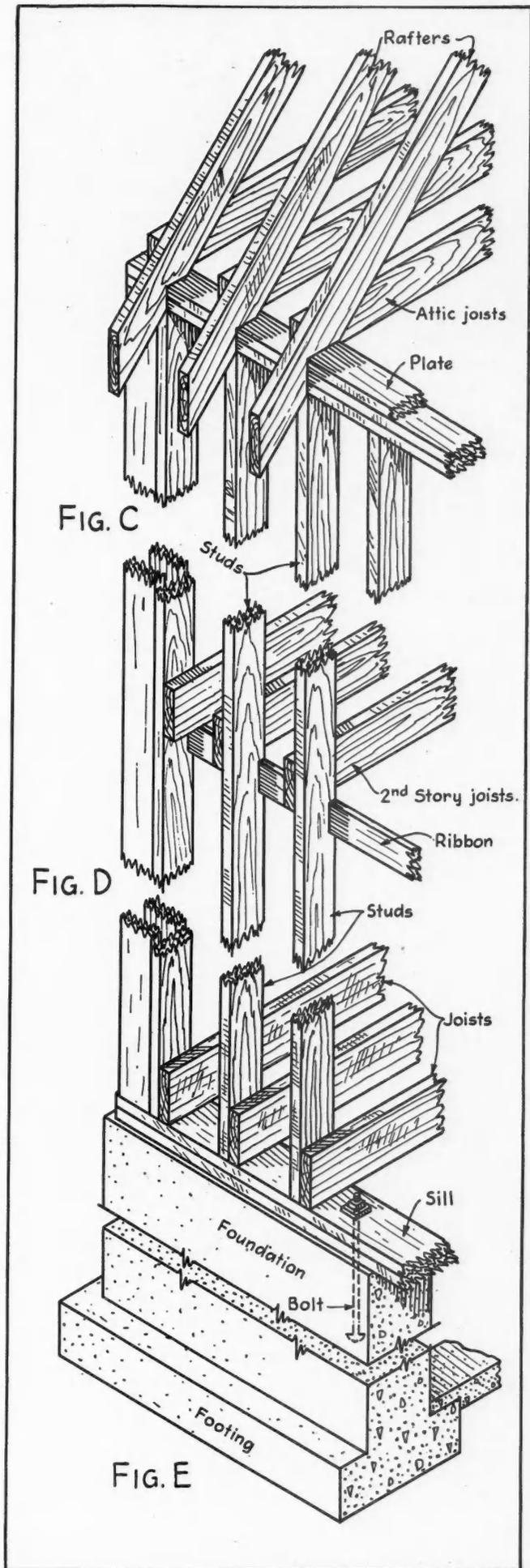
No. 2—The weight of a building is not sufficient to hold it firmly on the foundation in winds of high intensity. Therefore it is necessary that a sill of from 2" to 4" thick be bolted to the foundation. The anchor bolts should be $\frac{3}{4}$ " in diameter, placed at intervals of not less than 8' and made integral with the foundation itself by sinking them from 18" to 2' in the concrete at the time it is poured. (Fig. E.) Erection of the super-structure itself begins at the sill thus securely anchored to the foundation.

No. 3—Floor joists support the floors and contents of a building. They should be placed 16" on centers, and have sufficient strength to carry the load without deflection. 1" x 4" cross bridging, double nailed at each end, should be placed at not less than 8' intervals in the length of the joists. This feature provides essential



rigidity and eliminates vibration. (Fig. A.)

No. 4—Studs in outside walls should be placed 16" on center and run continuous the full height of the wall. Where they support second story joists, a continuous ribbon is notched into them which supports the second floor joists at the exterior wall. (Fig. D.) These joists



should be securely spiked to the sides of each stud so engaged.

No. 5—First floor joists and outside wall studs should be effectively tied to the sill by carrying the diagonal sheathing down to the foundation itself, securely nailing it to the studs, joist end and sill (Fig. B). Plates may be used, put in between joists, and spiked to sill, joists and studs.

No. 6—All corners should be reinforced by placing 1" x 4" braces notched into the studding at an angle of 45°, their direction to be reversed in the extreme corners of each side wall.

No. 7—Sheathing (preferably 1" x 6", dressed and matched) should be applied to all outside walls at an angle of 45°. This distributes wind strain throughout the side wall, without distortion of the building (Fig. B).

No. 8—Heavy water-proof felt should be applied directly to the diagonal sheathing of all outside walls, tightly fitted around all openings, and securely nailed to the sheathing throughout the entire surface area with broad-headed roofing nails. This "blanket" covering permits full advantage to be gained of the insulating value in the lumber itself.

No. 9—Sub-flooring (preferably 1" x 6", dressed and matched) should be laid at an angle of 45° from the line of the joists and carried in between studding to the outside wall sheathing (Fig. A). The direction of each sub-floor should be opposite, as between upper and lower floors. Sub-flooring should never be omitted nor carelessly laid, because it provides lateral bracing to the nailing base, eliminating the possibility of squeaking in the finished floor.

No. 10—Two or three joists should be placed under partitions which carry a load from the floor above. These should be separated by solid wood bridging, so that any service pipes or wiring may enter the partition without the necessity of cutting the joists. (Fig. A.)

Partitions Add Lateral Stiffness

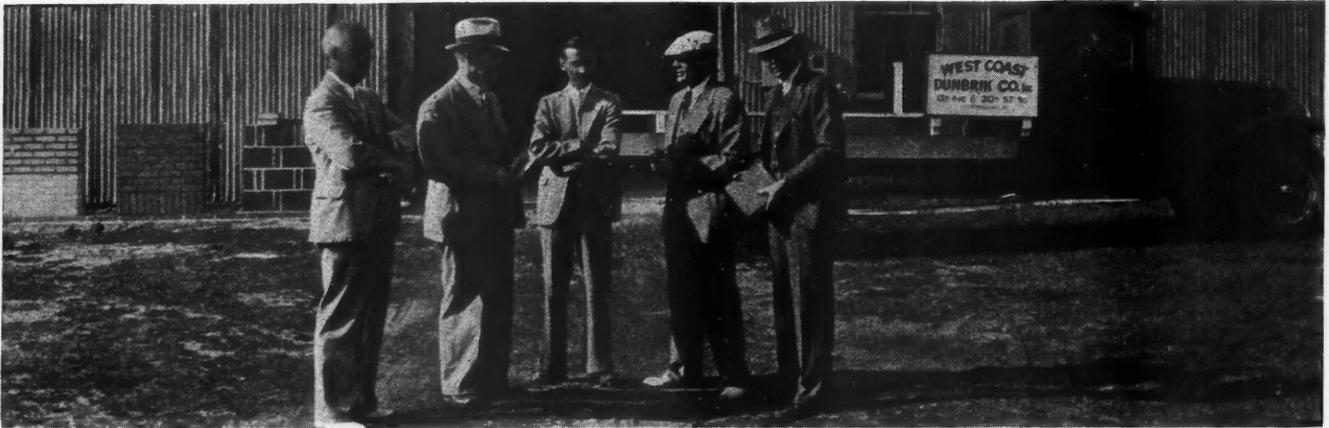
No. 11—At least one partition, meeting each outside wall at its approximate center, should be braced and securely tied to the wall, thereby adding lateral stiffness to the center of the structure.

No. 12—All partitions which carry a load from the floor above should be capped with a double plate; wherever possible bearing partition studs should be set directly over beams or other bearing partitions below.

No. 13—It is important to double the studs at the sides, top and bottom of all window and door openings, to supply strength removed by cutting of one or more studs (Fig. B.). In walls carrying floor loads above openings more than 3' wide, it is necessary to provide the required strength by forming trusses over the openings. This prevents distortion of the opening with attendant cracks in plaster or causing doors and windows to stick.

No. 14—Roof rafters should be anchored to the walls by spiking them to 2" plates fitted between the rafters and securely spiked to the wall plates (Fig. C). This will furnish an adequate anchorage of the roof framing to the side walls, often a point of weakness in improperly constructed houses.

No. 15—Collar beam bracing of the same size as roof rafters should run from rafter to rafter at about the middle of the attic height at every second rafter. This bracing, together with diagonal braces nailed to the under side of roof rafters starting at the center of the ridge and extending to the corners, will furnish the stiffness that will enable a roof to successfully weather the severe strains of unusual winds.



Four officials of the St. Petersburg organization putting colorful cement products "on the map," snapped out in front of the Plant with a distinguished visitor from Michigan

Florida Sets a Style

Winter Visitors Take Home Favorable Impression of Colorful Cement Brick Houses

JUDGING from the enthusiastic reports of building industry men as well as of home owners, returning this year from Florida trips, the entire country will before long be experiencing a wave of color in concrete brick and tile construction. What they have seen under such pleasant conditions in the southern "land of sunshine" is pretty apt to be carried back home to influence their building habits; and one of the outstanding developments in Florida now is the use of colorful cement masonry units. These are manufactured locally and some novel ideas have been tried out for their use to produce a

ventilated type of construction that fills a real need.

Prominent in this development is the West Coast Dunbrik Co., Inc., St. Petersburg, Fla. This company was organized in the spring of 1935 and went into production June 1, 1935. During the six months the company has been operating 300,000 units have been sold. Six homes, including a model General Electric home, have been built by the affiliated contracting organization, Clarkson Homes. In addition, several smaller buildings such as garages, filling stations, etc., have been erected of these cement units.

Charles C. Clarkson, president of the company, has been actively engaged in contracting and building for over 30 years; 16 years in St. Petersburg. About a year ago Mr. Clarkson became interested in the possibilities of cement masonry. Assisted by his son, Ted W. Clarkson, he made an extensive investigation in the production, merit and marketing of this material. The most convincing part of the investigation was a visit to two cement brick plants in the Southeast. On his return Mr. Clarkson had no trouble in completing his organization. Two months later his company was operating and producing fine masonry units.

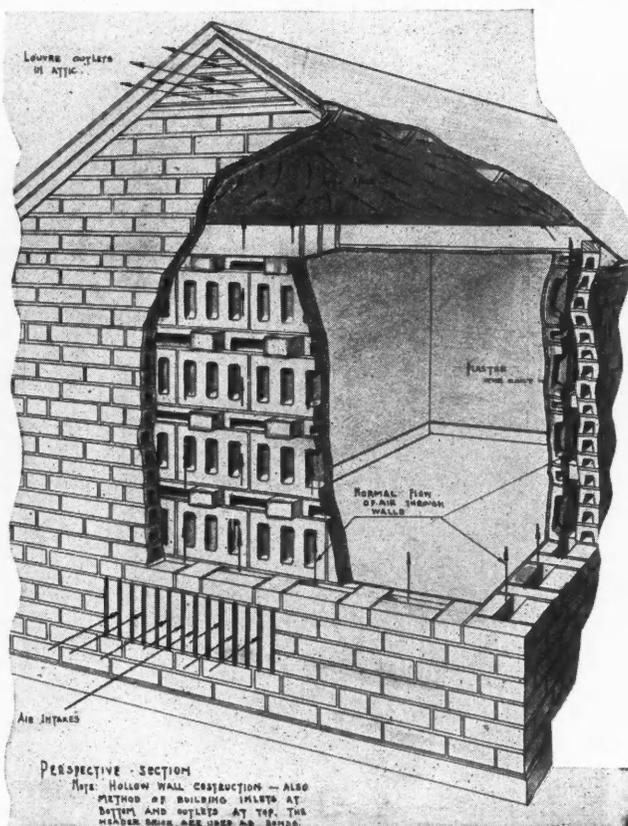
Ted W. Clarkson, secretary and general manager, a graduate in engineering at the Alabama Polytechnic Institute, submits the following results of tests of the company's product made at the City of St. Petersburg Testing Department:

Report of Compression Tests

Source: West Coast Dunbrik Co., Inc.; Material: Common Dunbrik; Bedded with: Plaster of Paris and Portland Cement; Length: 8.00 inches; Width: 3.75 inches; Height: 2.25 inches; Area: 20.00 sq. inches.

Sample No.	Age	Maximum Load Lbs.	Strength, Lbs. Per Sq. In.
1	over 28 days	95,000	3,160
2	over 28 days	117,000	3,900
3	over 28 days	114,000	3,800
4	over 28 days	93,000	3,100
Average strength for 4 samples			3,490

This manufacturing project has been so successful that the West Coast company plans an extensive expansion program for the early spring. To be added to the line of Dunbrik and Dunstone will be concrete roof tile and possibly blocks and floor tile.



The hollow wall construction developed by Ted W. Clarkson to assure cool houses in summer heat.

The officers of the company are: Charles C. Clarkson, president; Gust Blair, vice-president; Ted W. Clarkson, secretary and general manager; and W. D. Thompson, treasurer.

A novelty in house construction developed by Ted Clarkson is known as ventilated hollow wall, and is taking quite a hold. The cut away view shows how this wall is built. Commenting on this method of building, Mr. Clarkson said, "These hollow walls give an air space throughout, keeping the interior cool in summer and making a remarkably livable home. Its design allows for ventilation from every direction. The cool air entering

from the bottom travels upward and allows the warm air to escape at the top. Our people here are quick to appreciate this wall ventilation, especially during the summer months.

"I am glad that I can say with complete sincerity that Clarkson Homes, Inc., are getting more contracts and are busier now than they have ever been before, even during the boom days of the 20's, but we are giving our customers better value and more attractive homes and feel that we are pioneering a new, high standard of construction that eventually will be recognized as such throughout the entire country."

