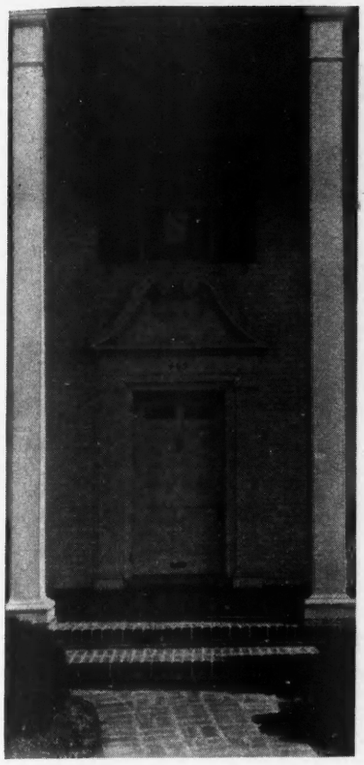

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AND BUILDING AGE

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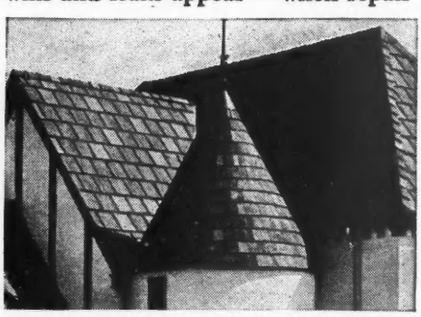

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FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

THE ISSUE OF SEPTEMBER, 1932

AMERICAN BUILDER
AND BUILDING AGE

PEACE, COMFORT, SATISFACTION—IN THE LITTLE HOUSE CALLED HOME.

FACTS POINT UPWARD

THE value of stocks and bonds on the listed exchanges of this country has increased ten billions of dollars from the low point recorded on July 8. This phenomenal rise in security prices, which have been climbing steadily since "the turn," is the most talked of subject of the day. The question is asked, what does it mean to the building industry?

The psychological effect has already been much discussed. It has been pointed out that a rising stock market means greater optimism all around. And this is true. But there is a much more practical benefit than that. The rise is security prices means more money available for building purposes. It means easier credit and a better attitude toward the spending of money for modernizing and new construction.

Take the example of Bill Jones, a business man who a few months ago was hard pressed for cash due to the shrinkage in value of collateral he had placed with a bank to secure a loan he had made from them.

Mr. Jones is really quite a prosperous individual. He has sound investments and a good income. But when stocks and bonds had shriveled to extreme low levels, it was necessary for him to use all the resources he could command to put up additional collateral.

Now things are different. The value of his collateral and of all his security holdings has about doubled. Instead of being hard pressed for cash, he has an extra supply, and if a contractor who is a good salesman happens to be handy, he may spend some money for home repairs or a new structure. The story can be repeated a thousand times over in nearly every walk of life.

Ten Billion Dollars!

The ten billion dollar increase in security values is equivalent to the value of the entire normal farm output of the nation in a year. It is a vast sum having a material effect on the prosperity of hundreds of thousands of persons who are live prospects for building industry salesmen.

Stock market prices alone cannot bring back a return of prosperity, but they can make a start. There are other factors in the present business situation that are encouraging. The price level of commodities in the United States has been fairly well stabilized for two months. Prices of a number of important farm commodities have risen in considerable degree, increasing the purchasing power of the farmer by several hundred millions of dollars. This added purchasing power in the hands of the farmer is of great importance.

Plenty of Encouragement

To those in the building industry who say, however, that people do not have money to spend, that the country is lost in depression, and who refuse even to try to bring about better times in the building industry by going out to sell, we offer the following facts:

America's mutual savings bank deposits are $1,233,000,000 higher than they were at the peak of the boom three years ago.

Total savings bank deposits exceed $29,000,000,000, equal to more than $1,000 for every family in the land.

Savings depositors number 52,000,000, nearly two per family.

A group of 102 companies which had 5,539,036 stockholders at the end of the boom year had 7,675,143 stockholders at the beginning of this year.

Our total stock of gold is $4,000,000,000. No other country ever possessed so much. Britain, for example, has only $588,000,000.

Last year $16,500,000,000 worth of new life insurance was written.

Total insurance now carried is estimated at $109,000,000,000, or not far short of $1,000 for every man, woman and child in the United States.

The income of the American people comfortably exceeds $1,000,000,000 a week.

There are still six or seven persons gainfully employed for every person idle.

Radios continue to multiply. The latest figure puts the total at over 16,500,000, representing an investment of $1,600,000,000. Motor cars in use total 25,800,000; and

new domestic mechanical refrigerators bought during the past three years total 3,750,000, at an estimated expenditure approaching $2,000,000,000.

The movies still attract a weekly average attendance of 75,000,000.

Such facts as these hardly call for a summary. But to be on the safe side:

(1) The people of this country have money to spend.

(2) They have been spending money and are spending it today for commodities far less desirable, economically and socially, than homes and home improvements.

(3) Men who are doing the right kind of aggressive advertising and selling are making profitable sales NOW without waiting for world affairs, the U. S. Government, the stock market or fate to come to their assistance.

PROMOTION OF HOME REPAIRS LOCAL NOT NATIONAL

AS outlined last month in this publication, an opportunity was seen for the organizing of a nation-wide drive on home repairs and remodeling to increase employment and to induce home owners generally to take advantage of present low building costs. The active backing of the Department of Commerce at Washington for such a campaign had been secured, an extensive background of publicity and public endorsement had been arranged for, and a group of leading building industry manufacturers was seriously engaged in working out the details for such a national campaign.

However, as they worked into the problems involved, it became evident that intensive local campaigns rather than a general nation-wide drive, would be required to accomplish satisfactory results.

Conditions and opportunities vary in different communities; and campaigns for home repairs and remodeling, in order to be successful, have to be planned and timed in accordance with the local facts and conditions in each community. The local building industry men are best informed as to these local situations and are entirely capable of organizing to cope with them.

For these reasons, the decision was reached to go no further with the national publicity campaign but to center on local campaigns in each community where local initiative among builders and dealers could discover a worth while opportunity for a comprehensive home survey and a home repairs and remodeling drive.

This publication has been asked to further the movement by publishing the essential features of the plan and program for local campaigns as formulated by the Committee, based on the experience of some two hundred communities which have already conducted such campaigns with more or less successful results. We present the recommended plan on pages 10 and 11 of this issue.

As pointed out repeatedly by this publication, the main responsibility for local home building, home repairs and the sale of home improvements rests on the builders, dealers and others comprising the local building industry in each community. If you have an unemployment problem in your town or if, as builders or dealers, you need more business, a thorough-going survey of the homes and other buildings in your community for needed repairs, remodeling and re-styling will produce astounding results.

Individual manufacturers are supplying their dealers with helpful plans for such detailed canvassing and organization. The Department of Commerce, Washington, D. C., Frederick M. Feiker, director, is also adding to the helpful material on home repair campaigns it has available, as worked out by the President's Conference Committee on Home Modernization, of which Mr. Feiker is chairman. A new pamphlet for free distribution is based on the results of the most successful campaigns and shows all the various steps to be taken.

Home modernizing campaigns since January 1, 1932, as reported to this Committee, have involved an expenditure for labor and materials not far from $50,000,000. It is estimated that the present potential for such work is close to $3,000,000,000—a worth while incentive for readers of this publication to get busy, each in his own community, without further delay.

THE FEDERAL RELIEF AND CONSTRUCTION ACT

THE special attention of readers of this publication is directed to the analysis of the $2,122,000,000 Relief and Construction Act, presented on page 14. The unemployment relief work provided by this huge proffer of federal credit can find its best utilization in the repair and improvement of homes and business buildings. Also, among the "self-liquidating projects" of a semi-public nature, for which the Act apportions a billion and a half dollars, housing for families of low income and the reconstruction of slum areas are specifically mentioned. Other items, also, designated in the Act, are of direct interest to the building industry and should be the objects of prompt and definite planning.

Robert D. Kohn, President of the American Institute of Architects, makes the following appeal for action:

> "It is surprising to find how little the public appears interested in the potentialities of this legislation. The Federal loans for self-liquidating public works construction, housing and slum clearance were primarily intended as a work-relief measure. It would be deplorable, indeed disastrous, if we failed to take immediate and complete advantage of the opportunity for relief thus afforded in every part of the country." —Robert D. Kohn.

BUILDING MEN PROFIT BY GETTING TOGETHER TO PLAN REPAIR DRIVES

Around the table—builders, dealers, all construction interests can chart local modernizing needs—plan a campaign—get the building industry itself working for itself.

Shoe-Leather Brings in the Orders—

Aggressive Personal Selling by Builders and Dealers Called for in Plans for Local Home Repair Drives

AS RECOMMENDED BY THE ORGANIZATION COMMITTEE OF THE ALLIED CONSTRUCTION INDUSTRIES

IN order to assist local building industry leaders in each community to organize local sentiment and to conduct a successful home repairs and improvement campaign this fall, a committee of the Allied Construction Industries has prepared the following guide or program for a local campaign:

THE PLAN—step by step

Organization and preliminaries

1. Survey your local situation to see what organizations already exist that should and will co-operate in the movement to create jobs among home owners. Relief or Unemployment Committees should be asked to sponsor this campaign.

2. Past failures have resulted from lack of follow through; from lack of persistent interest. Success has crowned the work where there has been full-time serious follow-up to convert work pledges into actual jobs and material purchases.

Since the one important opportunity to "make work" now is by persuading property owners to go ahead with repair, maintenance, and modernization jobs **that need doing,** it follows that the members of the construction industries—distributors and contractors and workmen—are the ones to carry the load. They have most to gain, and they should supply most of the power, in men and in money, to put the plan to work fruitfully.

Therefore, all these men should be called together to form a committee to volunteer its services to whatever appropriate organization now exists.

This committee of the building industry should designate an experienced and able building material man to act as full time local manager, with office and adequate staff, functioning under the auspices of the local Relief Committee.

3. Take a census of all unemployed in the building trades, and register them; this to be complete and include salesmen, office and store help. This census will reveal a condition so bad as to put the need of immediate relief action beyond argument. It is a powerful weapon in convincing public officials and other leading citizens that they should aid in every way. It is an essential factor in raising the fund requisite to carry on the local work.

There are needed a number of sub-committees, as indicated below. Men and women should be drafted to serve on these special committees from newspapers, banks, architects' offices and so forth, according to the work to be done.

Sub-Committees: Advertising—Formed of men and women from advertising departments of local manufacturers, merchants and publishers, or local advertising agents. Their work is to secure space (free if possible) and to prepare advertising copy for special local needs.

Publicity—Pick men and women who know this sort of work. They must be able and willing to give a good deal of time to the campaign, as ample publicity is vital to success. Managers of radio stations, secretaries of Chamber of Commerce and such organizations, are logical for this group; also newspaper men.

Architects—A group of men willing and qualified to advise on home improvements and remodeling projects.

Finance—Men fitted to raise funds to conduct the campaign; leaders in local construction industry are logical selections. They must be well known to the people expected to contribute. They will be responsible for proper expenditure as well as for collection of funds.