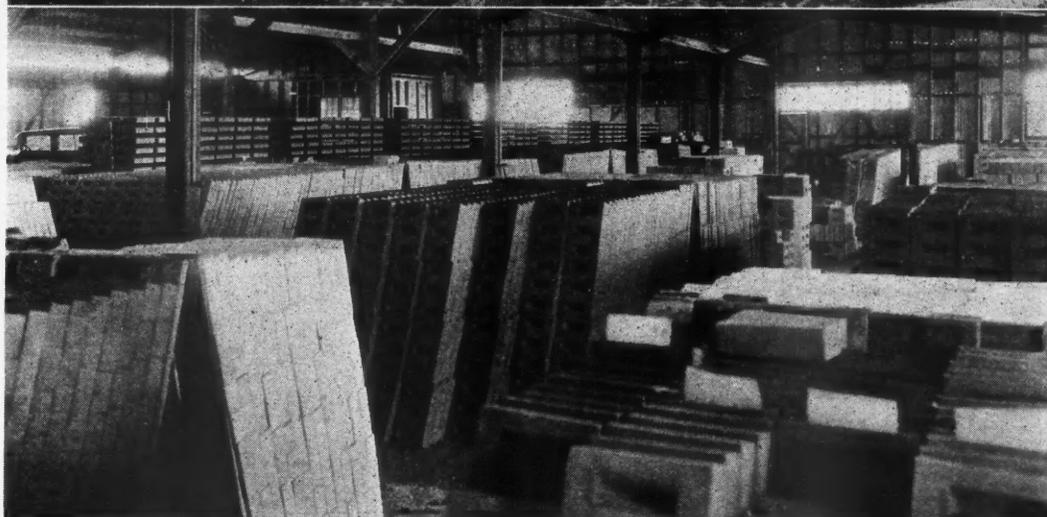
Proud owner and new home of hollow wall construction and cheerful colorful exterior.



Typical house job under construction by Clarkson Homes. Cement units from West Coast Dunbrik Co.



Part of stock piles in plant of West Coast Dunbrik Co., Inc. Product is made in many colors.



Proper Home Equipment— A Good Investment

By V. L. SHERMAN

Department of Mechanical Engineering,
Lewis Institute of Technology, Chicago

THE difference in outlook between the present day and that of a year or so ago is rather surprising to many. The proposals of the Federal Housing Administration were looked on hopefully by most of those who understood the difficulties and swampy paths of ordinary financing. That a substantial home could be built under the simplicity of a single long-term loan, inclusive of all details of livability, was a hope. The outlook at present is much more than a hope. It is a reality.

And as the year has progressed there has steadily grown the insistence that these new homes be equipped to match the loan, with substantial, convenient equipment in its full quota.

Also during the past year there has been a tremendous increase in the use of modern heating, cooling, and air conditioning equipment. This is a very fitting time to talk about such equipment. During the month the various societies engaged technically in the subjects will hold their conventions and expositions. All of the elements making up such equipment will be on exhibition for the inspection of contractors and public. All of the features which may have taken years to develop will be exposed for applause or criticism. The cards, one might say, will be all on the table, and the skeptics, of which there are some, and the enthusiasts will have ample chance to argue out their differences with the subjects fully before them. Personally I look for a very interesting and even exciting month.

But for all the generalizing both sides rightly insist that we keep our feet on the ground. Heating, cooling, and air conditioning have changed both in method of operation and in operating costs since a primarily industrial system was adopted for human health and comfort. The equipment might appear sinfully complicated to one of past generations, but the various elements have their purposes and are more likely to pay dividends and add convenience when properly selected and properly used. In almost every instance this same equipment-part

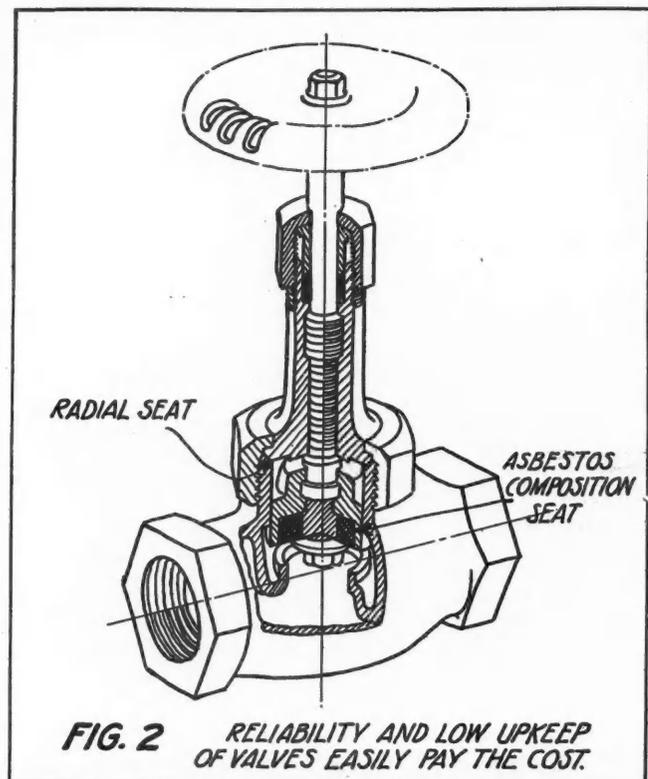
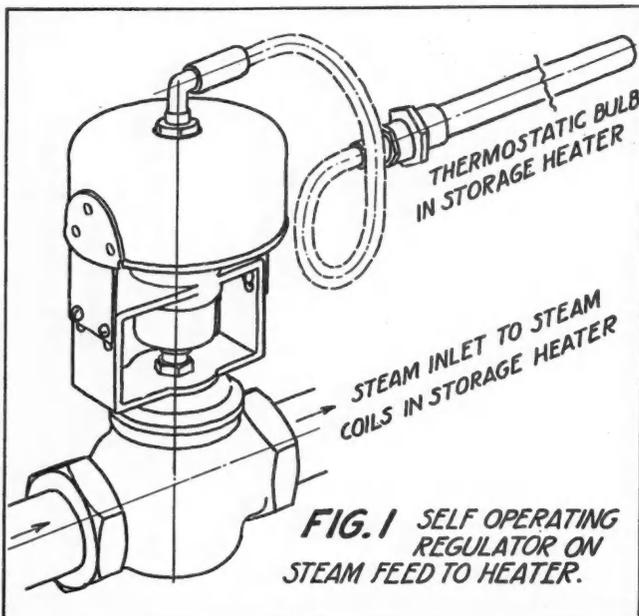
has been used industrially for a long time past, at a point where its known savings in expense of operation made it just about invaluable.

Figure 1, for instance, a device for regulating the flow of steam through the coils of a storage heater insures a proper water temperature at all times, and levels off the peaks and dips that make so much for inconvenience and expense. The less fluctuation of temperatures, the less is the cost. Over a period of time this counts, even when included in a residential job.

Then there is the ever present problem of good valves. There surely is no excuse for the purchase of any but the best valves. Figure 2 shows one of the modern type which is built to take the troubles off the owner. This sort of valve is reliable and of low upkeep cost, and is readily repacked. The valve shown in Figure 3 is another automatic valve, of the solenoid type, which is popular for domestic use in air washers. This question of valves is a really interesting one. There is such a line of distinction between the cheaper, half-hearted valves which are akin to the half-hearted faucet, and the substantially built, well designed valve.

Just as valves are a matter of easy and assured snugness, so are pipe fittings. Welding has come far in the last few years in the way of providing easy and suitable connections. There are many advantages in the use of weld-connected pipe layouts, and, industrially, there are now a great many of them. Figure 4 shows an adaption of this idea to the connections at fittings. By means of a welding torch played against the flange the alloy is made to form a perfect joint.

Just as other mechanical equipment has been reduced



MECHANICAL EQUIPMENT FOR 20-YEAR FINANCED HOUSES

in price and size to meet the wider needs so have pumps followed suit. And the centrifugal pump has been so far improved that it now meets many requirements that were once thought to be beyond it. With its perfection in design to improve efficiency came improvement in its

to resume a more close resemblance to those outside, and workers feel no ill effects when leaving. This saves tempers and also expense in operation.

But the proper temperatures and humidities for any particular business or industry might be such that to

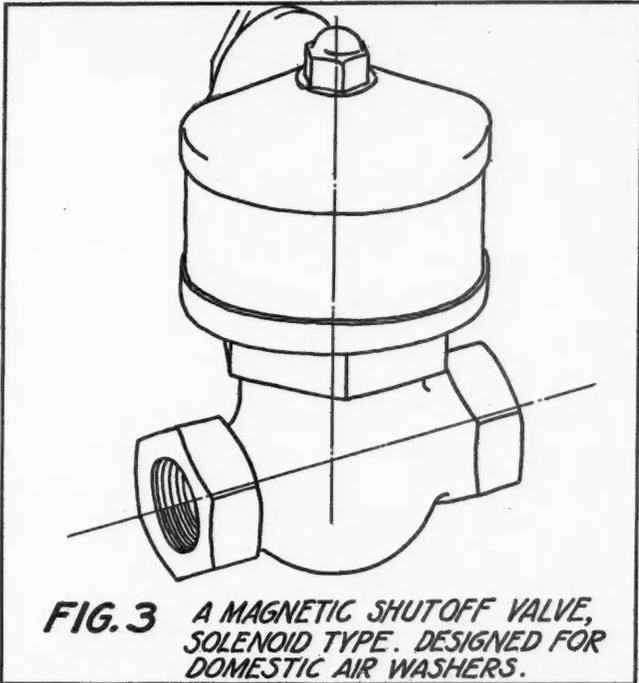


FIG. 3 A MAGNETIC SHUTOFF VALVE, SOLENOID TYPE. DESIGNED FOR DOMESTIC AIR WASHERS.

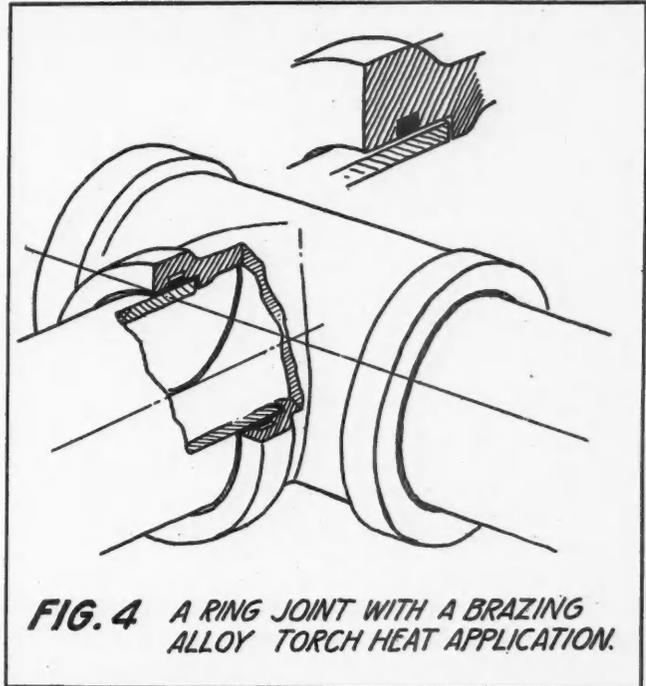


FIG. 4 A RING JOINT WITH A BRAZING ALLOY TORCH HEAT APPLICATION.

drive and balance. In Figure 5 is shown one of a number of different sizes, with a single shaft, and a single mount. Compact pumps of this type are built to handle between 30 gallons per minute and 800 gallons per minute and can pump against a head of 350 feet. The fact that various sizes can be obtained speaks well for their efficiency in operation.

Connections, adjustments of flow, and maintenance of pressure are all important items in any heating, cooling, or air conditioning set-up. Leakiness in connections or valves, hindrance to flow or impossibility of adjustment in the valves, or failure of pressures are altogether too costly. Substantial equipment is the only insurance against these misfortunes.

In the matter of cooling and air conditioning the past year has shown a healthy growth and many points clearly defined. But there is no place in industry so likely to show the weak spots of the exploiter. Cheap equipment in these lines is usually worse than useless, while good equipment provides for all of the hopes set out. All of the manufacturers of good equipment are ready to prove up on their statements and do not resort to promises. And at the same time the various societies are at work to determine how that equipment can be made to best answer our needs. As mankind in general is composed of so many different individuals, so are there many answers to our personal ideas of comfort and health. In industries and in places of large daily employment the question of differences in temperatures and humidities are matters of accommodation and choosing for the best results. For instance, on excessively warm days the starting conditions are not greatly different from the outside air, but as the day progresses the best working conditions are brought about without shock. Before quitting time the conditions are allowed

one stepping in or out of the place there would be great discomfort. So long as our homes are not places of confinement it seems we would be better suited with a moderately comfortable and healthy condition of the air. The old beckoning sign "68 degrees cool" has long ago been discarded by all but the green-horns. To get closer to real facts of the case as regards normal humans, and to provoke discussion among various groups of the American Society of Heating and Ventilating Engineers, a research project was put through the laboratories of the Society at the Bureau of Mines by F. C. Houghten and Carl Gutberlet. Five normal young men, of about 21 years of age, in average summer garb, were submitted to an exhaustive series of tests to determine their reactions after passing from out-of-door air into a properly equipped air conditioned room. I say proper-

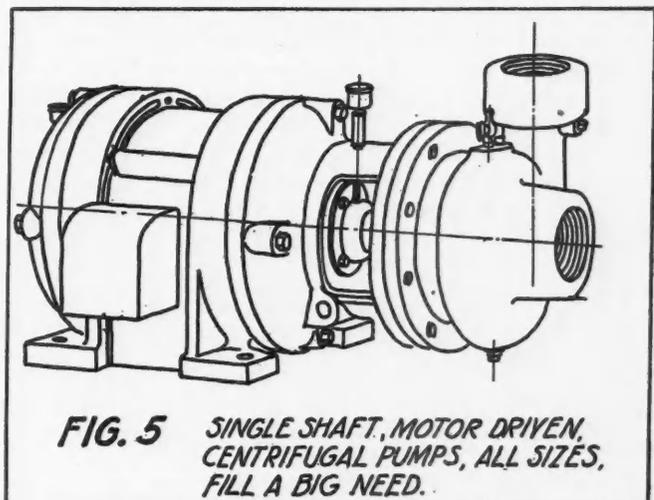


FIG. 5 SINGLE SHAFT, MOTOR DRIVEN, CENTRIFUGAL PUMPS, ALL SIZES, FILL A BIG NEED.

HEATING—AIR CONDITIONING—PLUMBING AND WIRING

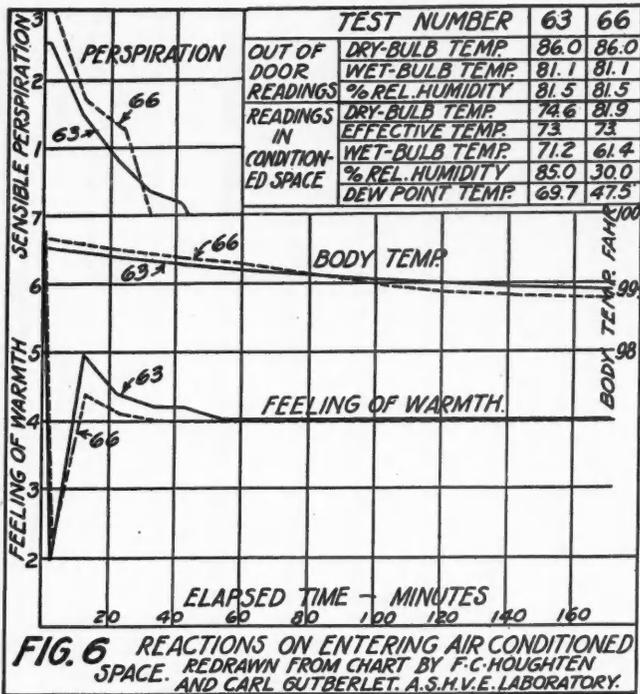


FIG. 6 REACTIONS ON ENTERING AIR CONDITIONED SPACE. REDRAWN FROM CHART BY F.C. HOUGHTEN AND CARL GUTBERLET, A.S.H.V.E. LABORATORY.

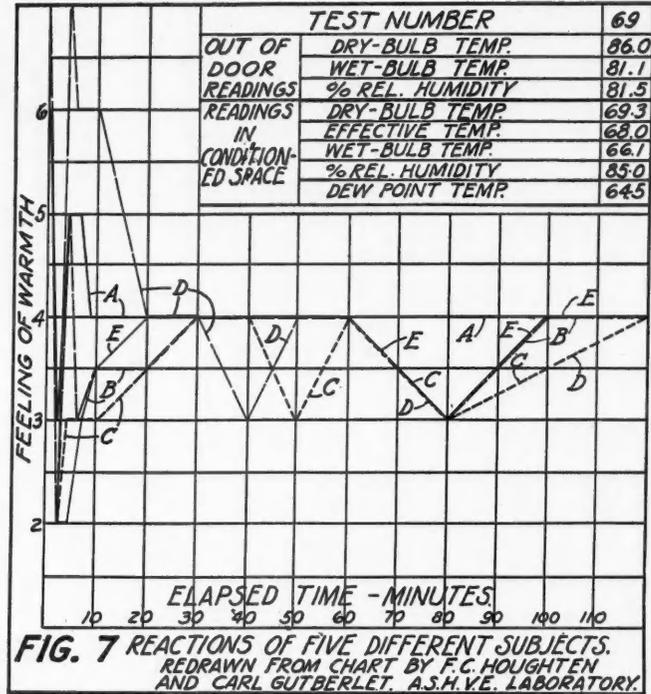


FIG. 7 REACTIONS OF FIVE DIFFERENT SUBJECTS. REDRAWN FROM CHART BY F.C. HOUGHTEN AND CARL GUTBERLET, A.S.H.V.E. LABORATORY.

ly equipped because any desired condition of the air was available. Two of the charts, representing three different conditions, are shown in Figures 6 and 7. Figure 8 is a portion of a psychrometric chart showing the qualities of the air out-of-doors and during the three tests. The outside air is the same throughout the experiments.

69 we have a condition that is quite likely to be found in "68 degree cool." This air carries less moisture, less heat, and shows a lower dry-bulb temperature than does 63. It also carries more moisture and more heat with a much lower dry-bulb temperature than 66, a condition most awkward in a home.

After a prescribed amount of exercise in the open the boys were placed in the conditioned room which had been long enough under condition to come to equilibrium. Test 63 runs a lower dry-bulb temperature than does 66, but a higher wet-bulb temperature. But a comfortable feeling of warmth, rated as 4, is more quickly arrived at in test 66. From what I know of body temperatures 66 is an improvement on 63. Test 63 with a higher wet-bulb reading shows at least fifteen minutes lag in perspiration over test 66. Both of these tests show what is known as a chill shock on entering the conditioned room, settling to normal in test 66 after half an hour. The so-called chill shock here was no great discomfort, but with a drop of 11½ degrees in the dry-bulb reading in test 63 it is accountable, while in test 66 the drop in moisture content of the air could well account for chill by evaporation. An atmosphere less dry but with the same dry-bulb temperature might have proved an easier starter and as comfortable, perhaps more comfortable, on duration.

But test 69, Figure 7 tells another story. Here we have an atmosphere with a heat content about midway between tests 63 and 66, but see the results in five different subjects. Subject A alone kept a physiological balance. Here in test

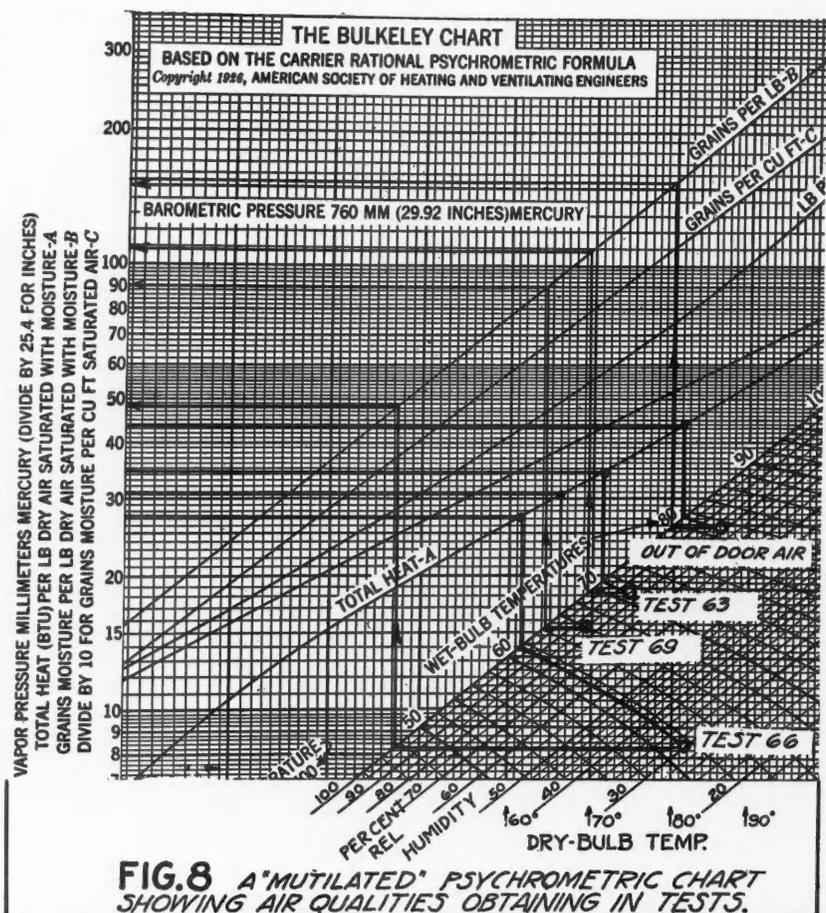
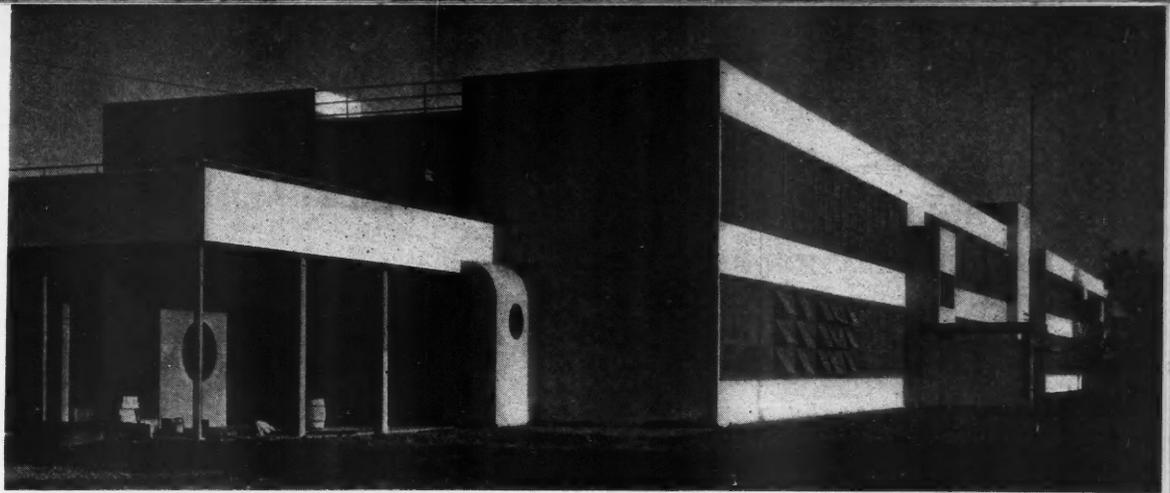


FIG. 8 A "MUTILATED" PSYCHROMETRIC CHART SHOWING AIR QUALITIES OBTAINING IN TESTS.

Right: A view of one of the new earthquake-resistant schools which replaced an old unit in a program which called for the erection of sixty modern structures similar to this one located at Long Beach, Calif.



SALVAGED Flooring for Quake-Proof Schools

Old Maple Strip Flooring from Torn Down Buildings Made into Blocks and Relaid In New Structures

ABOUT TWO years ago a program was started to rebuild all school buildings in the Long Beach, Calif., City School District. This meant that 60 buildings in 35 units were to be torn to the ground and modern, earthquake-resistant structures erected in their places.

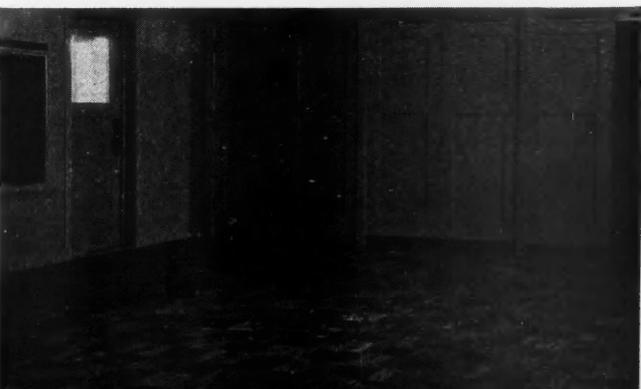
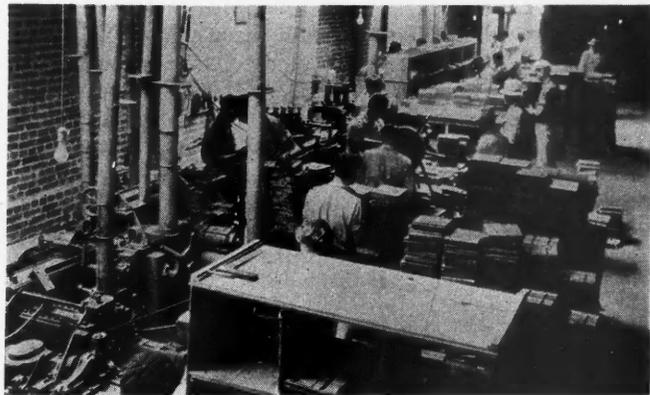
At the time of the dismantling of the old buildings, northern hard maple flooring, which had been installed by nailing, was torn up with crowbars and the nails pulled out. It did not then seem possible that it could be reused but an examination revealed that this flooring remained in excellent shape, despite the fact that it was from 5 to 35 years old and had been subjected to the constant wear and tear of many millions of footsteps.

It was piled in the open and allowed to remain there, exposed to the elements, for months before a decision was reached as to what would be done with it. Obviously this flooring was far from being worn out, but the problem was how to relay it into smooth, presentable floors that would be in keeping with the modern design of the new buildings. In some of these structures which had concrete sub-floors, it seemed impractical to attempt to relay the flooring by nailing.

The Los Angeles representative of E. L. Bruce Co. made the suggestion that an entire block manufacturing unit could be shipped from Memphis to Long Beach and transformation of the old strip flooring into new blocks could be handled "on location," as they say in California.

In six months' time, most of this maple flooring had been salvaged and remanufactured into approximately 400,000 feet of Bruce Blocks. The next step was to install the flooring in a mastic base as shown in an illustration at the right.

To look at these floors, most people would think they were new. It is reported that the architects on these jobs and the officials of the Long Beach City School District are more than gratified with the results.



Left, Top to Bottom: The old flooring from the dismantled schools as it was piled in the open before deciding what could be done with it; months later it was remade into blocks; the flooring was then laid in a mastic base over the concrete floors; the finished job shows the flooring as it now appears in one of the Long Beach schoolrooms.

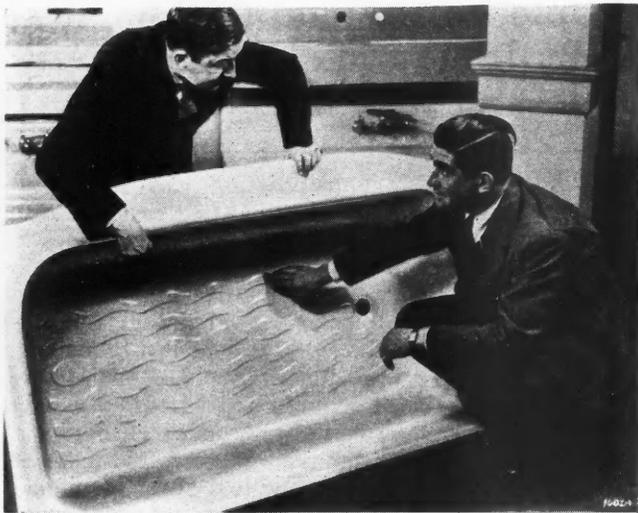
NEW PRODUCTS

FOR INFORMATION ABOUT any new product write American Builder Information Exchange, 105 West Adams Street, Chicago, Ill.