Demonstration Projects—A valuable sub-committee, made up of builders, realtors, and others interested in equipping and furnishing modern homes. They should endeavor to have one or more complete remodeling jobs open to public inspection during campaign; and will at least supply full information as to what can be done in this line and collect data on what actually is done locally, including definite advantages to property owners in rentals and such.

Time Payments—Representatives of banks, building and loan companies, mortgage and credit houses—prepared to advise and assist property owners to finance useful and necessary repair, maintenance and modernizing work.

4. **Budget**—While it is impossible to state here what the budget should be, in dollars and cents, for every local campaign—or even to set down a ratio of dollars to population that would mean anything—there is no difficulty in listing the major expenses to be met.

These fall into three groups:—

(a) Salaries and office expenses

He didn't know that "modernizing can't be sold"—He went right down his own street and sold one house in every twenty! Now his firm is looking for more "greenhorns" who don't know "it can't be done."

(b) Printing and advertising
(c) Meetings

(a) **Salaries**—A full time manager for the campaign is a prime necessity. He may be loaned by a contributing supply or contracting firm, but his salary should be paid from the campaign fund.

He will require a clerical staff, and perhaps other assistants (depending on the size of the community). These, of course, may be loaned by contributors or paid out of Committee funds.

Office space, free or otherwise, is an obvious necessity—and with it goes such unavoidable expense as telephone, lighting, postage, and so on. It is fully possible that furniture and equipment can be borrowed.

(b) **Printing and Advertising**—This may be the largest outlay of the campaign. The big item is to provide enough copies of a house survey folder, which includes pledge and report forms, to cover the home owners to be canvassed.

The subsection of publicity, which follows, describes a number of valuable uses for printed matter. Each local committee will do as its judgment and available funds suggest in using them.

Car cards, posters, slips to be mailed in monthly bills, broadsides, window display cards—all these and more are useful and effective; the budget should provide for at least some of them.

As to newspaper advertising, it will help if the local papers (or local merchants or civic groups) will give the space. Some advertising should be done—that is sure. A preliminary check-up will be necessary before arriving at the sum to be set aside for this purpose.

(c) **Meetings**—This expense depends on whether halls can be had rent free. Every effort should be made to secure use of American Legion or Lodge or School halls at no cost.

There may be luncheon or dinner meetings of workers, but these should be made self-supporting or nearly so by having those who attend pay for their own meals.

Another possible item of operating cost will be in paying expenses (carfares, gasoline bills, etc.), of volunteer workers in the house to house canvass. People who are unemployed may not be able to put their own money out for this, but it will not be a heavy factor in the budget in any event.

As can be seen, local conditions, such as free office space, free advertising space, low printing costs, and such, greatly affect the sum of money needed for a successful campaign. The total for **your** campaign can only be arrived at after careful study of your particular situation.

5. **Raising Funds**—The entire community benefits from this campaign, but the construction industry enjoys the direct gain in business. Local distributors and contractors in this group should, therefore, be called on to finance the plan. They stand to get their money back quickly. Once the budget is set up, it is a simple matter to apportion the shares each contributor is expected to provide.

Reluctant contributors can well be warned, truthfully, that a dollar for this campaign is likely to save him many dollars in relief contributions or in taxes to provide relief. The cost, shared by all who can expect to get business from the campaign, will be low for each contributor to the fund. It is at once a small and wise outlay in sales promotion and an insurance premium against worse to come.

Now, the Committees formed and funds pledged, you are ready to go to work to inform and arouse the community.

Arousing Public Interest—
by Publicity and Advertising

Publicity—1 Newspaper items and news articles
2 Radio talks (if there is local station)
3 Newspaper advertising (in free space if possible)
4 Direct mail—enclosures in monthly statements, etc.
5 Displays—in store windows, on trucks and cars, trolley cars, etc.
6 Posters and billboards
7 Movie trailers
8 Signs for property owners to display when work is being done.

Parade or Mass Meeting—or both. Parade can well lead up to mass meeting in large hall or park.

Demonstrations of remodeled houses.

Luncheons and dinners during campaign, to keep up spirit of workers.

Some method of showing progress of campaign to the community at large—a huge illuminated thermometer or dial (which may be contributed by someone, such as the electric light company).

Arousing Public Interest—
by Face to Face Contacts

1. Special meeting of selected leaders in the community, to explain the plan to them and secure their help. Get these leaders to sign pledges right away. This is the first move after the campaign fund is raised.

2. Make appeals, by special speakers or through communications to be read, to all organized groups in town—lodges, clubs, unions, churches, schools—at regular or special meetings. The clergy and school officials have shown general readiness to co-operate; and the fraternal orders also. Chamber of Commerce, Lions, Kiwanis, Rotary, American Legion, are obvious first groups to approach.

3. The High Spot—House to House Canvass of Entire Community, going over House Survey with Owners and securing pledges for at least a $10 minimum expenditure on repair, maintenance or modernization.

Modernization and Home Repair Campaigns From Coast to Coast

Nationwide Survey Shows Many Cities Which Have Stimulated Local Business and Reduced Applications for Emergency Relief Through Local Campaigns

By E. L. GILBERT
Eastern Editor, American Builder and Building Age

A FEW weeks ago, having heard that modernization and home repair campaigns were being conducted in a large number of cities, the writer traveled to a city of approximately thirty thousand population to investigate. Up a side street, not far from the main business district, was the headquarters of a local contractor.

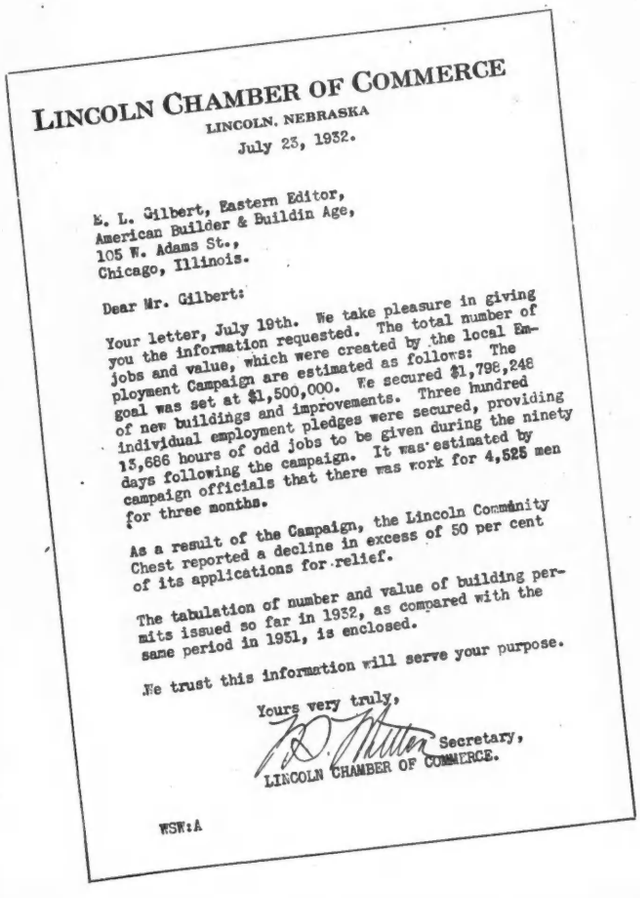
First view of the shop would not have been encouraging to a layman, for the little frame building was sadly in need of paint, some of the window lights had been mended with adhesive tape, and the chimney showed dozens of mortar joints "in retreat." But from the inside came the sound of woodworking machinery, lumber being moved about, an occasional shouted remark, the tap-tap of hammers. The weathered sign on the building read simply: "Carpenter & Builder."

I found the contractor busily wielding a stub of a pencil, with a piece of scrap lumber for paper, setting down a formidable column of figures. "They tell me there is no building business," I remarked. "That's about right," admitted the contractor. "Jobbing work is the only thing we can get today in any volume. I've only got one new job on the books right now. But I've got seven additions, four new porches, a couple of garages, and a few roofs being done. Besides that there are a lot of little odd jobs."

"Is that due to the local home repairs campaign being run in this town?" I asked.

The contractor thought for a minute. "Well," he replied, "we can't exactly trace any work—at least not more than a couple of jobs—to the campaign direct. But there's no question about the fact that the campaign has directed the attention of home owners toward their properties, and that has undoubtedly helped us get work."

Checking the building permit records in that little city against the actual work created, as revealed by local campaign headquarters records, showed that the building permits did not check at all with home repair campaign records; for every $1,000 of permit figures, in fact, there had been pledged by citizens something like $5,000 in modernization and home repair work to be completed within ninety days. A further check of the pledges completed to date showed that the dollar value of work actually being done was running slightly higher than the pledges; in other words, the real volume of building work of all kinds being done in that city totaled about five times the dollar volume of the building permits for the same period. Evidently what has been referred to for years as a "hidden market of the building field," was still "hidden," as far as official figures were concerned.



LINCOLN CHAMBER OF COMMERCE
LINCOLN, NEBRASKA
July 23, 1932.

E. L. Gilbert, Eastern Editor,
American Builder & Buildin Age,
105 W. Adams St.,
Chicago, Illinois.

Dear Mr. Gilbert:

Your letter, July 19th. We take pleasure in giving you the information requested. The total number of jobs and value, which were created by the local Employment Campaign are estimated as follows: The goal was set at $1,500,000. We secured $1,798,248 of new buildings and improvements. Three hundred individual employment pledges were secured, providing 15,686 hours of odd jobs to be given during the ninety days following the campaign. It was estimated by campaign officials that there was work for 4,525 men for three months.

As a result of the Campaign, the Lincoln Community Chest reported a decline in excess of 50 per cent of its applications for relief.

The tabulation of number and value of building permits issued so far in 1932, as compared with the same period in 1931, is enclosed.

We trust this information will serve your purpose.

Yours very truly,
W. D. Miller Secretary,
LINCOLN CHAMBER OF COMMERCE.

WSW:A

Eighty Per Cent of Home Repairs Not Reported

A survey of dozens of cities reveals the fact that, generally, 80 per cent of the work being done in home repairs consists of small jobs which do not require building permits or, for some other local reason, are not reported to either governmental or private statistical reporting agencies. Typical of the comments along these lines is a letter received from the Spokane, Washington, Chamber of Commerce: ". . . We are enclosing comparative figures on building permits for Spokane, but would call your attention to the fact that it is hardly fair to use these figures as a basis for determining the facts of the campaign, for the reason that permits would not be required to be taken out on many thousands of dollars worth of repair jobs." The figures for fifteen cities, given herewith, illustrate the condition.

Table Shown on Next Page

Comparison of Local Permit Records and Campaign Results

CITY	Jobs Created by Local Campaign	Building Permits for Same Period
Little Rock, Ark.	$2,680,000	$ 245,600
Sacramento, Calif.	2,294,371	1,915,364
Evanston, Ill.	500,000	428,750
Taunton, Mass.	327,000	282,712
Jackson, Mich.	343,113	248,442
Duluth, Minn.	3,700,000	471,243
Lincoln, Nebr.	1,798,248	144,077
Montclair, N. J.	138,000	83,812
Asheville, N. C.	267,000	40,118
Columbus, Ohio	2,000,000	880,700
Ponca City, Okla.	250,000	None
Sharon, Penn.	320,399	14,478
Spokane, Wash.	4,099,869	200,710
Superior, Wis.	300,000	203,856
Danville, Ill.	300,000	61,262
Totals	$19,318,000	$5,221,124

It is obviously unsound, therefore, for any builder, dealer, or associated professional to attempt to discover how much home repair and modernization work can be secured in his community, based on a fraction of the local building permit totals, as was customary practice a few years ago. Thus, whereas approximately 10 per cent of the building permits were estimated to cover home repairs and modernization in 1926, it is necessary to multiply the total permit figures by three to five times to discover the market for this work in any city which has a campaign in 1932.