Briggs Safety Bath Tub

A SAFETY bath tub designed to reduce the hazard of slipping or skidding has been announced by the Plumbing Ware Division of the Briggs Manufacturing Company, Detroit, Mich. The new safety tub of formed metal, has a bottom which is serpentine embossed. The safety feature is achieved by reducing slopes inside the tub and by the wave-like tread.

In styling and general design, the new safety tub is similar to other formed metal bath tubs manufactured by Briggs. It is streamlined and finished in acid-resisting, porcelain enamel in any color or combination of colors desired. The tub weighs only one-third as much as the cast iron bath tub.

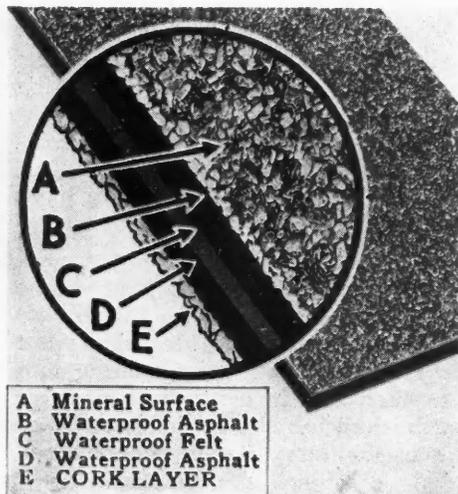


J. A. Callahan of Briggs Co., left, showing new tub to Mickey Cochrane, Manager of Detroit Tigers.

Cork Insulated Shingles

THE Philip Carey Co., Cincinnati, manufacturers of Carey Cork Insulated Shingles, reports an increasing demand for this product due to general interest in insulation. The cork feature is also said to increase the weatherproofing and weather-resisting qualities of the shingle.

Two types are available—the individual shingles, 12 by 16 inches, weighing 335 pounds per square, and strip shingles in two weights, 210 and 255 pounds per square. Both come in a variety of colors.



A Mineral Surface
B Waterproof Asphalt
C Waterproof Felt
D Waterproof Asphalt
E CORK LAYER

Enlarged section through Carey Cork Shingle showing the various layers of material.

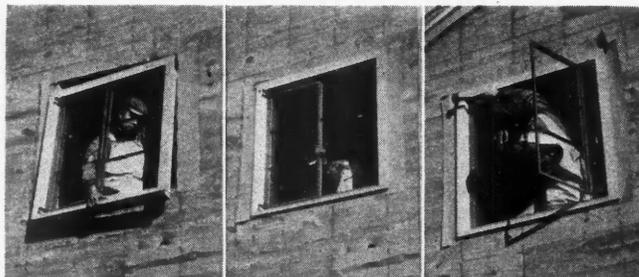


Houses typical of the construction by Oakland Housing Corporation at Green Lake, Mich.

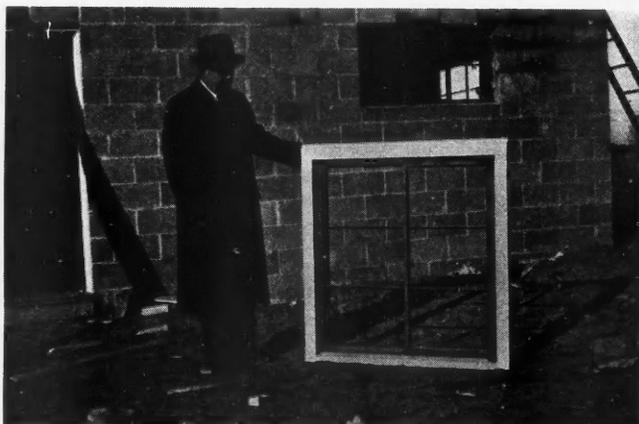
New Low-Cost Windows

THE Detroit Steel Products Co., Detroit, has made a contribution to reduced costs by developing "Fenestra" Steel Casings. They have been extensively used on large apartments and residential developments.

At Green Lake, near Pontiac, Mich., the Oakland Housing Corporation, Architect Barton P. Jenks, Jr., has designed 150 individual houses in which approximately 2,000 "Fenestra" casements and steel casings are being installed. "We are very well pleased with the ease with which we have been able to install these windows and steel casings," the Oakland Housing Corporation reports. "On the first floors of the houses the windows were built into cinder block. On the second floors, which are frame, our men prepared the rough openings. The outside trim was attached to the windows while they were on the ground and the complete units were lifted through the openings and pulled into place from the outside. The job was done without the use of ladders or scaffolding."



Above, the window with casing and outside trim attached as illustrated below is lifted through the prepared opening from the inside, pulled into place from the outside, plumbed and nailed.



L. R. PUTMAN DIES

LEIGH R. PUTMAN, vice-president and marketing editor of the *American Builder*, died suddenly at his Evanston home on Dec. 28. An energetic and tireless worker, he had spent the day at his editorial duties and suffered a sudden heart attack on arriving home.

Mr. Putman was known throughout the lumber and building supply fields for his active interest in the problems of the industry and his keen sense of humor. To his credit are such achievements as his "Own Your Own Home" campaign which President Wilson adopted and backed to start the building revival of 1919, and his pioneering work for grade marking and trade marking of lumber.

Mr. Putman was a native of Fayetteville, Ark., where he was born May 29, 1875. After attending the University of Arkansas, he entered a retail lumber and building material yard whose proprietor also operated a woodworking plant and did general building and contracting. "Put," as he came to be known to thousands in the building industry, became active in local affairs. He organized and was first president of the Association of Commerce of Fayetteville, and was a director in the First National Bank and the Building and Loan Association, and a member of the city council.

During his retail career, he assisted in organizing and was the first president of the Arkansas Retail Lumber Dealers' Association which later became part of the Southwestern Retail Lumbermen's Association. Mr. Putman was a director and vice-president of that organization when he was invited to New Orleans to direct advertising and trade extension for the Southern Pine Association. In this work he came in contact with manufacturers, dealers, specifiers and fabricators in the building industry throughout the country. While in New Orleans, Mr. Putman was president of the Advertising Club of that city for two years, a Rotarian, and served on the Supreme Nine of Hoo Hoo, the lumbermen's fraternal organization.

He came to Chicago in 1920 to amalgamate all of the then existing wholesale lumber organizations into the National American Wholesale Lumber Association. Later he was retained by the Southern Pine Association as merchandising counsel and served on the advertising advisory committee of the National Lumber Manufacturers Association.

In 1932 Mr. Putman was made a vice-president of the American Builder Publishing Corporation, and devoted his full time to the job of *American Builder* marketing editor and merchandising counsel, working with the retail lumber and building supply dealers and with the manufacturers on trade promotion and distribution problems.

An appointment as associate director, FHA, for Northern Illinois, in charge of merchandising activities under Title I of the National Housing Act, for six months took part of his attention, and during this time he was very successful in organizing community modernization campaigns. In the spring of 1935 Mr. Putman returned to his work on the *American Builder*, and was so engaged until the time of his death.



SHOPCRAFTER'S Corner

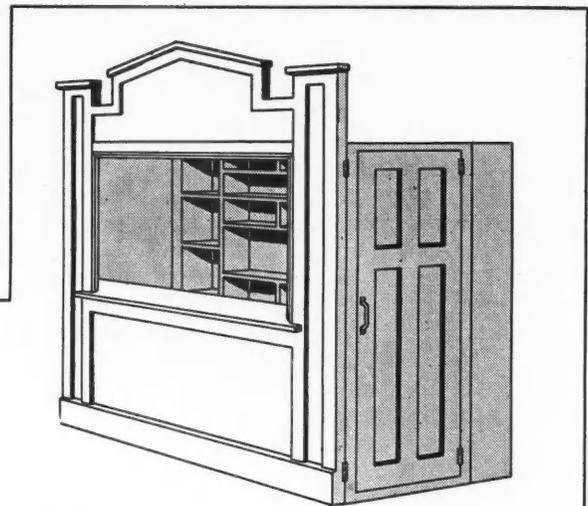
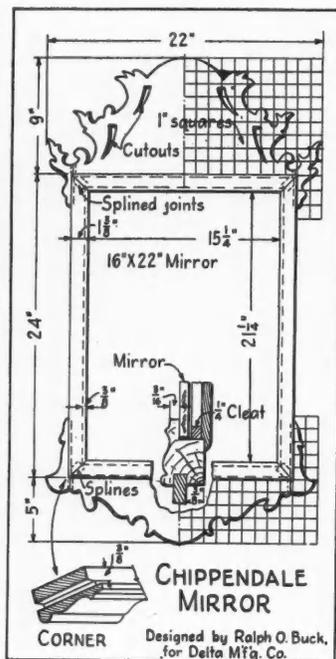
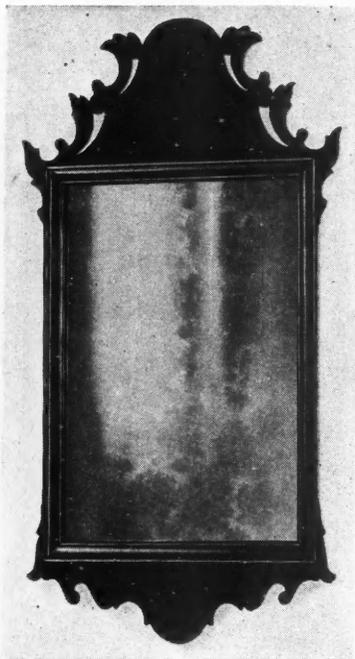
Things To Build for Profit or Pleasure

THE Chippendale mirror, one of the two projects on this page will give any shopcrafter a chance to show his skill in producing a small but well designed piece of furniture—one that can be used in almost every home. Solid mahogany for the frame and mahogany veneer for

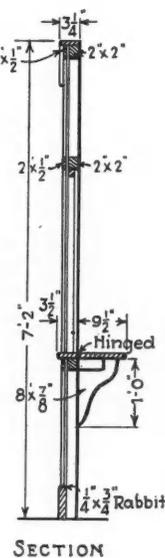
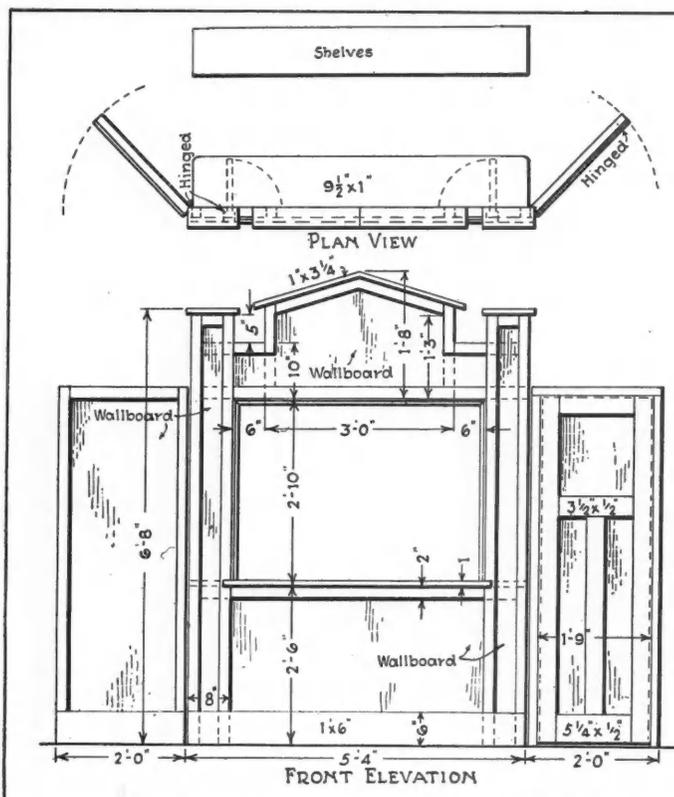
the scrolls are recommended. An important detail is to protect the back of the mirror from moisture by backing the glass with cotton wadding before the plywood back is put on. The finish should harmonize with that of the other furniture with which it will be placed.

Any boy or girl will be a most popular child with the other youngsters of the neighborhood when the store front shown below furnishes them with an instructive plaything for the indoor winter months. Although large in size, it can be folded up and stored away when not in use. A set of shelves standing in the rear can be filled with samples; token money will give the children good training in counting. The project is also suitable for sale to kindergartens.

Well designed Chippendale mirror presents an interesting workshop project. Below: Store front screen will keep the children amused during the winter months and folds up so that it can be conveniently put away when not used.



PERSPECTIVE

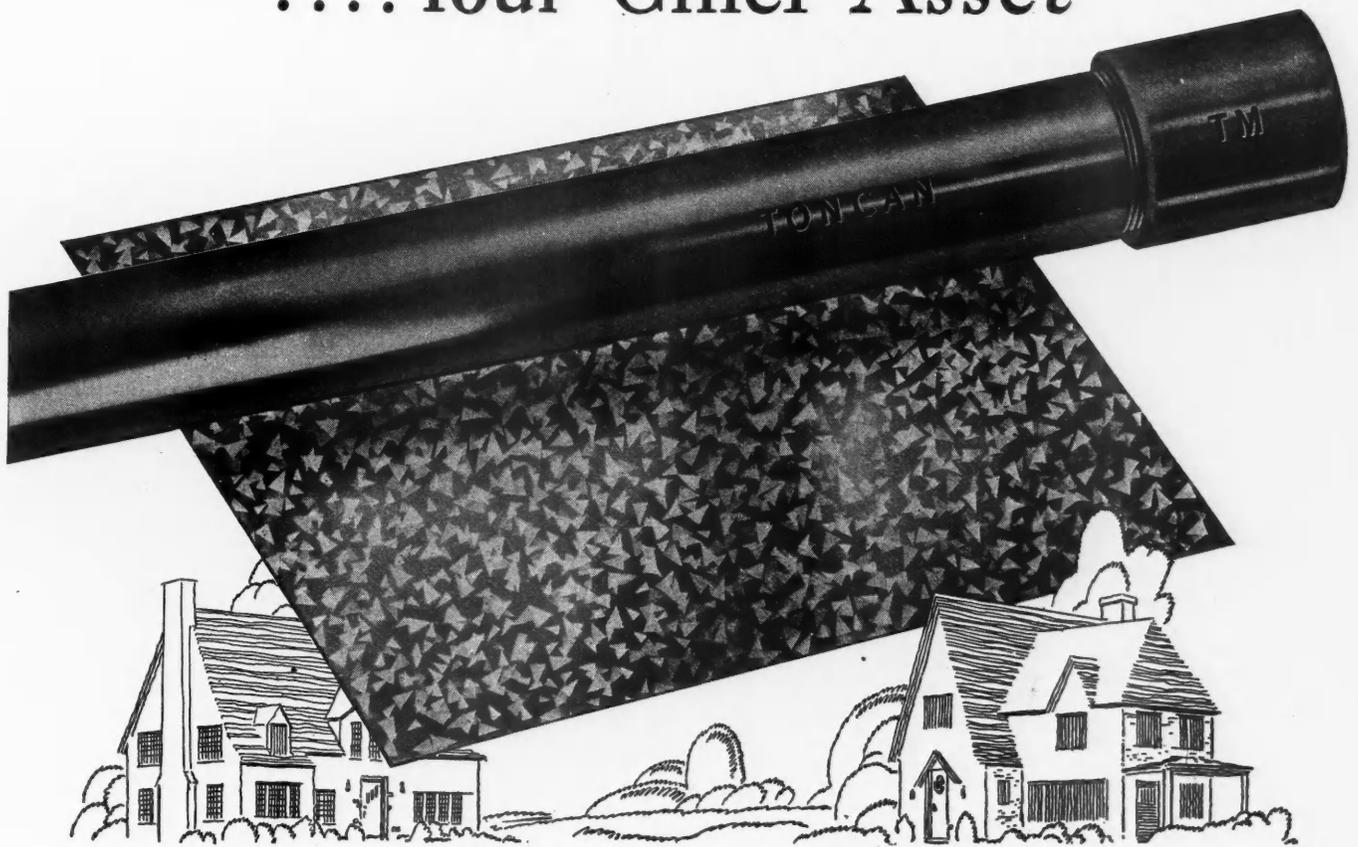


SECTION

BILL OF MATERIAL			
No	NAME	LENGTH	WIDTH THICK
	Lineal Feet	5'-0"	3 1/4" 1"
	"	52'-0"	2" 1 1/2"
	"	42'-0"	2" 2"
	"	13'-0"	2" 1"
	"	13'-0"	1 1/2" 1 1/2"
	"	17'-0"	3 1/2" 1/2"
	"	1'-6"	5 1/2" 1/2"
	"	2'-0"	2" 3/4"
	"	13'-0"	1" 3/8"
	"	4'-6"	3 1/2" 1"
	"	2'-0"	8" 1/8"
	"	6'-0"	9 1/2" 1"
	" Molding	10'-0"	1 1/4" 1/2"
35 Sq. Ft. Wallboard			
4 Hinges For Ends			
2 Hinges For Door			
2 Hinges For Counter			
4 Hinges For Counter Supports			

Design from Edward P. Worst.

GOOD WILLYour Chief Asset



Protect it with Toncan Iron Pipe and Sheets

To sell Toncan Iron Pipe and Sheets is to sell *greater life and lower maintenance costs* for every building where these rust-resisting, corrosion-combating products are installed.

Successful contractors and dealers know that Toncan Iron Pipe and Sheets will protect their goodwill by protecting their clients and customers against costly maintenance and more costly replacement.

Toncan Iron is a rust-resisting alloy—made of refined open hearth iron, copper and molybdenum. Toncan Iron Pipe resists

corrosive attacks of acid water and sludge in mines. This proves its ability to resist the most severe conditions in buildings. Toncan Iron Sheets, exposed to the elements for over 20 years, continue to challenge need of replacement.

The relatively small difference in cost between Toncan Iron and ordinary ferrous pipe and sheets is amply justified by the added years of service insured by the rust-resisting properties of Toncan Iron.

Write Department AB for Toncan Iron facts and dealer proposition.

Republic Steel CORPORATION

GENERAL OFFICES CLEVELAND, OHIO



NEWS of the MONTH

Building Activities and Meetings

Basic Trends Favor 1936 Building Upturn

IMPORTANT data from 25 major cities scattered from coast to coast on sales, rents, new residential units, building material prices, and amount of new mortgage financing have been compiled by Real Estate Analysts, Inc., St. Louis, for the guidance of building and real estate interests. The information presented shows:

1. Sales are now at 52.2 per cent of their 1926 level, as against 46.1 per cent a year ago. Voluntary transfers are taking place at a rate higher than at any time since the depression became severe. The rate has risen steadily since the bank holiday.

2. With vacancies rapidly disappearing, rents for single family accommodations are at 78.5 per cent of the 1926 level, as against 65 per cent a year ago. Rents for apartments are still at 58 per cent of the 1926 level, but have risen from 50.9 per cent of that level as of a year ago.

3. Building material prices are now at 86.1 per cent of the 1926 level, a rise from 85 per cent a year ago. Material prices went up sharply in 1933, and have maintained the increase.

4. Rate of new residential building has accelerated during the year, but has not attained volume. New family accommodations built are now at 21.6 per cent of the 1926 total as against 8.7 per cent a year ago.

5. Volume of new mortgage financing began to go up last Spring. It is now 31.3 per cent of the 1926 volume.

The degree to which the nation is approaching the recovery point where new construction may be expected in volume is indicated by the degree to which building income levels have risen in comparison with building costs.

New construction can be expected in volume when it becomes evident to the average investor that earnings on new building (as measured by rent returns on existing structures) definitely exceed the then cost of construction, experience indicates.

Meantime, any delay in new construction, which would be occasioned by any rise in construction costs, will increase the demand for space in existing buildings, and tend inevitably to increase real estate sales prices.

Building Volume Up Again

F. W. DODGE CORPORATION figures for the first half of December covering 37 eastern states show residential contract total of \$25,040,400. This figure is in line with the 1935 upward trend and is almost triple that of the same period last year. The volume for the month of December should amount to about \$50,000,000, and for the entire year 1935, \$475,000,000.

Total construction contracts for the first twelve business days of December amounted to \$138,383,400, as against a volume of \$86,468,600 for the same period in November and \$43,651,200 a year ago.

EARLE W. McMULLEN became director of research of the Eagle-Picher Lead Company on December 1. This position formerly was held by Dr. John A. Schaeffer, who resigned to become president of Franklin and Marshall College.



THE Wood Conversion Co. has announced the appointment of Henry G. Schmidt as manager of its New York District. Mr. Schmidt has spent several successful years as a retail lumber dealer in Bethlehem, Pa., and in Newark, N. J. Under his direction a drive will be made to introduce the company's products to eastern dealers.

Weyerhaeuser Expands Finance Plan

WEYERHAEUSER officials have announced that the company's finance plan has been expanded to include Title 2 loans in certain states and cities, and that the new service would be made available in other areas when additional outlets for such mortgages are obtained. This has been partially accomplished through a contract which the Weyerhaeuser Sales Company has entered into with the General Home Financing Corporation, St. Paul, Minn., an approved mortgagee under the National Housing Act.

"However, this does not mean that we are now in a position to operate nationally," said F. K. Weyerhaeuser, president of the Sales Company. "Naturally the expansion of the service will be determined entirely by the progress made by the mortgage company in establishing satisfactory outlets. We believe the Single Insured Amortized Mortgage as developed under the National Housing Act to be one of the most important steps ever taken to promote home ownership and we are anxious to co-operate with the Federal Housing Administration in every way possible to extend its widespread use. We realize it is going to take time to perfect a Title 2 financing service for our customers but we are making a start in that direction and hope to make substantial progress during the coming year."

Glass Block Sales Increase

THE unusual interest glass blocks have created in the building industry since they were introduced in their improved form three months ago has resulted in sales that exceed those of the entire three-year period prior to that time, according to officials of the Owens-Illinois Glass Company.

Production facilities at the company's Muncie, Ind., plant are being stepped up continuously to meet increasing demands for the glass masonry. A recent survey made by Owens-Illinois revealed that use of glass blocks has been incorporated in plans for hundreds of new structures in more than half the states in the union during the past three months.



DANIEL C. MCGUIRE has been appointed as president and general manager of the Argonaut Realty Corporation, which has charge of all General Motors real estate operations in the United States and Canada, and also as vice president of General Motors Building Corporation, Detroit, and president of Modern Housing Corporation. Mr. McGuire succeeds the late Harrie T. Hickey.

BUILDING CONTRACTORS ARE TURNING COSTS INTO PROFITS

Owners report big reductions in hauling
costs with

FORD V-8 TRUCKS



Hundreds of builders have found out that profits do not depend entirely on increased income. To a large extent, they depend on reduced costs. Conclusive evidence comes from those builders who operate Ford V-8 Trucks.

The cost records of owners PROVE V-8 ECONOMY. These records show over-all economy as well as savings in fuel and oil costs. Interest and depreciation charges are low because of low first cost. Maintenance expense is low because of V-8 Reliability and because of Ford's low-cost engine and parts exchange privileges. Insurance, taxes and wages are less because V-8

Performance permits doing jobs that formerly required larger trucks or more units.

PROVED BY THE PAST . . . Ford V-8 Trucks have been IMPROVED FOR THE FUTURE. You can expect even greater economy . . . even more sensational performance . . . even more impressive reliability. And your expectations will be fulfilled! Call your Ford dealer today and set a date for an "on-the-job" test with your own loads, over your own roads, with your own driver.

Ask about the Ford Engine Exchange Plan and other parts exchange privileges which assure low maintenance costs.



Weatherproofed With

REARDON'S BONDEX WATERPROOF CEMENT PAINT

BORDERS are no barrier to the spread of a product as good as Reardon's Bondex. J. A. Griffiths, Esq., of Toronto, Canada, whitened, waterproofed and preserved his attractive home in one operation with Bondex white and the result is certainly easy on the eyes. Take a hint from our Canadian cousins and suggest Bondex for everybody's satisfaction. If it's color they're after you have 16 beautiful shades to offer.

Use **BONDEX** on
STUCCO LEAKY SWIMMING
EXTERIORS BASEMENTS POOLS

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SEND FOR BONDEX QUESTION BOOK

THE REARDON COMPANY, 2200 North 2nd St., St. Louis, Mo.
Please send me your Free Bulletin answering every question about mixing and applying Bondex.

Name _____

Firm _____

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A.B. 1-36

Author's Name Wrong

IN THE December *American Builder* a construction story was credited by mistake to F. H. Hamlin, Villa Park, Ill.—the writer's name is F. M. Hamlin of Lake Villa, Ill.

New Time-Payment Plan

THE Libbey-Owens-Ford Glass Company has announced that it has completed a new time-payment plan for residential modernization and commercial installation projects.

It is known as the Libbey-Owens-Ford Modernization Budget Payment plan, and is designed to take advantage of the liberal provisions of the National Housing Act. Among its features are endorsement without recourse, 100 per cent payment, low discount charges and payments as low as \$4.12 per month. Amounts to be financed cannot be less than \$70.00. Applications for loans are to be made through Libbey-Owens-Ford distributors.

On commercial installations, a 20 per cent down payment is required, with up to 24 months to pay the balance. Amounts to be financed cannot exceed \$50,000.00. No down payment is required on residential modernization. The largest amount to be financed must not exceed \$2,000.00, and 36 months is the maximum for time payments.

Catharine Resigns from FHA

THE resignation of Robert M. Catharine, Deputy Administrator of the Federal Housing Administration in charge of mortgage insurance, to become comptroller of the Brevoort Savings Bank, Brooklyn, has been announced by Stewart McDonald, Federal Housing Administrator. Mr. Catharine will continue to act in an advisory capacity as an assistant to the Administrator.

Long-Bell Reorganization Complete

THE reorganization of The Long-Bell Lumber Company, which provides for the consolidation of the Long-Bell Lumber Company and the Long-Bell Sales Corporation, has been completed and became effective as of midnight, Nov. 30, 1935.

Elected Chamber of Commerce Director

C. SHEPPARD, Clarks, La., has been elected as one of the two members of the Board of Directors of the Chamber of Commerce of the United States from the lower Mississippi Valley (Seventh Election) District. Mr. Sheppard's extensive business experience includes such positions as president of the National Lumber Manufacturers Association, president of the Southern Pine Association, president of the Southern Hardwood Producers, Inc., and Chairman of the Control Committee of the Lumber Code Authority.

Schmieder Again with Milcor

ANNOUNCEMENT has been made that Robert S. Schmieder will again be manager of the Metal Specialties Division of the Milcor Steel Company, Milwaukee manufacturers of sheet metal products and fireproof building materials.

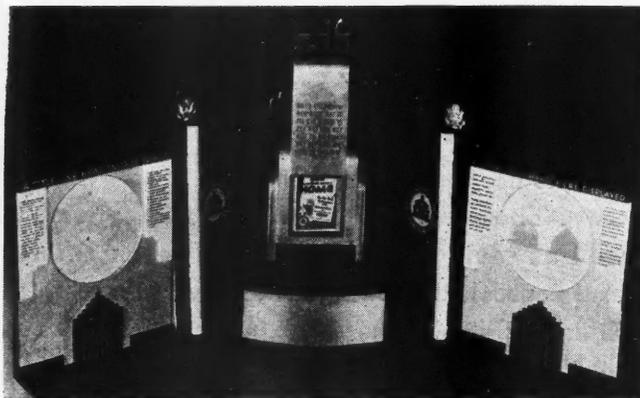


Photo of model showing design for one of the educational housing exhibits to be featured in 1936 National Home Shows.