Many Cities to Continue Campaigns

About 200 different cities have conducted campaigns or plan to start a campaign within the next thirty days. Many of the cities started campaigns early in 1932, planning to extend their efforts over a period of two to four months, but found the plan so successful that the work has been continued ever since, with plans now made to greatly accelerate the campaign activities throughout the fall and winter months. "Incidentally," writes Mr. M. H. Thompson, of the Little Rock, Arkansas, Chamber of Commerce, "it is planned for this committee to continue its program, although it originally proposed to function for only about four months. The success of the move has convinced the leaders that we should continue."

At Carthage, Mo., a profitable campaign has been held. Commenting on this, a local builder reported: "Carthage is a town of ten thousand people. This campaign was financed for about $350. The solicitors signed up approximately $70,000 in labor and material for improvement and new work, and with the development of other jobs later on, it is estimated that the campaign will run well towards $100,000."

Many Campaigns Followed One Builder's Action

In the early part of 1931 Mr. H. Kay Nicewanner, a builder in Muncie, Indiana, noticed an article in AMERICAN BUILDER AND BUILDING AGE regarding modernization and home repair campaigns. He immediately got in touch with his local chamber of commerce and since then there have been dozens of campaigns started, based on what has come to be known as "The Muncie Plan."

Wherever a local campaign is being conducted, builders and dealers should make sure that they get their share of the business created through publicity and committee efforts. And if there is no campaign activity in your town now—why not follow Mr. Nicewanner's example, and start things moving?

Reports from Cities

Jackson, Mich.

"Total value of work created by our drive so far in 1932 (materials and labor) $343,113."

Spokane, Wash.

"We have not yet completed our tabulations, but the Northeastern section of the city shows approximately 1,100 jobs. We are enclosing building permit figures, but would call your attention to the fact that it is hardly fair to use these figures as a basis for determining the facts of the campaign because permits are not required on many thousands of dollars of repair jobs."

Houston, Tex.

"Our Forward Houston Campaign, which put some 450 workers in the field to solicit jobs, secured 15,200 days of work and caused $205,000 to be spent for labor and materials. Local material men tell us that our campaign has stimulated their business."

East Orange, N. J.

"Contracts have been placed so far calling for the expenditure of $100,000 for home improvements between now and the end of the year. In addition, 160,000 hours of labor have been pledged at an estimated value of $100,000."

Asheville, N. C.

"Last February we organized a campaign for modernization and other property improvement. A total of more than $267,000 was pledged and the pledges are being met. Our building permits so far in 1932 value $40,118; there is a great deal of work done which does not come within the range of reported construction."

Ponca City, Okla.

"We have been running our campaign for more than a year and still have it in progress, with gradual and increasing success all the time. A salaried man is in charge and it is estimated that the Bureau has caused an expenditure of $250,000 for labor and materials. Building permits have been practically eliminated during 1932 thus far."

Owensboro, Ky.

"Our campaign has created about $5,000 worth of modernization and repair work. The campaign is still active. However, we are just laying the ground work for a much more active campaign this Fall."

Buffalo, N. Y.

"Of the jobs checked between March 14th and April 23rd, and found to be actually under way or under contract, the following are the total of the different classes of work:

Painting	$ 150,030.00
Mason work	98,084.00
Landscaping	16,459.00
Sheet Metal	8,730.50
Electrical	39,561.50
Cement	29,478.00
Carpenter	348,772.92
Roofing	79,475.04
Plastering	26,850.90
Interior Decorating	136,244.87
Plumbing	119,348.28
Flooring	17,923.75
Heating	15,637.00
Total	$1,086,595.76

Rochester, N. Y.

"Our campaign has created more than six million dollars in work. There have been 172 jobs of $1,000 each; 68 jobs at $2,000; 41 jobs at $5,000; 34 jobs at $10,000; 7 jobs at $20,000; 4 jobs at $25,000; 5 jobs at $50,000; 3 jobs at $75,000; and, of course, smaller numbers at amounts in between these totals. Altogether there have have been 648 jobs of $1,000 or more."

Little Rock, Ark.

"There were 43,600 opportunities for repair and paint jobs uncovered by our survey, to cost $2,680,000. This, despite the fact that general business conditions were 27 per cent below a year ago."

Two Billion Dollars For Construction!

Vast Credits Available for Remunerative Building Projects of Semi-Private and Public Nature

THE immediate stimulation of all construction interests is seen in the $2,122,000,000 Federal Relief and Construction Act authorized by Congress in the closing moments of the last session and signed by the President. Placed with the Reconstruction Finance Corporation to administer, the huge funds available under this Act are to be used, (1) for relief work, much of which will be construction, (2) for self-liquidating construction projects of a public or semi-public nature, and (3) for federal buildings and highways.

The Act provides for loans to states, municipalities and other forms of local government and to certain private corporations. Details on how the different types of loans are to be made and repaid are contained in the law. For the present all applications for loans under this Act are to be made direct to the Reconstruction Finance Corporation, Washington, D. C., which will act on all applications. At this writing no special application forms are required. Applications may be made in letter form and after being certified by the governor of the state may be sent direct to Washington.

Of the total amount authorized by the law, there are available:

$300,000,000 for relief and relief work. (Much of this will be invested in construction which will provide employment rather than a dole for men out of work and in addition will give communities needed improvements which they otherwise might not feel it practicable to build at this time.)

$1,500,000,000 for self-liquidating projects including bridges, tunnels, docks, viaducts, waterworks, canals and markets devoted to public use, housing for families of low income and reconstruction of slum areas.

$322,224,000 for federal public works including $120,000,000 to be loaned to states for federal aid highways.

Prompt Action Urged

Construction industry leaders point out that to secure the greatest benefit from this Act, local communities must exercise speed both in making loans and in getting construction started. This is because (1) the amount of money available is limited. Already many applications for loans have been made and at the time the law was signed, applications for about 340 million dollars in loans had been filed. Communities therefore which file their applications early are more likely to secure the funds needed; (2) the time during which loans can be made is limited; and (3) in order to obtain federal loans, much of the construction authorized by the new law must be completed within a comparatively short time. Specifically the Act provides that:

Loans for relief and relief work must be made within two years from date of enactment of law.

Loans for self-liquidating projects must be made before January 23, 1934.

Amounts available for federal aid highways can be used only on construction completed before July 1, 1933.

Therefore, to make more sure that they will benefit from the new law, communities are being advised to select speedily the local projects that are needed and that qualify for loans under this Act, and to lose no time in preparing applications for loans and getting them certified by the governor and then mailing them promptly to the Reconstruction Finance Corporation, Washington, D. C.

Much of the $300,000,000 designated for relief and relief work can best be invested in necessary construction, builders maintain; and it will be if prompt and energetic action is taken to influence it that way. Such a plan would confer a double benefit on the community adopting it. Since it has been estimated that 90 cents of every construction dollar ultimately goes to labor, use of relief funds for this purpose would furnish the community with improvements that are needed and also provide work for the unemployed. This plan would give employment rather than a dole to men out of work and thus would avoid many of the undesirable results that follow operation of a dole system.

The value of such a plan is illustrated by the experience of Wayne County (Detroit), Mich., where the Board of County Road Commissioners decided that it was preferable to give jobs rather than doles to unemployed men. Since last October, 4,600 fathers who formerly drew $12 weekly from the County welfare department have been paid $1,842,000 for labor on concrete highways, bridges, grade separations, parkways and a two-mile seawall in the Detroit area. In 39 weeks to July 1, the dole would have given each man $468. The average wage on the employment plan for the same period was $800. Funds raised by a half-mill tax cost taxpayers little more than if the dole had been continued.

While similar desirable results are possible under the new federal act, they will not be achieved unless local governments use speed in making necessary loans from the federal agencies and in initiating construction projects authorized by the law.

As thousands of applications for such loans will be made by local governments throughout the country and as the money available is limited, those that get their applications in at once are more likely to obtain the funds desired. A number of applications already have been made as shown by the following typical examples:

Wilmette, Ill., has applied for $600,000 to construct waterworks;

Toledo, Ohio, will apply for $15,000,000 to construct a water supply system and other improvements;

Wellsville, N. Y., is endeavoring to obtain $478,000 for a sewer system;

Mississippi will use federal credit to launch a $4,000,000 road construction program;

California has applied for loans to help finance two bridge projects costing many millions.

Governors of all the states and the mayors of large cities have been urged by the American Construction Council to speed up housing legislation in order that they may request loans under this new law for the rebuilding or modernizing of tenement and slum districts.

"It is interesting to note," states E. M. Craig, president of the Council, "that this writes into federal law for the first time a recognition of housing as a public utility."

As a part of the construction council's program to speed building activities of this type, letters were also addressed to several hundred local civic, business and welfare groups in various cities urging their active participation to effect the necessary legislation.

Home Loan Bank Districts Announced

Board Appointed Aug. 6 Makes Prompt Start to Organize New Federal Home Credit System

THE Federal Home Loan Bank Board, appointed by President Hoover less than three weeks previously, on August 24 definitely fixed the boundaries of the twelve districts in which the home loan banks are to be located, and announced that their initial aggregate capital is to be $134,000,000. It is the hope of the board that the home loan system for relief of the mortgage situation will be in operation by October 15.

The districts, togehter with the amount of the mortgages within their boundaries and the capital specified for the banks as approved by the Secretary of the Treasury announced by the Board are as follows:

District No. 1—The states of Maine, Vermont, New Hampshire, Massachusetts, Rhode Island and Connecticut. Eligible institutions in this district hold approximately $3,600,000,000 of mortgages of all types. Capital, $12,500,000. Bank location, Cambridge, Mass.

District No. 2—New York and New Jersey, together with Puerto Rico and the Virgin Islands. Eligible institutions in this district hold approximately $9,500,000,000 of mortgages of all types. Capital, $20,000,000. Bank location, Newark, N. J.

District No. 3—Delaware, Pennsylvania and West Virginia. Eligible institutions in this district hold approximately $1,600,000,000 of mortgages. Capital, $12,500,000. Bank location, Pittsburgh, Pa.

District No. 4—Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida and Alabama, with the District of Columbia. Eligible institutions in this district hold approximately $520,000,000. Capital, $10,000,000. Bank location, Winston-Salem, S. C.

District No. 5—Ohio, Kentucky and Tennessee. Eligible institutions in this district hold approximately $1,250,000,000 of mortgages. Capital, $15,000,000. Bank location, Cincinnati, Ohio.

District No. 6—Michigan and Indiana. Eligible institutions in this district hold approximately $575,000,000 of mortgages. Capital, $8,000,000. Location, Indianapolis.

District No. 7—Wisconsin and Illinois. Eligible institutions in this district hold approximately $825,000,000 of mortgages. Capital, $15,000,000. Evanston, Ill.

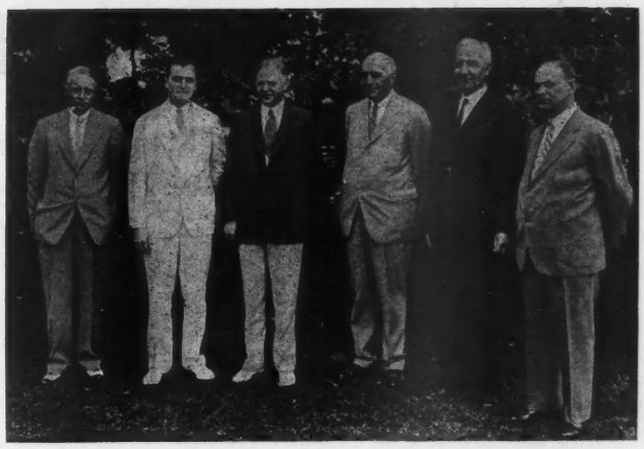
District No. 8—North Dakota, South Dakota, Minnesota, Iowa and Missouri. Eligible institutions in this district hold approximately $350,000,000 of mortgages. Capital, $7,500,000. Bank location, Des Moines, Ia.

District No. 9—Arkansas, Mississippi, Louisiana, Texas and New Mexico. Eligible institutions in this district hold approximately $340,000,000 of mortgages. Capital, $10,000,000. Location, Little Rock, Ark.

District No. 10—Nebraska, Kansas, Oklahoma and Colorado. Eligible institutions in this district hold approximately $400,000,000 of mortgages. Capital, $7,500,000. Bank location, Topeka, Kans.

District No. 11—Montana, Washington, Oregon, Idaho and Wyoming, with Alaska. Eligible institutions in this district hold approximately $200,000,000 of mortgages. Capital, $6,000,000. Location, Portland, Ore.

District No. 12—California, Nevada, Arizona and Territory of Hawaii. Eligible institutions in this district hold approximately $650,000,000 of mortgages. Capital, $10,000,000. Bank location, Los Angeles, Cal.



[Associated Press Photo.]

President Greets Home Loan Bank Board—Left to right: Nathan Adams, Dallas, Tex.; H. Morton Bodfish, Chicago; President Hoover; Franklin W. Fort, Board chairman; John M. Gries, Rosewood, O., and William E. Best, Pittsburgh.

A changed psychology respecting home mortgage loans has already taken place since the enactment of the Home Loan Bank Act, Chairman Franklin W. Fort declared in a statement made following the Board's initial meeting. He said that for the first time in history such loans are now liquid in character, provided, of course, that they fall within the provisions of the new law as to discountability with the banks soon to be created.

Debentures of the new home loan banks which will be offered to the public as a means of supplementing the capital of the banks will, he said, be among the highest type available for the investor, because, by the provisions of the Act, restrictions are placed about this security that are enjoyed by no other.

The Board, upon whose work much of the shaping of the new system depends, is made up as follows (Act states that each shall devote entire time to Board's work): Franklin W. Fort (Rep.), of Newark, N. J., former Representative in Congress from that State, chairman; Nathan Adams (Dem.), president of the First National Bank of Dallas, Tex.; William E. Best (Rep.), of Pittsburgh, Pa., president of the United States Building and Loan League; H. Morton Bodfish (Dem.), of Chicago, Ill., executive manager of the United States Building and Loan League; and Dr. John M. Gries (Rep.), of Rosewood, Ohio, Chief of the Division of Building and Housing of the Department of Commerce.

On August 13, Chairman Fort appointed two administrative assistants to important posts. William E. Murray, former assistant to Secretary Hyde, was named secretary of the Board, and A. R. Gardner, now with the Reconstruction Finance Corporation supervising applications for loans by building and loan associations, administrative assistant.

Among the problems facing the Board is whether home loan banks could best be established in cities now containing federal reserve banks, many arguments having been presented for each side. The prevailing sentiment appears to be that the home loan banks might well be established in cities which have no federal reserve banks.

Some cities are reported to have undertaken aggressive steps for obtaining home loan banks, for the obvious purpose of having this new source of capital close at hand, through starting solicitations for stock subscriptions in the event they can obtain a bank. This has opened the prospect that some of the home loan banks may be established without the Reconstruction Finance Corporation being required to advance a dollar to establish the minimum capitalization.

Cashing In On Home Cost Service

How One Dealer Became a "Star Salesman" for His Contractor Customers

By A. W. HOLT
Director of Service, Merchandising Council of National Retail Lumber Dealers Association

"WE just sold our first house from plans shown in this magazine," said a middle-western dealer in a city of about 25,000 last week, as he held up the July issue of AMERICAN BUILDER AND BUILDING AGE. "These houses with the Cost Keys you furnish give me the best merchandising plan I ever had for selling new house jobs.

"I figure up the cost of building each house. I can do it in a few minutes after I get the magazine, or I can figure them up when a prospect brings in the plans. It is quite different from telling prospective builders to call back in a week, and maybe sitting up nights figuring a list of materials. I sold this house right here, just the other day, because I could tell the prospect what it would cost to build—right away." He pointed to a plan at the top of page 20. Beneath it two other plans appear.

"I quoted all three houses on this page, partly to show them how fast I can do it, but principally to give them a choice, and so I could point out the advantages of each plan in dollars and cents. First I allowed $1,200.00 on each job to cover a fireplace, built-in cabinets, plumbing, heating and lighting, then figured each house separately."

Let us assume this dealer's Basic House price is $2,000.00; foundation costs $2.50 per lineal foot of wall; 20c per square foot of basement floor and 50c per yard for excavating. His prices for all three houses could be tabulated as follows:

House	Foundation	Basement Floor	Excavating 5′	Cab. Wk., Plumb., Lighting, Heating	Garage	Total
Plan at top of page 1.260 × $2,000.00 = $2,520.00	144 × $2.50 = $360.00	840 × .20 = $168.00	180 × .50 = $90.00	$1,200.00	Included	$4,338.00
Plan in center of page .937 × $2,000.00 = $1,874.00	120 × $2.50 = $300.00	788 × .20 = $157.60	170 × .50 = $85.00	$1,200.00	$200.00	$3,866.60
Plan at bottom of page 1.028 × $2,000.00 = $2,056.00	116 × $2.50 = $290.00	790 × .20 = $158.00	170 × .50 = $85.00	$1,200.00	$200.00	$3,989.00

Cost of a fireplace was included in the center plan, although not shown, so as to give relative costs for the same conveniences in each house. Garage allowances on the second and third houses may not be in exact proportion to the houses themselves, but illustrate how anyone can give comparative costs for like values.

We do not recommend the use of square foot or cube costs as a means of guessing at the cost of building a dwelling, or for appraisals of existing building, but when developed from predetermined costs, as in the following example, they can be very helpful in closing a sale.

If the lot, sidewalks, driveways and landscaping on each of these houses cost $1,000, relative costs of the three buildings, per square foot can be quickly computed, as follows:

Total Investment	$5,338.00	$4,816.60	$4,989.00
Sq. ft. floor	840	788	790
Cost per sq. ft.....	$6.35	$6.11	$6.32

Since the first house has one more bedroom than the others, and is slightly more elaborate, it is not surprising the prospect selected it after costs were compared.

When built there were very few changes made, at slight additional cost. The dinette was changed from a 2′ x 8′ to a 4′ x 13′ 6″ projecting room. House Valuator estimates were used to determine cost of this change from the original plan. House Valuator tables show a difference of .029 in the Cost Rates for the two foregoing sizes. At $2,000.00 for the Basic House (which every dealer has, or can get from his retail lumber trade association) this increased size adds only $58.00 to cost of the house proper. To this should be added $10.00 for 4 lineal feet more foundation wall; $8.00 for 40 sq. ft. more cement floor in basement (4x14 = 56 less 2 x 8 or 16 sq. ft.) and $4.00 more for 8 cubic yards more excavating, or a total of $80.00 for 40 sq. ft. more floor space. This added unit costs about $2.00 per sq. ft., less than 1/3 the square foot cost of the entire structure.

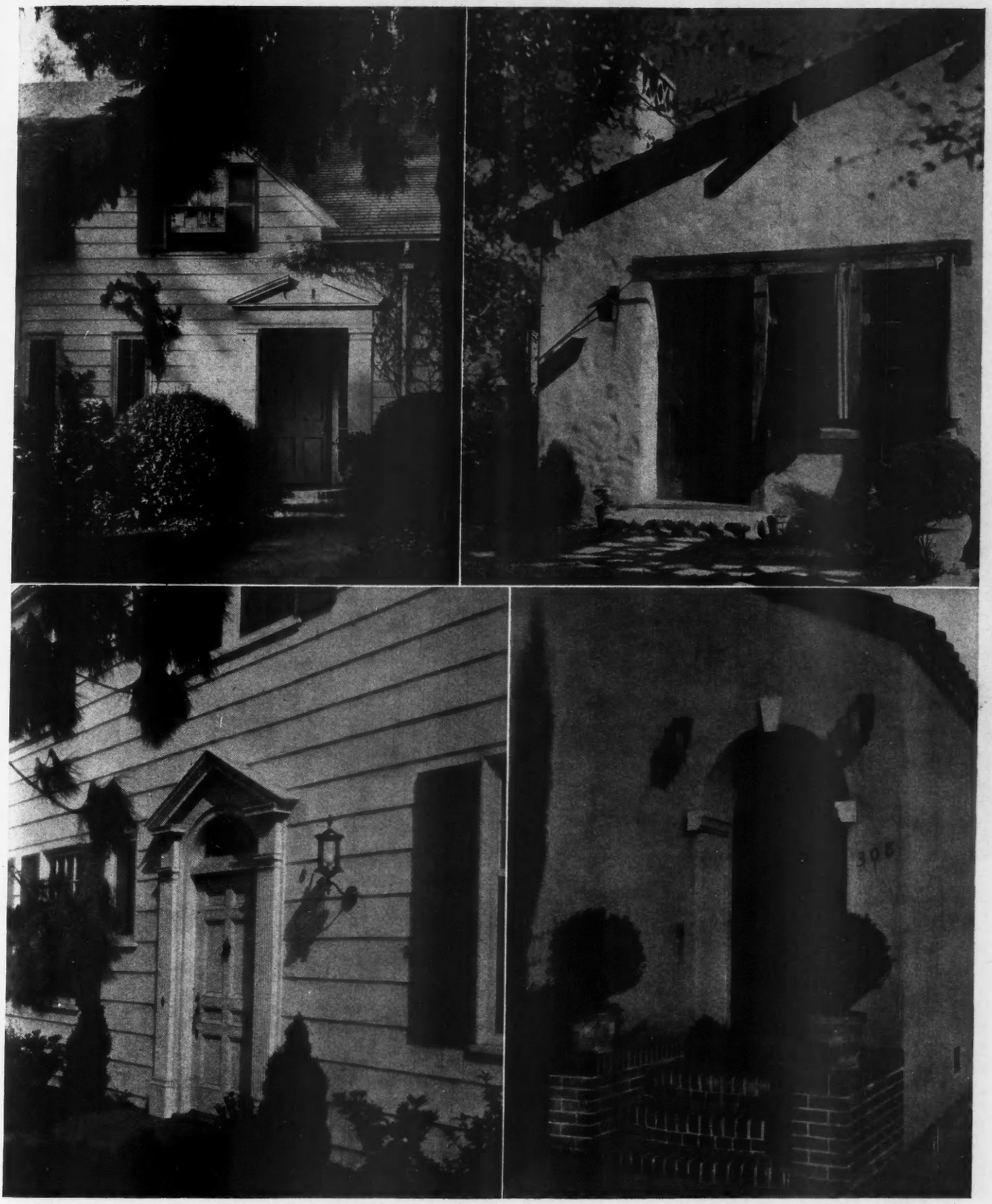
The dealer explained that the proposed change would permit making the kitchen stair a foot wider, then pointed out that the basement stair could then be located in front of the kitchen, or between it and the living room with an entrance off the passage hall. The other added foot permitted making the dining room 10′ 6″ wide, while the changed stair position made the room 12′ 6″ deep. By explaining that the room would be slightly larger than a 9′ x 12′ rug, he enabled the prospect to visual its size.