SISALKRAFT

Keeps a House
Snug and Tight

—And Helps To Make A Better Side Wall

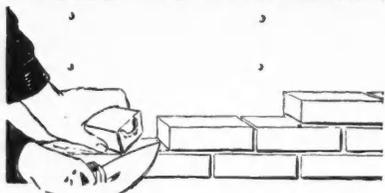
Sisalkraft's exceptional qualities of toughness, strength, air and water-proofness, especially recommend it for sidewall protection.



It has no equal when real protection is desired in frame wall construction. It guards against spotted or wet plaster. It wraps a house in a moisture and air proof blanket and makes it drier and more comfortable under all conditions.

When used over sheathing under brick veneer, or as a lining for solid brick walls, it shuts out dust, air and moisture.

While Sisalkraft is tough, it is also pliable and an easy sheet for one or two men to handle. The whip of the wind cannot tear it. It goes into place "whole"—and not torn as ordinary building paper.



Sisalkraft deserves your recommendation as an air, water, moisture and dust protection sheet throughout every new home. A Building paper can be applied but once, and Sisalkraft—because of its outstanding protection qualities—deserves to be that paper. When a home owner sees the obvious protection Sisalkraft will give he will want SISALKRAFT.

Get self-demonstrating Sisalkraft samples from your lumber dealer. Show them to your home buyers. Sisalkraft will sell itself to them.

THE SISALKRAFT CO.
205 W. Wacker Drive Chicago, Ill.
101 Park Ave., New York 55 New Montgomery St., San Francisco

LETTERS from Readers on All Subjects

Facts, opinions and advice
welcomed here

Forty or Fifty Inquiries

Kent, Conn.

To the Editor:

The "House of the Month" in the November issue of the *American Builder* has interested quite a good many of the readers, here in the United States and in Canada. As my name was given as the builder, I have received about forty or fifty letters asking for all kinds of information concerning same.

You now have plans and photographs of two more houses designed and built by me which I think would interest your reading public, insomuch as one of them is a small Colonial but of different layout and will cost only half as much to build.

The other house is also very interesting and can be built at a small cost.

I also have photographs of two other houses; one a New England Colonial which cost \$7,000 to build, and the other a Dutch Colonial costing \$5,000 to build.

CHARLES RASQUE, Carpenter and Builder

Fears Results if Costs Go Higher

Silver Spring, Md.

To the Editor:

As a prospective purchaser of a new home I should like to remark upon your recent "Government and Business" article. It seems to me that unless all responsible interests concerned with the home construction industry are prepared to offer ever better values at decreasing prices, as for example the automobile industry has always done, it is futile to expect any considerable revival; and excessively unwise to oppose the influence which is almost solely responsible for what little revival has occurred in home building. I have been looking about for some time, and everywhere am admonished to rush in and buy; prices are going up!

"Atlas" shoulders still are under the construction industry, as they are under transportation, and if the hold should be released and prices should go up only a little, homes under construction would be as scarce in a year from now as dodos on Main Street.

The objective of securing huge investments of private capital in home building field is not only laudable, it is vital—but as a corollary there must also be: low interest charges; long term mortgages, and elimination of all but very small service charges. The plans worked out by HOLC appear pretty nearly ideal to many who have held mortgaged homes in recent years—or at any time, for that matter. It would not be unwise for lending institutions to take them over almost bodily. That would assume high class construction and materials. The large organizations that are stepping into the field will assure that, I believe.

I am sure you will agree that home owner's interests are as important as are those of the builder, if not paramount to them, if there is to be a healthy industry. Wisely managed, the future of the construction (home) industry today is as bright as was the automobile industry twenty years ago.

G. G. HOLDT

Seems to Have "The Answer"

Washington, D. C.

To the Editor:

I live in a prefabricated frame house that seems to contradict your statement on page twenty, *November* issue, that "none of them (prefabricators) has been able to build and sell a successful low cost house." Also, same page, that "every effort to date to build in this class—which would cost from \$2,000 to \$3,000—has failed to provide the comforts, conveniences and living standards American people demand." Also the quotation from

(Continued to page 70)

this
fireplace
is easier to build



CIRCULATES HEAT
Will Not Smoke

THE Heatilator is a correctly designed metal form around which the masonry is easily built. Complete from floor to flue, it replaces firebrick, damper and other materials. And it does not limit mantel design or the type of masonry you wish to use.

Operating on the warm-air furnace principle, the Heatilator is a steel heating chamber hidden in the fireplace. Cold air is drawn from the floor into this heating chamber, warmed, then circulated to every corner of the room and to adjoining rooms. It cuts months off the heating season and dollars off the fuel bill by providing living comfort in spring and fall. In mild climates and for summer homes and camps it is the only heating equipment required.

Thousands of Heatilator Fireplaces are now in successful use throughout the country. Owners are enthusiastic about them. Builders find them a real selling feature. Heatilators are sold by leading building-supply and lumber dealers. Send coupon for complete details, including fireplace suggestions and installation data.

Heatilator
Fireplace

Heatilator Company
511 E. Brighton Ave.
Syracuse, New York

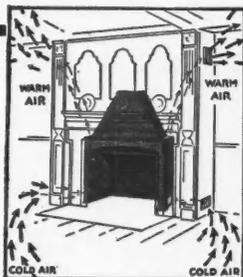
Heatilator Company
511 E. Brighton Ave.
Syracuse, N. Y.

Please send Heatilator booklet of fireplace suggestions and installation information.

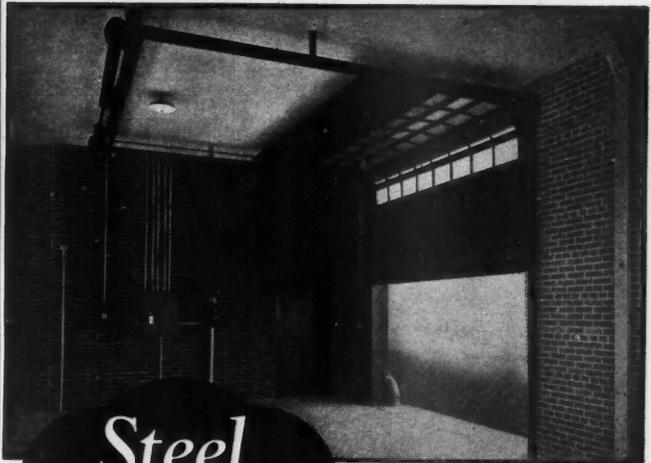
Name.....

Street.....

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



Especially Designed
FOR COMMERCIAL OR INDUSTRIAL SERVICE

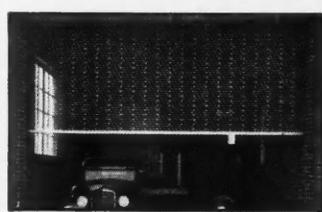


Steel
ROL-TOP

Convenient,
Burglarproof,
Fireproof, Durable

Stands the "gaff"! That's what is important when selecting a door for commercial or industrial service. And the Steel ROL-TOP does just that. It combines the durability and permanence of steel with the convenience of upward operation . . . a design that has made ROL-TOP so popular for residential use. The sections are made up of steel plates and angle irons, and hinged with a special Kinnear Interlocking Continuous Hinge. It's neat—permits the use of any number of light sections—built in any size for old or new buildings—fireproof—burglarproof—economical and simple to install . . . and above all will stand the years of hard service that we all know steel affords. Be sure to have the dope on the Steel ROL-TOP.

ROL-TOP'S efficient design, easy operation and durability means real service door savings to this modern metal station.



KINNEAR METAL ROLLING GRILLE

The new design of Kinnear Rolling Grille is just the thing to prevent pilfering, trespassing or intrusion . . . with the added advantage of light, air and vision. Operating like a window blind, it is out of sight when open—but always ready for easy, quick closure. Built in any size, for old or new building.

OTHER KINNEAR PRODUCTS

Don't forget that Kinnear specializes exclusively in doors. Besides the Famous KINNEAR Steel Rolling Door and ROL-TOP Door they have a door to suit any condition . . . whether you require doors of wood or steel (or other metal) for service or protection against fire or riot — operated manually or mechanically.

Mail Today!

The KINNEAR MFG. CO.

1560-80 Fields Ave., Columbus, Ohio

Please send me complete information on the STEEL ROL-TOP DOOR. Also details on Kinnear's full line of door equipment.

Name

Business Address

City

There's an easy way to sell HOMES

... AND A BETTER WAY TO BUILD THEM

MAKE THE BASEMENT YOUR SALES CLINCHER

● Progressive builders who are cashing in on the present building activity, know the value of featuring modern home equipment. They know, too, from experience, that the basement . . . the extra room . . . is today's sales clincher.

The Gar Wood Tempered Aire Automatic Oil Heating and Air Conditioning System, designed specially for homes, offers builders an added advantage. The installation of this important equipment makes any house a better home and, consequently, makes it easier to sell. Insist on Gar Wood Systems which are nationally known for their dependability and economy of operation.

Write us now for free "Home Heating Data". Find out for yourself how the Gar Wood System helps you sell the homes you build.

Air Conditioning Division

GAR WOOD INDUSTRIES, INC.
7924 RIOPELLE STREET • • DETROIT, MICHIGAN

OWNERS SAY:

Gar Wood

OIL HEAT COSTS LESS THAN COAL

WE ARE COOPERATING WITH THE FEDERAL HOUSING PROGRAM

Letters Dept.

(Continued from page 68)

FHA Technical Report No. 2, page thirty-six, that "experience records in their use are so limited that it is too early to tell which have definite merit and result in hoped-for better construction and lowered costs."

My house as it stands does not come within the \$2,000 to \$3,000 class. But I have more house, more frills if not more conveniences, than are required to satisfy the present demand. It does prove the entire practicability of the low cost house.

I have *built*, but have refused to *sell*, the answer to the torrent of academic eloquence (sincere and otherwise) of the past few years.

It was built in 1926, before the demand became a national chorus, and you are welcome to tear it apart to discover some slight sign of deterioration. There is none apparent and every member (except the second floor joist) is exposed to view. A ten year experience record, on an exposed site near Washington, D. C., should be sufficient to indicate "definite merit" or demerit.

This house can be built in days instead of weeks or months; in cold as well as hot weather; and, except for service installation, by unskilled labor. It is—even though built experimentally—warmer in winter and cooler in summer; more wind and rain proof, fireproof, bug and mouse proof than any frame house of which I have knowledge.

No new or untried principle of construction is involved; no new or, at this date, untried material is used; and no new machinery or capital investment is required for its fabrication; and no large scale mass production is necessary for its peak economy.

Before the invention of steel nails frame construction was largely mortise and tenon. Carpenters were then "joiners." The cheapness of butted joints, nailed, drove mortise and tenon jointure from the modern frame building except where great strength and rigidity of carpentry were required as in sash, door, blinds and furniture, and the destructive action of nails must be avoided.

The successful development of composition wall boards has now made it possible to return to first principles. They were good enough ten years ago and better now.

My framing is like any other except that instead of nailing the boards *onto* the frame, each member is channeled and the panels set *into* the members—asbestos boards outside and insulating boards inside—precisely as door panels are set into the stiles. Door and window jambs are rabbeted out and no trim is needed inside or out. This method—half-timber effect—saves 13 per cent of overlapping frame covering, and the thinness of the walls saves 7 per cent of floor space. Each framing member is lugged into its fellow member and no nails are needed. The only nails exposed, inside or outside, are the ones we hang pictures on.

I have not been secretive, nor have I made much noise about this construction, believing that time would prove its worth. Other efforts, as you so confidently state, have developed little of value.

I think you owe it to your readers to investigate this time-tested entry by a "practical man in the building industry," and by "investigate" I mean an examination by a technician capable of asking intelligent and embarrassing questions as well as determining its present condition. The house is located two miles southeast of the District of Columbia, at Parkland, Maryland, just off the Marlborough Pike. Phone Capitol Heights 471-R.

If you are interested I shall be glad to supply detailed information. Or if you have knowledge of any persons honestly desiring to provide low cost housing I shall be happy to place this exhibit at their service.

My address is Route I, Bennings Sta., D. C.

D. H. YORK

Painting, Paperhanging, Decorating

Good Photos and Plans Always Welcome

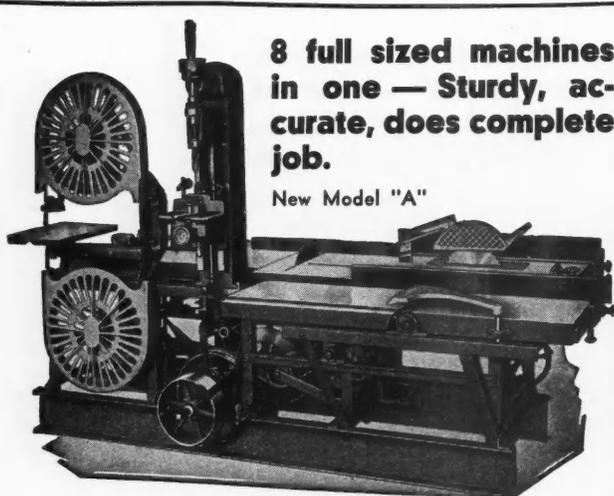
Evansville, Ind.

To the Editor:

We wish to compliment you upon your Christmas portfolio of homes which we believe is very fine and of much practical value to every retail lumber dealer.