Equipped with this kind of cost information the prospect quickly made his selection and the deal was closed without competition. It is a complete "turn key" job at a complete, pre-determined price, except that the $1,200.00 allowance for variable features of plumbing, cabinets, etc., may be changed according to selection by the owner *after* the job started. This dealer, like many others, has found that a job need not hang fire while the prospect tries to decide between a pedestal or wall lavatory, or between a green or tan color scheme. The main thing is to close and "get going."

Home Cost Service makes it possible to *sell* homes, instead of *bidding* them. The dealer whose experience was just related is selling homes for his contractors. He is not in the contracting business, but has been authorized to close deals for his contractors. He knows materials better than anybody in his community and the contractors now feel he is their best salesman. The owner selects his contractor.

Because of this experience the contractors feel it makes little difference who closes the sale, so long as it is a good sale. This is one of the ways in which dealers and builders realize that their interests are mutual and that they must co-operate to market homes of high resale values. Home Cost Service makes it easy to promote quality building, for dealers and builders can use it to give dependable cost information on several different plans in less time than they formerly required for one.

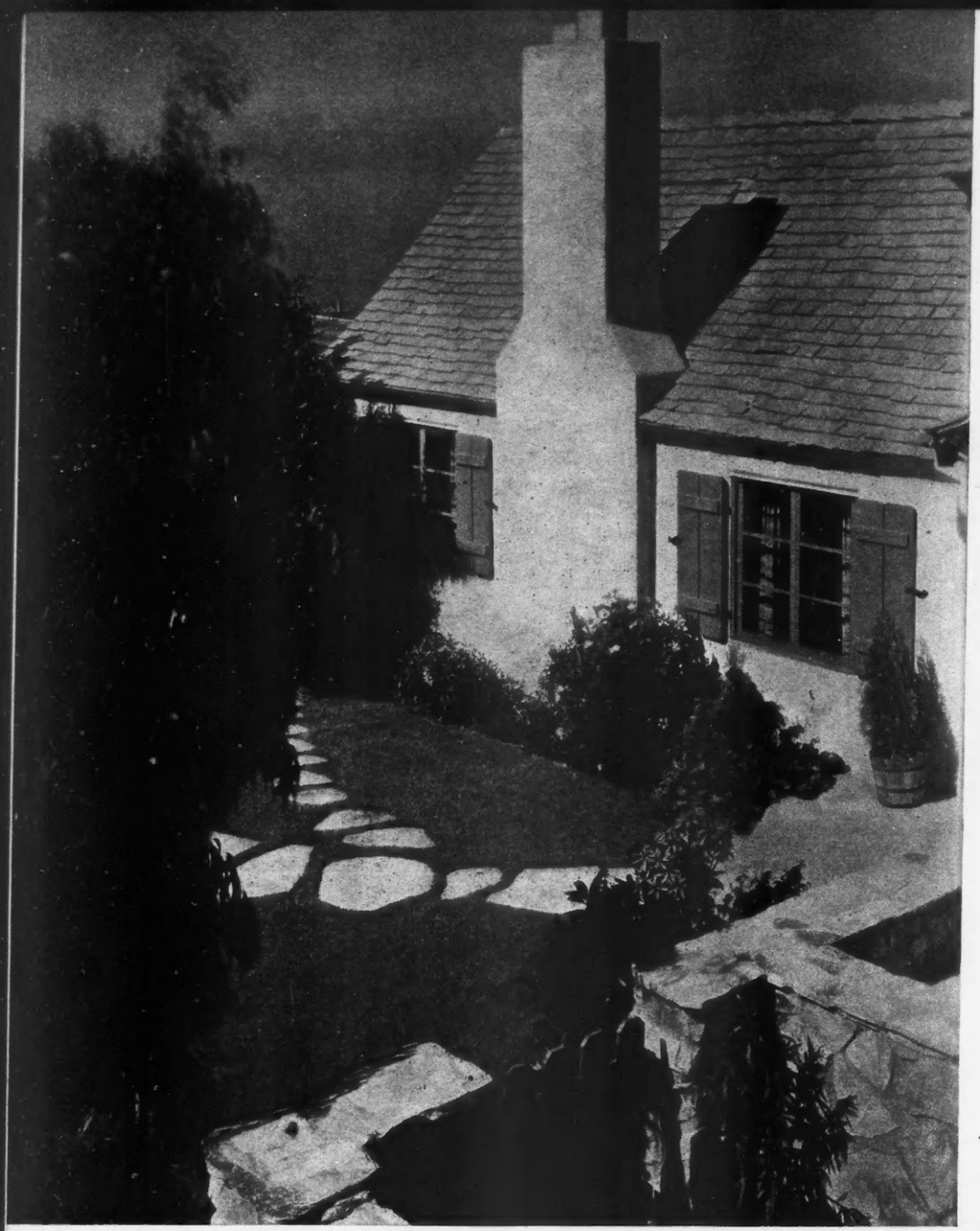
In case you wish to use Home Cost Service just "ask your lumber dealer." If he is not using it tell him to ask his trade association for his Basic House Material List and full instructions on how to figure it. By working with him you can then quote complete, dependable prices on a dozen different plans appearing each month in AMERICAN BUILDER AND BUILDING AGE, and can make full use of Home Cost Service.



Top left—recessed porch, David Ogilvie, architect. Top right—unusual Spanish door and window treatment, Robert Dennis Murray, architect. Bottom left—a fine Colonial door by McNeal Swasey, architect. Bottom right—brick steps and pleasing door. Photos by Miles Berne.

GOOD DETAILS MAKE FINE HOMES

The design details above, and those shown in the collection of houses on the pages following are selected because they illustrate fine points in home design. The Cost Key printed below houses is to help readers arrive at the correct cost in their communities.



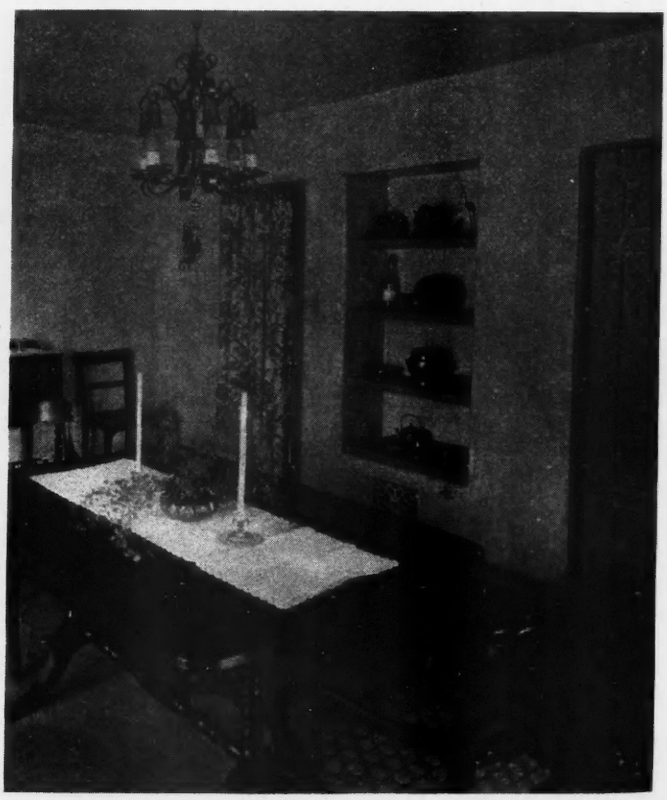
Details of A Stucco House In California

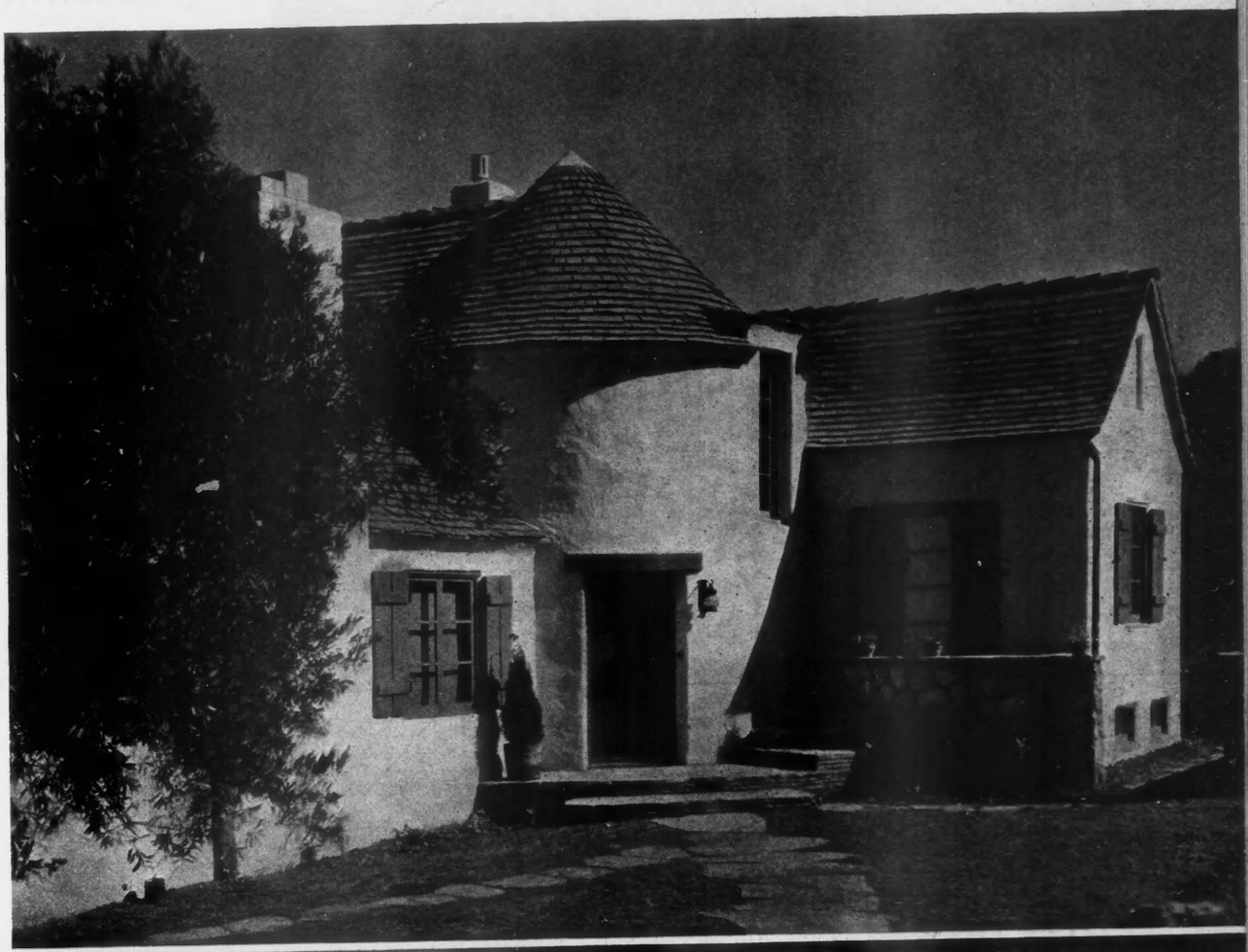
This unusual house was built by contractor C. K. Broneer in Palos Verdes Estates near Los Angeles.