During 1935 we have designed and furnished materials for

(Continued to page 72)



**8 full sized machines
in one — Sturdy, ac-
curate, does complete
job.**

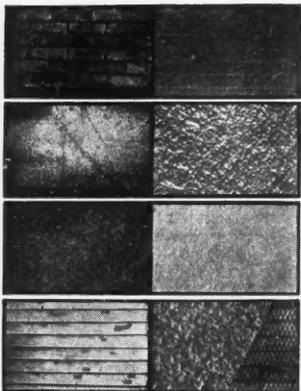
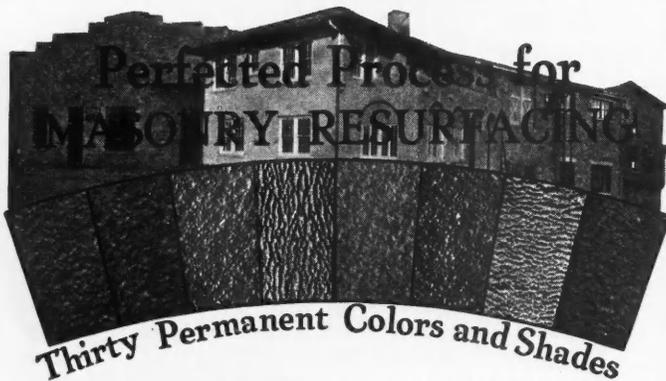
New Model "A"

The New Model "A" gives you a highly efficient modern shop, as each of these eight full-sized machines is independently operated. Compact, sturdy, accurate and with all bearings high-grade ball bearings.

Can be purchased on the FHA Plan—three years to pay.

Send for a catalog of our complete line
of individual and combination machines.

THE PARKS WOODWORKING MACHINE CO.
Dept. BL-12 1524 Knowlton St. Cincinnati, Ohio



Owners of masonry homes everywhere have been waiting for just such a method for the permanent renewing of walls and all masonry surfaces. Paint is unsatisfactory and too costly.

Colorcrete is a time proven process that has been in actual use for over seven years. It waterproofs and fills all cracks and checks. It can be applied in any thickness desired. It offers a choice of thirty permanent colors and shades. It fully meets today's vogue for colorful architecture.

Big Money in Resurfacing

Many Colorcrete operators are reporting costs of 10c to 15c per sq. yd. and selling for 30c to 50c per sq. yd. Some have paid

for their equipment from profits of one order. Hundreds of profitable jobs await you. Present demand for color and big

government renovating campaign are making this market bigger every day. Get started now and get your share of these big profits.

Learn how we help you get started. Equipment furnished on 15 days free trial and easy payments.

Learn what others have accomplished with this wonderful machine and process and what it offers you in your territory. Write today for Bulletin C-4.

COLORCRETE INDUSTRIES, INC.
505 Ottawa Ave. Holland, Mich.



Letters Dept.

(Continued from page 70)

quite a few homes of the better class which have been completed and are now occupied by the owners. We believe that several of these houses are outstanding examples of design and arrangement and also have proved to be economical types to build.

If you would like to have photographs and floor plans of some of these houses for publication in your magazine we would be very glad to submit same, passing on new ideas which we may have developed to other dealers in lumber and building products.

Yours for continued success.

BRADFORD LUMBER COMPANY

By Edward J. Small

Inventor Seeks Backer

Milwaukee, Wis.

To the Editor:

Have you any information concerning an organization that would be interested, in a national way, to take over the patent rights on a building material that shows a great promise and has a national market?

We have developed and patented a process for assembling Briar Hill, or any equally high grade stone of this type, with a light weight insulating concrete, called "Insulated Natural Stone." This material is made in two different ways; one is four inches thick for veneering purposes and the other is ten inches thick for solid wall construction, both in sizes to lay up a random ashlar wall.

The manufacture of this product is very simple, and does not require any expensive equipment. A flat stone slab two inches thick is set on edge in the center of a continuous box form, a light weight insulating concrete is then poured around the stone, making a sandwich of concrete with the natural stone in the middle. It is shipped to the building site in this shape where it is then split in two, each piece comprised of an outer veneer of stone an inch thick, backed with this insulating concrete. We estimate that a wall built of insulated natural stone veneer units costs about the same as a wall built of face brick at \$25 per thousand.

Our patent number is 1893430, issued Jan. 3, 1933.

FRANK NAVRATIL
Insulated Natural Stone Co.

We Thank You!

Birmingham, Ala.

To the Editor:

Please renew my subscription to the *American Builder*.

May I take this occasion to congratulate you on your very interesting and constructive publication, which is making a valuable contribution to improved living and economic conditions in America.

ROBERT JEMISON, JR., State Director,
Federal Housing Administration

Drafting and Estimating Students Interested

Norwood, Ohio

To the Editor:

I wish to express to you my keen appreciation of the *American Builder and Building Age* magazine. The magazine improves in quality and usefulness as the months roll by. We have included it among the magazines that the Board of Education purchases for the Drawing and Design Laboratory for the past four years. The boys, especially those who are interested in home construction and planning, look forward with interest to each new number.

We do not have the information necessary to enable us to use the cost key and thus determine the approximate cost of a number of the homes that are illustrated in each issue. May we have this information? It will add greatly to the personal satisfaction of the boys when they are examining the plans of a home.

CHARLES REICHLER, Jr.
Teacher of Drawing and Design,
Norwood High School, Norwood, O.

A NEW YEAR — A NEW DOOR FOR YOUR BUILDINGS

OUR DISTRIBUTORS
LOCATED IN EVERY STATE IN THE UNION
WILL TELL YOU ABOUT REPLACING YOUR OLD DOOR

WITH
THE OVERHEAD DOOR
FOR
GARAGE FACTORY WAREHOUSE

Economy — Satisfaction — Appearance
in the New Door for Your Building

THIS
NEW YEAR

INSTALLED IN NEW OR OLD BUILDINGS
A MILLION USERS THE BEST RECOMMENDATION

OVERHEAD DOOR CORPORATION
HARTFORD CITY, INDIANA U. S. A.

CLIP THIS COUPON and MAIL NOW!

MADE IN ANY SIZE FOR ANY OPENING
FROM A HANGAR TO A PRIVATE GARAGE

Please send me literature and full information regarding your product.
I am interested in doors for the particular purpose as checked.

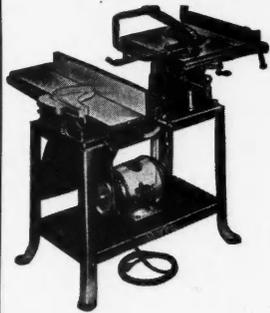
Name.....
Address.....
City..... State.....

PRIVATE GARAGE
PUBLIC GARAGE
WAREHOUSE
FILLING STATION
HANGAR
WOOD DOORS
STOOD DOORS
FACTORY DOORS
OTHER BUILDINGS
ELECTRIC CONTROLS

A. B. 1-36

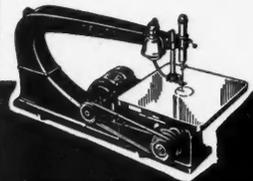
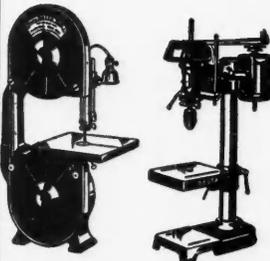
Mail to: OVERHEAD DOOR CORPORATION, Hartford City, Indiana, U. S. A.

NEW TOOLS FOR CONTRACTORS



These new, compact, portable Delta Motor-Driven Tools are being adapted rapidly by contractors all over the United States—for repair work, modernization and building. Their initial cost is surprisingly low—and they quickly pay for themselves in time and labor saved. You will be astonished at their accuracy, convenience of operation, and quality construction throughout. Complete Delta Line includes: Circular Saws, Jointers, Band Saws, Scroll Saws, Drill Presses, Shapers, Moulding Cutters, Sanding Units, Lathes, and a complete new line of Grinders as well as a full line of motors, accessories and stands.

For full details, prices and name of nearest Delta dealer write to

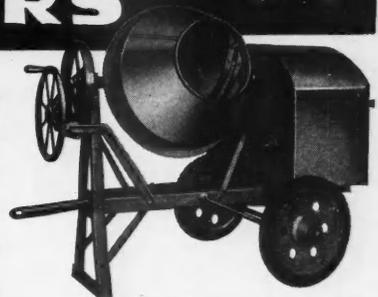


DELTA MFG. CO.

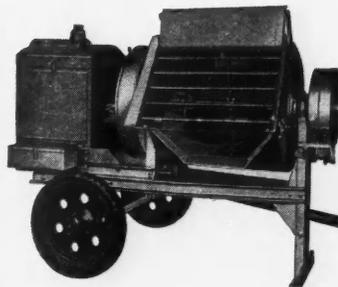
607 East Vienna Ave.
Milwaukee, Wis.

KWIK-MIX MIXERS

Full anti-friction bearing. Light weight. Skip shaker. Automatic water tank. Spring mounting. Sizes: 3 1/2-S, 5-S, 7-S, 10-S.



3 1/2-S Trailer — Roller Bearing — Spring Mounting.



Plaster and Mortar Mixers
Trailer and 4 Wheel Type.

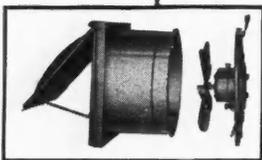
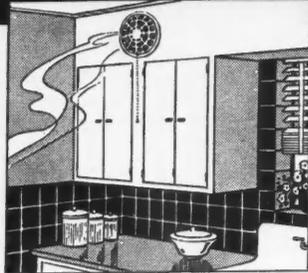
**Distributors!
Attention!**

Choice territories open for sale of Kwik-Mix Mixers.

See us at Koehring Road Show booth A-8.

KWIK-MIX CONCRETE MIXER CO.
PORT WASHINGTON WISCONSIN

New! VICTOR'S 10" IN-BILT



The above illustration shows the wall sleeve and shutter assembly and the motor and grille unit. At the right is a view of the weather-tight outside shutter, showing its "stream-line" design.



DISTRIBUTORS!

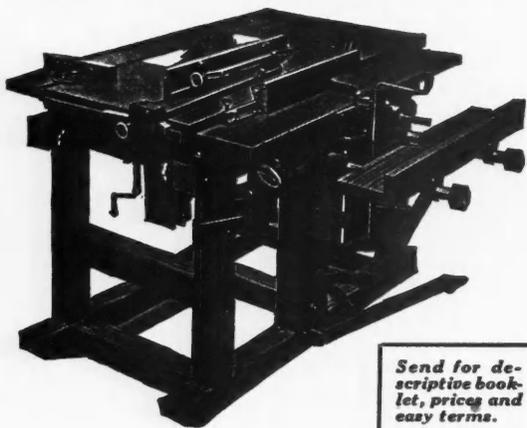
Organizations or individuals who are active in contacting builders, architects and contractors are invited to write regarding an exclusive sales arrangement for their territory. Kindly include information on present lines and territory now being covered.

Designed for the Modern Small Home Kitchen

NOW, efficient ventilation can be provided for any kitchen. This new Victor model fits in easily even where outside wall space is limited and its powerful 10" fan quickly removes all cooking odors and greasy fumes. Its exclusive design assures easier installation in walls of any type or thickness. Has such features as automatic operation—weather-tight shutter—one-shot lubrication—rust-proof finish. Send for literature and prices on Victor's complete line of kitchen ventilators and exhaust fans—write today!

Victor Electric Products, Inc.
702 Reading Road, Cincinnati, Ohio

There's No Economy in Worn-Out—Out of Date Machinery



Send for descriptive booklet, prices and easy terms.

Modernize your equipment with Monarch machines on our present low price, easy term plan, an opportunity that may never come again.

Install a Monarch Variety Woodworker and enjoy the efficiency of this four-in-one machine—cut off and rip saw with boring attachment, mortiser and jointer.

Other big time and money-saving machines include jointers, band saws, lathes, and the marvelous 20th Century Woodworker.

AMERICAN SAW MILL MACHINERY CO.
60 Main Street Hackettstown, N.J.

1936 Outlook Best in Years

(Continued from page 31)

The Committee for Economic Recovery also presents valuable supporting data on the incomes of families in the United States to show what type of houses they can afford. In 1929, the Committee stated, the following family incomes were reported:

FAMILY INCOMES — 1929

21.5%	had incomes of less than \$1,000.
42.4%	had incomes of less than \$1,500.
59.5%	had incomes of less than \$2,000.
71.2%	had incomes of less than \$2,500.
78.4%	had incomes of less than \$3,000.
83.7%	had incomes of less than \$3,500.
87.3%	had incomes of less than \$4,000.

It is a commonly accepted rule that a family should not spend more than double its annual family income for an investment in a home. Thus, on the basis of the boom-day family incomes of 1929, 87.3 per cent of the families of the nation should not have spent more than \$8,000. The Committee also makes an estimate of the family incomes in 1935 which reflects a still further need for houses in the lower price range:

FAMILY INCOMES — 1935

16%	are living on public relief.
35%	have incomes of less than \$1,000.
55%	have incomes of less than \$1,500.
75%	have incomes of less than \$2,000.
80%	have incomes of less than \$2,500.
85%	have incomes of less than \$3,000.

A study of the above figures indicates how much the home building industry is dependent on general prosperity and an adequate income for the average American family. Long-term amortized mortgage loans at low interest rate are imperative to enable the building industry to meet the need for homes of this type.

Kinds of Architecture

The 1936 market for homes in the United States will call for a variety of types of construction and design. No authoritative report on the exact number of houses of various styles and types is available. *American Builder*, through its wide contacts with architects, builders, dealers, plan services and producers of building materials, presents the following estimate as to the importance of the various architectural classifications in the 1936 market. It is the best available estimate based on actual building in 1935 and plans already under way for 1936.

1. *Colonial*—35 per cent. In this classification are included Cape Cod, Dutch, Georgian and other Colonial homes of both one- and two-story type.

2. *English*—25 per cent. Included in this classification are stucco and half-timber houses and many brick homes of semi-English origin.

3. *Western Bungalow and American Cottage Types*—25 per cent. In this classification are included the many small town and rural houses that follow a practical Western pattern that in the past was extremely popular but is now on the decline.