From every side a new and interesting appearance is created. The detailing of chimney and windows at the left is splendidly done.

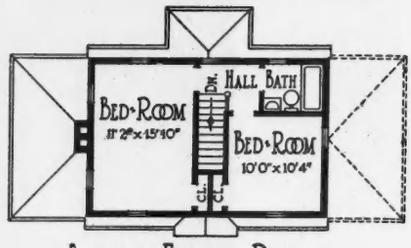
On opposite page are the tower entrance, with its unusual window, and the large, attractive living room. The window, fireplace and bookcases appeal.

Photos by Padilla.

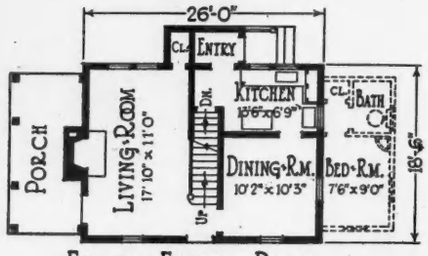




Small but Roomy

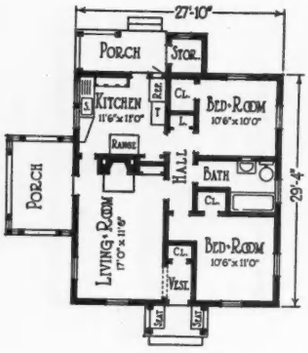


· SECOND · FLOOR · PLAN ·



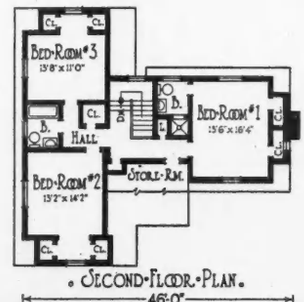
· FIRST · FLOOR · PLAN ·

Dutch Colonial above has room to grow. Architects' Small House Service Bureau Design No. 5-F-14. Cost Key is 1.281—100—560—24—16—10.



Apartment-like efficiency in small cottage at right. A. S. H. S. B. design No. 4-A-9. Cost Key is 1.209 — 124 — 837 —36—14—15.

Brick English cottage type below was designed by Louis Levine and is located in Mount Vernon, N. Y. Cost Key is 2.411—177—1292—54—25—27.



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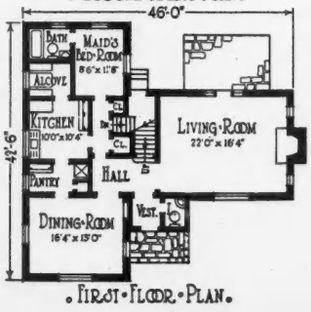
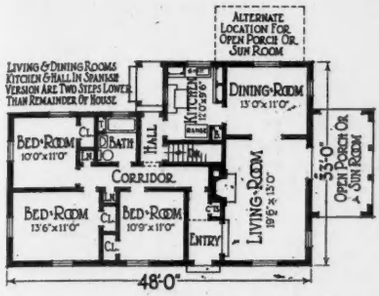
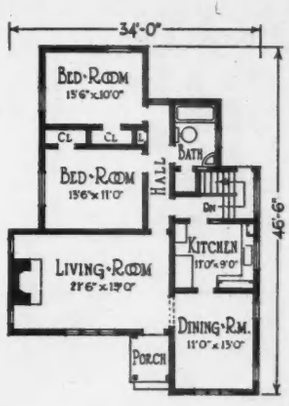


· FIRST · FLOOR · PLAN ·

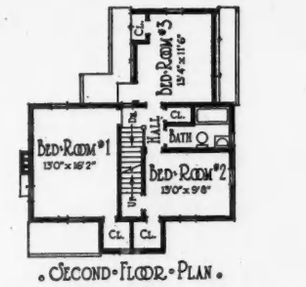
THE ISSUE OF
SEPTEMBER, 1932



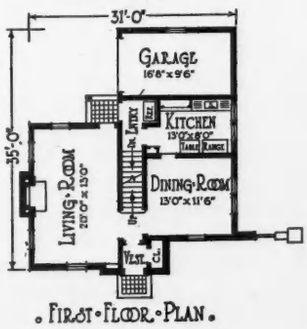
An unusual arrangement with many fine features and suitable for corner lot. A. S. H. S. B. design No. 6-A-91. Cost Key is 1.496—162—1368—57—18—19.



This English stucco type is growing more popular in California than the Spanish. A. B. Cleveland design. Cost Key is 1.305—161—1179—46—18—17.



• SECOND • FLOOR • PLAN •

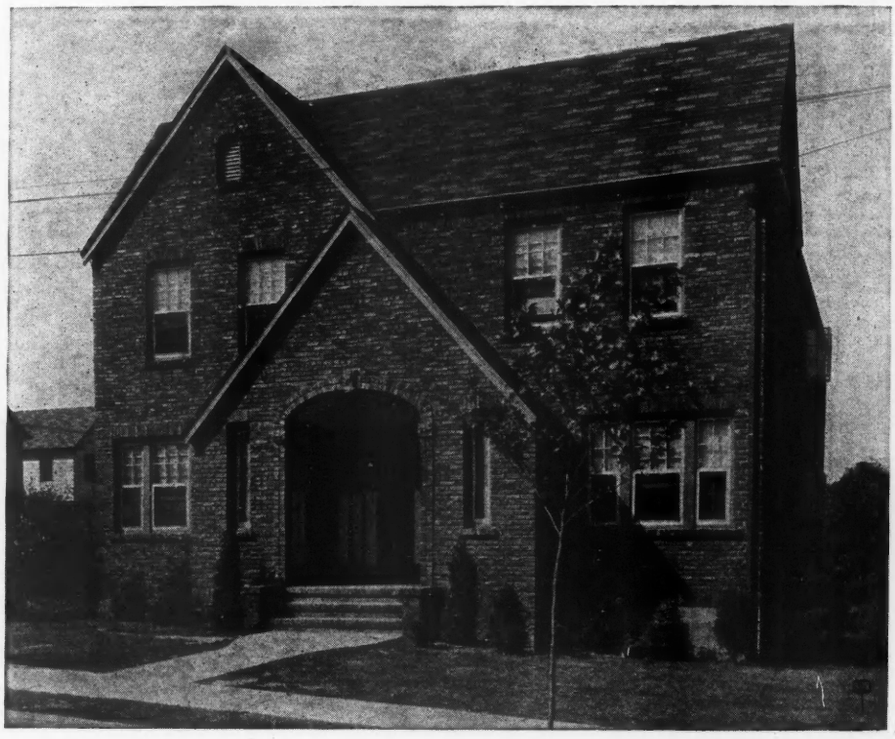


• FIRST • FLOOR • PLAN •

Shingles, brick, stucco nicely combined. R. C. Hunter, Architect. Cost Key is 1.713—135—641—29—24—15.

For Low Cost Apartments:

THE FOUR- OR SIX-FAMILY FLAT

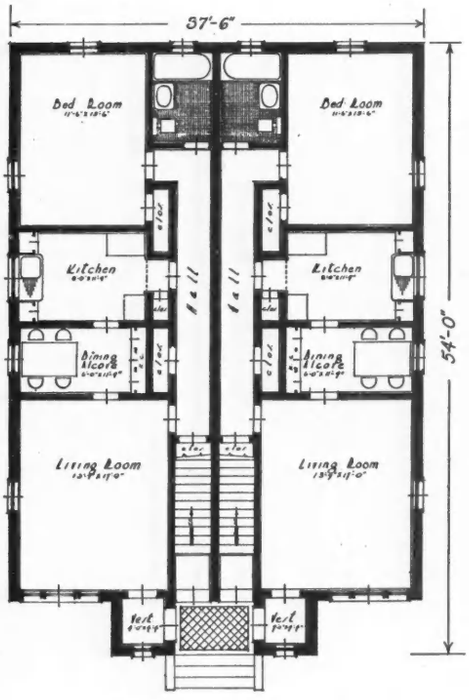


LYNCH, ROBERTSON, DOYLE & ELLIS
Builders

M. G. USLAN
Architect

Twelve four-family houses of this type have been built on Staten Island, New York, and have rented fast. Two six-family apartments have also been built and an eight-family structure is in prospect. Facades can readily be varied in design yet retaining the typical floor plan.

Cost Key 3.082—193—1915—78—37—24



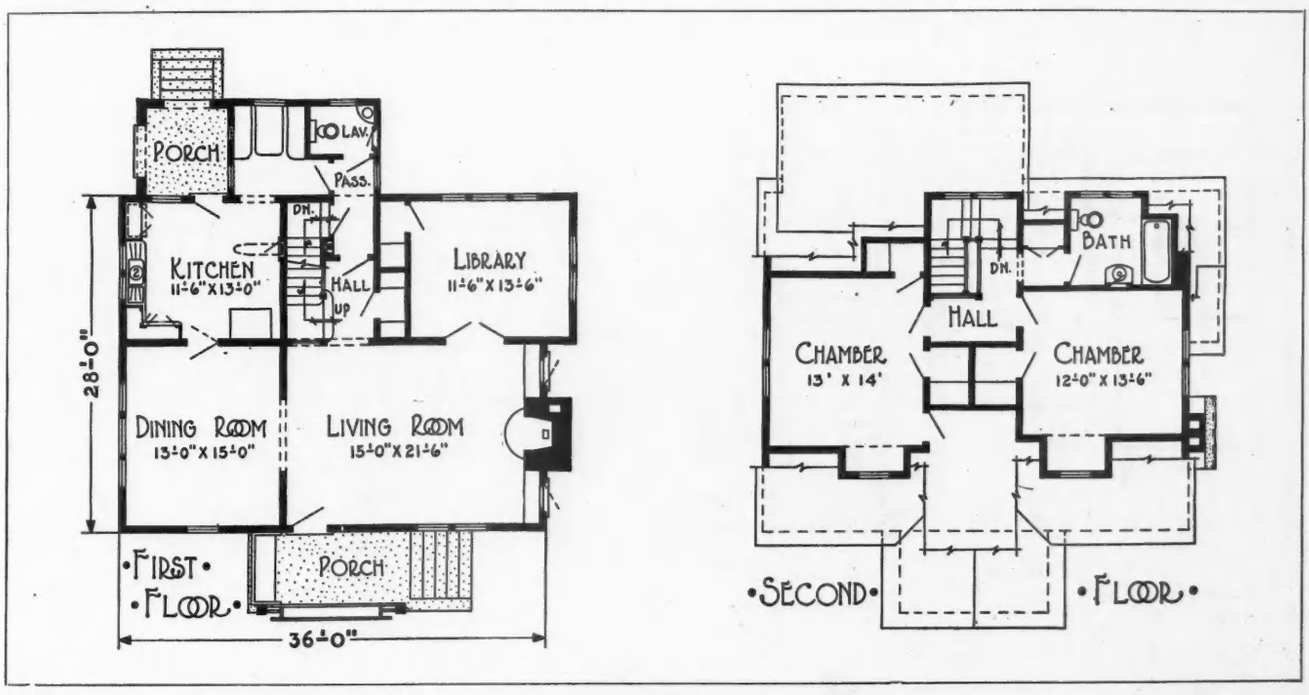
TYPICAL FLOOR PLAN

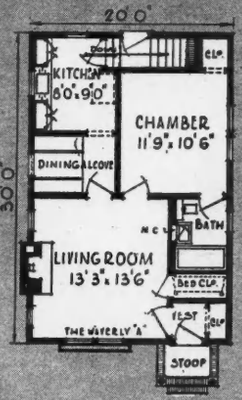
INCREASED demand for more economical living quarters has become evident in many towns and cities throughout the country during the past year. In a number of centers where demand for apartment space exists, inquiries are most commonly made for two, three, or four room suites in the lower rental ranges. The problem of supplying such a demand without tying up too large amounts of capital is solved by the construction of four or six family apartments, attractive in design, convenient in layout and economical in cost. The apartment illustrated on this page has proved one of the most popular rental types. A rent of $65 per month is charged for the 3½ rooms in each suite. The construction is of face brick, backed up by hollow tile. The party wall is carried clear to the top and is built of cinder blocks. Framing is of wood, 2″x10″ joists on 12″ centers. Composition asbestos shingles make an attractive covering for the sloping part of the roof and 5-ply asphalt affords a durable protection where the roof is flat. Foundation is of poured concrete, 12″ thick. Inside, the finish is of rough, colored plaster. In the kitchen and bathroom, there is a wainscote of black and white tile, 4½ feet high. Brass pipe has been installed throughout and the flooring is of oak. The building is heated with an oil burner that also provides hot water during the summer months. In some cases, the slope of the land has enabled the builders to place a garage in the cellar, to which entry is made directly down a ramp from the street. The floor plan to the left reveals a typical interior layout. Sunlight and air are provided on three sides. Each suite is entered through a side vestibule. The central hall is reached through a living room door and gives access to the bedroom and bath in the rear. The hall also provides additional sound insulation and privacy. This four-family flat has a volume of approximately 48,000 cubic feet and under present construction costs could be built for as low as $22,000 in places where costs are similar to the New York area.

Homelike Comfort Inexpensively Acquired

This Smart Story and a Half Stucco House Offers Six Rooms and Bath at a Moderate Building Cost. The design has an English flavor. The room arrangement is exceptional.

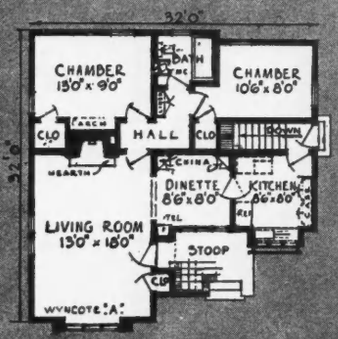
Cost Key 2.034—148—1192—50—22—22



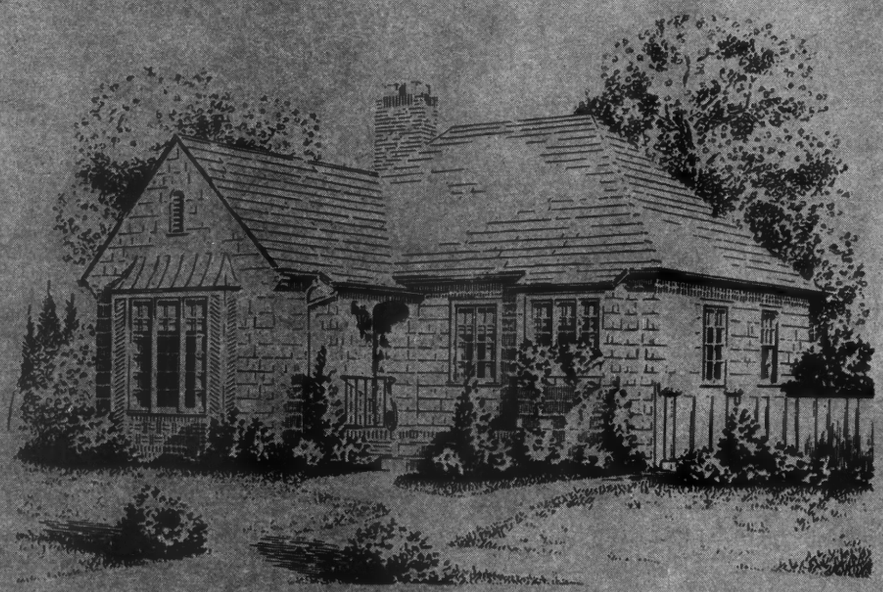


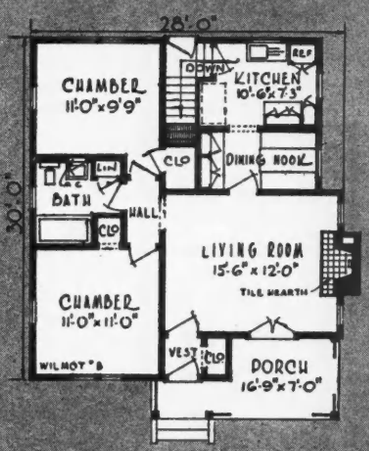
Three Low-Cost Homes

"Waverly" A:
Cost Key 1.111—134—884
—38—13—15.

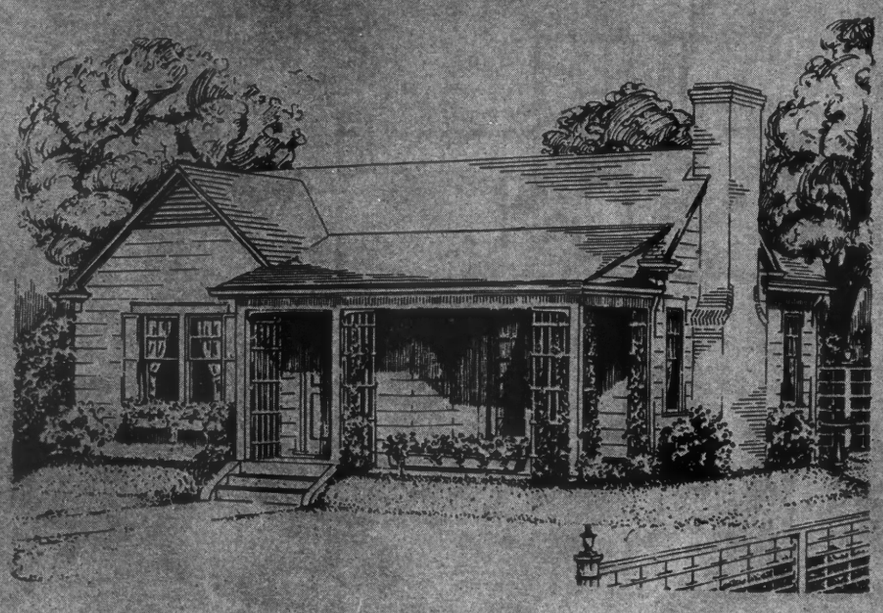


"Wyncote" A:
Cost Key .830—100—600—
26—11—9.





"Wilmot" B:
Cost Key 1.074—116—780
—33—13—12.



National Plan Service Designs.

5 Rooms and Bath—Complete—for $3950

As usual, there were many theories presented regarding "low cost housing" at the Small House Forum recently held in New York. Then, irritated by some of the remarks of speakers, a Long Island builder who has built more than 6,000 houses in this area in the last twenty years, told the assembled experts what he is DOING. Here's a story of values.—Editor.

IT has long been the contention of some experts in the building industry that a decent house cannot be built for less than $1,000 per room. Again this claim has been proved fallacious, this time by Mr. Edwin Mayer, a builder doing business at Copiague, L. I., N. Y.

"We are building houses today which are 25 feet wide and 32 feet deep," says Mr. Mayer, "They are individual homes on plots 40 by 120 feet, fully equipped, and sell for $3,950, complete."

A trip to the property revealed the fact that these small houses are well built, located within one hour commuting distance of Manhattan. City water, gas, electricity and sidewalks are provided. Each house has a poured concrete foundation, balloon frame finished outside with stucco, and composition shingle roof. The walls and ceilings are lath-and-plaster with textured finish, all corners wire lathed to prevent cracks. The front porch is of brick and concrete, side porch wood, with iron railings on both.

Inside, each house has a cement basement floor, oak over 1-inch subflooring for first and second floors, lath-and-plaster walls finished in texture. A game room will be built in the basement at slight additional cost.

Electrical outlets are provided in every room and the electric fixtures are modern and attractive. Window shades are included by the builder. Ample closets are a feature.

Steam heating equipment provides winter warmth and a hot water attachment, plus gas coil, assures plenty of hot water at all times. Brass pipe is a feature of these houses, being used throughout the plumbing; standard chromium fittings make the well known plumbing fixtures look even better.

The living room floor is dropped about eight inches, allowing this room a slightly higher ceiling.

The kitchen is worthy of note. It is equipped with a magic chef gas range, built-in ironing board, and combination sink-and-tub. The breakfast nook adjoining is furnished with table and two benches (not built-in); and the pantry which opens off the kitchen has a built-in cabinet dresser. Kitchen, breakfast nook, and pantry are well lighted.

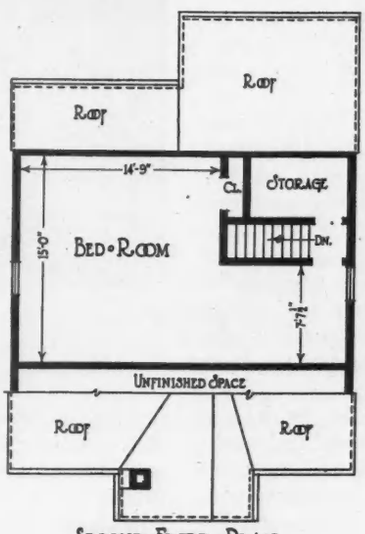
The bathroom is tiled, equipped with medicine cabinet, and tub-with-shower.