4. *Spanish*—5 per cent.

5. *French—Norman*—5 per cent.

6. *Moderne*—5 per cent. In the Moderne Classification are included a new trend which might be more properly described as modernized period styles in which the proportions and lines of a Colonial or other period home are retained but are given a simplified and modern exterior.

By far the majority of houses in the 1936 market will be five- and six-room in size.

DRIVER Saws Quickly Earn Their Cost In the Shop or On the Job



B961 10" Bench Saw illustrated above.

\$47.25
Less Motor Write
Dept. AB16
For Complete Catalog

In these days of highly competitive figuring, the contractor with DRIVER POWER TOOL equipment enjoys a distinct advantage. Because DRIVER Tools save time they enable him to quote a lower price or make an extra profit.

Many exclusive features place this saw in a class by itself. The table size as shown is 31"x21". The 10" blade rips and crosscuts full 3" stock. Table tilts to 45°. The mitre gauge is extremely accurate. The wood faced fence makes ripping accurate and easy. Another feature is the "nested" table insert. This comprises a small insert which is removed for dadoing inside a larger one removed for disc sanding.

Safety guard and splitter is standard equipment.

The DRIVER saw is a self-contained unit weighing 215 lbs. and may readily be transported to the job.

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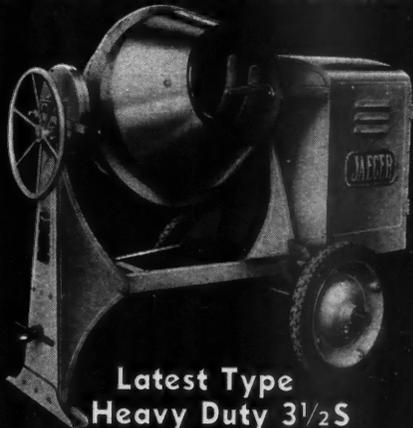
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FHA and Low-Cost Homes

(Continued from page 32)

Such principles are embodied in the requirements and recommendations outlined in the Administration's circulars and are intended to guide operative builders and developers in preparing new areas for the market as well as to aid the Administration in the approval for insurance of mortgages upon properties in such areas. "It is hoped," the subdivision circular says, "that they will in some measure aid in producing an even real estate market and in preventing alike the booms and collapses of past experience; that they will direct mortgage lending to the more desirable areas and; and that they will increase the volume of financing available for sound dwelling projects."

The FHA "Underwriting Manual" points out, however, that "the absence of some of the less important factors should not bring about a disqualifying or extremely low rating so long as the more important ones are well supplied. An insufficiency of the more important utilities or conveniences, however, such as water, gas, electricity, and sewage disposal, is sufficient cause for a 'Reject' rating."

In this connection, Mr. Mott pointed out that approximately 25 per cent of the subdivisions that had been approved as desirable sites had gravel or oiled roads and that approximately the same percentage disposed of their domestic sewage by means of approved septic tanks.

Septic tanks are accepted where they have been approved by local or state health authorities and the requirements as to paving are lenient. In some instances the Administration has asked developers to modify their plans in such a way as to reduce the extent of paving required, as by reducing the number of cross streets in the typical "gridiron" pattern where they are not needed and the subdivision circular provides that streets shall be designed "to accommodate local residential traffic only, maintaining trunk highways on its borders only" and that "the type and cost of pavements and utilities will be carefully related to the actual needs of the neighborhood. Such installation shall be adequate but shall not generally exceed such adequacy, thus permitting as large a proportion of cost as possible to be placed in the dwellings themselves." It is also provided that "paving for streets bearing purely local traffic may sometimes be of inexpensive materials and may, depending on the character of the neighborhood, omit curbs and walks."

Many proposed subdivision projects break down under the FHA risk-rating, and only those that are considered economically sound by the expert subdivision men in the FHA organization, many of whom are authorities on the subject with long experience, may obtain approval. Through rearrangement or reorganization, however, they may frequently be placed in the eligible class. The FHA has many letters from developers welcoming its constructive criticisms and suggestions. In some instances approval is given informally on condition that specified changes shall be made.

"The FHA requirements protect not only the Mutual Insurance Fund, but also the buyer," said Mr. Mott. "We do not want to glut the market with a lot of unnecessary subdivisions. We want evidence that there is a healthy and active demand for the property, and that there is a sound organization behind it, one that will be financially able to complete its program. We also endeavor to eliminate those factors which will tend to decrease values during the 20 years the mortgage is to run."

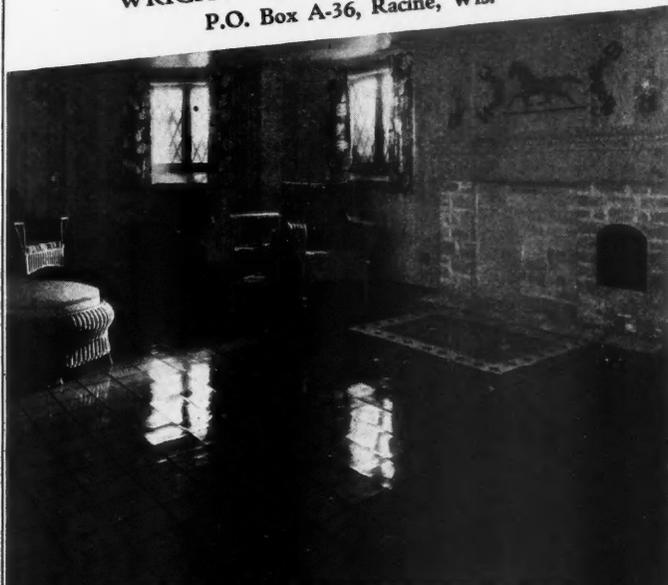
In one instance a project was approved although it did not have access to the city water supply after assurances had been given that the rates to be charged for water will be the same as the city rates. In some cases projects have been rejected because the deed restrictions ran for only ten years although the mortgage was to run for 20. In others approval has been withheld because too many purchase contracts are delinquent or there is too great an accumulation of back taxes. The requirement is that "not to exceed 50 per cent of the vacant lots which have been sold shall have reverted to the seller, or reached the reversion stage by default on purchase contracts" and that "not to exceed 50 per cent of the residential lots shall have delinquencies of more than two years' standing against them on account of non-payment of real estate taxes." Where too many delinquencies exist plans may be set up to enable payment over a period of years.

(Continued to page 78)

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FHA and Low-Cost Homes

(Continued from page 76)

Commitments to insure mortgages are made on a conservative basis in undeveloped subdivisions, those that are less than 25 per cent built up. However, no commitments are made in any area unless there appears to be evidence of a healthy and active demand for the type of property under consideration. Not only must the house and neighborhood meet the FHA requirements, but the character and earning capacity of the borrower must be satisfactory.

The Administration has recently approved a plan for acre farms and half-acre lots in the vicinity of Washington, D. C., where the only water supply available is from wells, but the installation of the wells and the septic tanks have been approved by county and state health authorities. Electricity is available and the streets will be graded and graveled. The property is adjacent to one main highway. Dwellings will be limited to single residents only and there will be restrictions against the resubdivision of lots. In this case approval has been limited to one section only until the property can prove itself.

The Administration has also given its approval to projects on Long Island where desirable homes are being sold for as little as \$4,000 including the lot, on a 20-year payment plan which makes the monthly cost per room, including heat, and payments on the principal and interest, as low as \$7 per room.

Chicago Average Exceeds \$10,000

A TIMELY contribution to this discussion of FHA policy favoring deluxe jobs or not is the summary of Northern Illinois district loans released on Dec. 27 by John A. O'Connor, district director. Quoting:

"The federal housing administration, in its first full year of activity in the northern Illinois district, has insured a total of 799 loans amounting to \$4,283,035 under the mutual mortgage insurance provisions known as title II of the national housing act and 3,009 loans totaling \$7,972,321 under the modernization credit plan known as title I, John A. O'Connor, district director, reported today.

"Of the 799 title II loans, 592 in amount of \$2,787,700 were for refinancing on existing property, while the remaining 207 for \$1,496,135 were for new home construction. At the same time the northern Illinois district office accepted for insurance a total of 595 mortgages with a loan value of \$3,228,210."

From these figures we see that the 207 new home construction loans made in Northern Illinois averaged \$7,228 each. If these followed the previously announced ratio of 68 per cent value of loan to total value, these 207 homes averaged in value \$10,618 each.

"Buy Lots—Drawing Plans"

(Continued from page 48)

Fleetwood, Mount Vernon, for the construction of thirty medium-priced dwellings.

A new organization known as the Yonkers Improvement Corporation, of which Joseph Tieman is treasurer, announced early in November a program for the erection of fifty dwellings near Greenvale Avenue, in Yonkers, N. Y. Construction will be by the Riger Building Corporation, using a steel frame construction with precast walls.

Another forward looking project was announced late in December by N. W. Zaubler, president of Certified Homes, Inc., with the purchase of a tract containing 100 building lots in the Edgemont Hills section of Scarsdale, N. Y. Plans are being drawn for the first ten houses, to cost from \$8,000 to \$15,000.

Everett Jacobs, Westchester operator, also has purchased a new 31-acre tract on Harney Road, Scarsdale, for improvement of fifty dwellings of the type recently built by Mr. Jacobs in his Fox Meadow Community.

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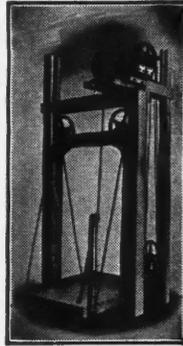
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Of Special Interest

127—Government Contract Requirements—A 60-page booklet by O. R. McGuire entitled "Matters of Procedure Under Government Contracts," which should be of considerable value to firms and individuals desiring to enter into contracts with the Federal Government for construction work or for the furnishing of supplies. The author is Counsel to the Comptroller General of the United States, consequently in a position to write with authority on these matters.—Obtainable without cost by writing the FIDELITY AND DEPOSIT CO. OF MARYLAND, Baltimore, Md.

128—Sanitas Samples—A large sample book of washable wall coverings has been prepared so that architects, builders, dealers, decorators, etc., can get an adequate idea of the designs and textures now included in this line.—Available from THE STANDARD TEXTILE PRODUCTS CO., 320 Broadway, New York City.

Construction Practice

129—Portland Cement Stucco—A new how-to-do-it brochure of 32 pages beautifully illustrated with photographs and color plates specifies how to get good results with portland cement concrete in the following surface finishes: Italian Travertine, French Trowel, English, American, Colonial, English Cottage, Italian, Californian, Mexican and Spanish.—PORTLAND CEMENT ASSN., 33 W. Grand Ave., Chicago, Ill.

130—Metal Lath and Accessories—Truscon Metal Lath and Hy-Rib Plastering Accessories and Metal Trim are adequately presented in a new 12-page brochure. Specifications for good practice and tables of weights and strengths are included.—TRUSCON STEEL CO., Youngstown, Ohio.

131—Kimbatts, Wood Fiber Insulation—The new product of an old company is presented in a new illustrated booklet, "Year 'Round Insulation." It shows why Kimbatts are easy to use, profitable to handle and perform a satisfactory insulation job.—KIMBERLY-CLARK CORP., 8 S. Michigan Ave., Chicago, Ill.

132—Steel Clip-Strip—"Frameless Steel" Clip-Strip is the ingenious joint cover for porcelain enamel sheets for building exteriors. They are illustrated and described in the new 4-page folder.—INSULATED STEEL CONSTRUCTION CO., Middletown, Ohio.

133—15 Points of Good Construction—A new 8-page folder with gripping photographs of recent storm damage and working drawings of frame construction guaranteed to withstand tornado and earthquake shocks is made available to builders, dealers and architects.—SOUTHERN PINE ASSN., New Orleans, La.

134—Perforated Rocklath—Stronger walls and ceilings are assured where builders make use of the method illustrated and described in a new bulletin featuring this new gypsum board perforated for plaster keys.—UNITED STATES GYPSUM CO., Chicago, Ill.

135—Leak-Proof Masonry—A specification for leak-proof brick work using "Mortar-proofing," either colored or uncolored, is presented in a new technical bulletin from THE MASTER BUILDERS CO., Cleveland, Ohio.

136—Shingle Overcoating—"Added Beauty That Is Free" is the argument presented for restyling and overcoating with shingles, in an attractive leaflet from the WEATHER-BEST CORP., N. Tonawanda, N. Y.

137—Crome Hardware for Beautiful Kitchens—Contending that "A Woman's Castle Is Her Kitchen," this manufacturer brings out some beautiful hardware items for kitchen cabinets and cases available through dealers. An interesting circular available from NATIONAL BRASS CO., Grand Rapids, Mich.

138—Builders Hardware—"Decide Now What Your Home Will Be Like in 1955" is the challenging title of an illustrated treatise on important items of builders hardware in the modern home and garage featuring the extensive Stanley line.—THE STANLEY WORKS, New Britain, Conn.

Important Equipment

139—Residential Lighting—The 36-page, beautifully illustrated catalog showing both photographs and color plates has been prepared for the use of builders, architects and dealers. This is Catalog No. 37.—MOEBRIDGES CORP., Milwaukee, Wis.

140—Westinghouse Electric Kitchens—"You'll Sing at Your Work!" is the title of an intriguing portfolio of modern kitchen plans, decorative color schemes, step-saving arrangements and the latest in electrical kitchen equipment offered by—WESTINGHOUSE ELECTRIC & MFG. CO., Mansfield, Ohio.

141—Air Conditioning—"Air Conditioning by Servel" is a 48-page treatise on air conditioning and the problems involved in the design and installation of satisfactory air conditioning equipment. Offered by—SERVEL, INC., Evansville, Ind.

142—Mark-Time Switches—Something new in electrical convenience is disclosed in a new folder. It describes the new electric switch which keeps the light on for an interval after the switch is turned off.—M. H. RHODES, INC., Rockefeller Center, New York City.

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(January, 1936)

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