This house has been sold for $3,950 complete, including lot, and is a good buy in the Long Island market. Each house is financed by a $2,000 first mortgage, $1,200 second, and $750 down payment. Monthly payments of $39.50 cover taxes, fire insurance, interest on mortgages; under plan second mortgage is paid off in 4 years, 3 months.

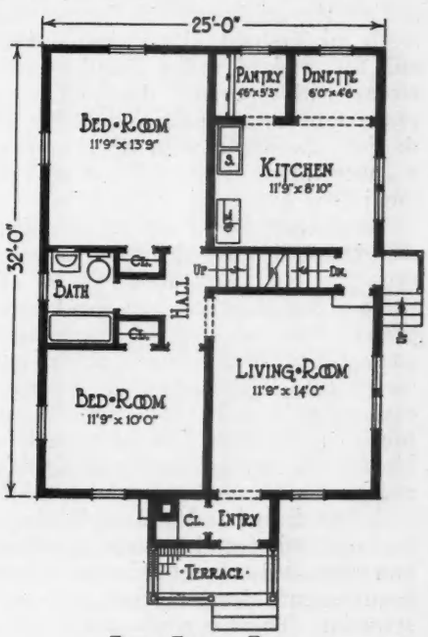
Cost Key 1.275—122—840—36—15—12

Although low in cost, the Mayer house is strong and well built. It is 100% modern in equipment.

House is skilfully laid out to make most of floor area.



·SECOND·FLOOR·PLAN·



·FIRST·FLOOR·PLAN·

Pre-Fabricated Lumber New Idea for Housing

House "Built in a Day" Demonstrates Cost Cutting Possibitities of New Method

By THEODORE KNAPPEN

SIX carpenters and a helper recently erected at Longview, Washington, a three-room cottage out of pre-fabricated lumber. In ninety-five minutes the ridge-flag was up. Within two hours framing was completed. By the end of an eight-hour day siding was on, floors were laid, doors and sash were set, flowers were blooming in window boxes and the shinglers and plasterers were being awaited. Only four of these carpenters worked on the afternoon shift.

This achievement dramatizes what the lumber industry is doing to hold its own in the residence building field in the impending area of sensational reduction in the cost of building homes.

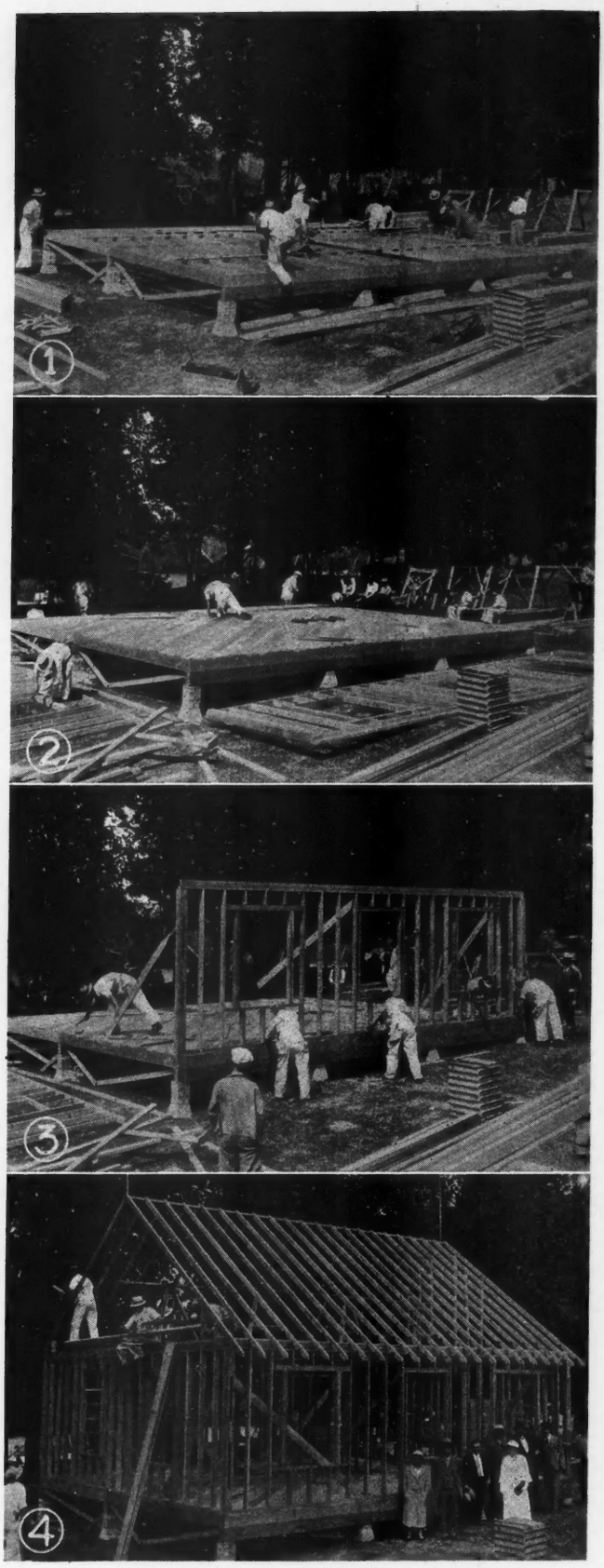
Competing producers of building materials have not slept during the period of dull business. Both as a measure of present-day life saving and with a view to future markets, their research and design engineers have been working overtime. New methods of building have been devised, new platform and wall assemblies, new service devices. Through it all runs the idea of prefabrication and/or pre-assembly of larger construction units. The lumber industry, seeing unexpected competitors entering its accustomed fields, could least of all afford to slumber.

Radical departures in floor platform construction and the design of several types of pre-fabricated assemblies for home construction are among departures the forest industries are preparing themselves to offer the market with the first awakening of a new and modernly inclined housing demand. The "enterlocking" lumber type of construction employed in the Longview house will be one of these departures.

What is this new principle? In the first place it is neither the ready-cut nor the pre-assembly idea as generally understood. It is the cutting of lumber at the mill to standard utility lengths and the fitting of such pieces with specially designed mortises, tenons, and grooves to assure precision fitting and ready fitting on the job. Nailing is reduced by approximately half. And a basketful of waste will be difficult to pick up when the job is over.

The idea of "enterlocking" fabricated lumber, as it is called, was developed by E. A. Laughlin, building engineer and for years active in the Texas retail lumber trade. The material for the house at Longview was prepared at the mills of the Long-Bell Lumber Company which has obtained manufacturing rights under his patent. The Long-Bell company is reported to be equipping its mills with special machinery and to be preparing to offer this fabricated lumber to the trade. No formal announcements along this line have yet been made.

So carefully has Mr. Laughlin worked out his designs that ten basic framing items, prepared in varying lengths and sizes and subject to order as desired, will meet the requirements for framing a house of ordinary construction. There is consequently no need for standardizing house designs. Take for instance the roof rafters, they are fabricated so that it is possible to build all the accustomed types of roofs. Half-round ridge and wall plates are milled. The rafters are cut and milled with corresponding half-round cuts in series so that by select-



1. Ten minutes after starting; **2.** After 35 minutes; **3.** Results of 50 minutes' labor; **4.** Framing flag nailed to ridge pole after 1 hour and 35 minutes' work.

5. Noon—what 3 hours' work has accomplished; **6.** At 3:00 P. M. the sheathing and siding were on; **7.** At 3:30 at work on the roof; **8.** The finished house.

ing the proper notch the rafter can be pitched at any desired angle. Hip and valley types supplement the ordinary rafter and all are to be made available at the lumber yard in varying lengths.

Dovetailing is a feature of the fabrication. This will stiffen the structure, lessen the number of nails required, speed the job, and, as in the case of studding, make it impossible for any fairly good mechanic to set the framing in wrong.

The studding comes in 2x4s and 2x6s, in three lengths for eight, nine, or ten foot ceilings. The joists are in nine lengths from 9′ 4″ to 20′, and in 2x4s up to 2x12s. The dovetailed headers and stud plates range from 8 to 20 feet in length. The "enterlocking" rocker rafters are in 2x4s and 2x6s in nine lengths from 6′11¼″ to 19′3¼″. Valley and hip rafters are in nine lengths. The ridge and wall plates for rocker rafters are of 1⅝″ radius and from 10′ to 20′ in length. The "enterlocking" diagonal sheathing is furnished in six lengths from 2 to 12 feet. Square and board stock is furnished in nine lengths in multiples of 16 inches. All stock is cut to exact templates. Also, all joist headers, joists studding, sheathing, lath, bracing, and the like are cut with the idea that they will be used on the accustomed sixteen inch centers basis.

In taking up production of "enterlocking" lumber the Long-Bell company calculated it would be suited to meet 84 per cent of the lumber requirements for the average five room modern home. The sixteen percent excluded is comprised of outside finish, inside finish, and doors and windows. The material included is accounted for as floor framing 15 percent; wall framing 13 percent; roof framing 7 percent; floor board stock 19 percent; wall board stock 24 percent; roof board stock 6 percent. They also calculate that there will be an 18 percent saving in the cost of a house built of such fabricated stock.

Turning back to the Longview project: This house was erected as a feature of the "Rolleo", the lumberjack's log-rolling contest counterpart of the rodeo field days held by cow punchers. J. E. Mackie, field engineer of the National Lumber Manufacturers Association, made a special trip to the scene to observe and time the erection of the house. Highlights of his report, including his morning "clocking" read:

"The construction commenced at 9 A. M. and at 6 P. M. the house was completely framed, including the installation of sash, doors and frames, siding, front and rear steps and main interior partitions. . . .

"Girders, joists, sill plates, and floor openings framed and in place ten minutes after construction was started. While sub-floors were being laid exterior walls were being built-up. At 45 minutes two outside partitions completely framed and sub-flooring in place. At 1 hour 20 minutes first floor framing, including sub-flooring, four outside walls, and main interior bearing partition erected. At one hour and a half ceiling joists in place. Five minutes later ridge pole and outside rafters in place with American flag fastened at one end of ridge and "Enterlocking" flag at other. Two hours after construction all rafters were in place and the building completely framed. At noon sheathing had been placed on exterior walls, except the gables."

Mr. Mackie reported that the engineer, Mr. Laughlin, had selected six carpenters known to be competent and had discussed with them in advance the principles of his type of construction. They had never before, however, had experience with such a type of material. It was the general consensus among those who watched the building, he said, that from the speed and facility with which these men handled the items of material, both in their selection on the lot and in fitting them into place, any man who could read ordinary blueprints could make no mistake and could show unusual speed in the use of such pre-fabricated material for house construction.

MODERNIZING Details for ELEMENTARY SCHOOLS

BY EMIL L. LARSON
Professor of Education,
University of Arizona

Rapid advance in school design has made obsolete a large per cent of the nation's elementary schools. This is a big modernizing field for builders. Check details given in this article against schools in your community and see if there is not work to be done.—Editor.

ONLY a brief examination of schools in a given community is required to show that many of them need modernizing.

According to the latest statistics available there are 153,000 one-room school houses in the United States, 245,000 elementary school buildings, and 10,598 high school buildings. If only ten per cent of this number were modernized in one year, it would make the entire building industry hum. Builders can help their own business and that of the country at large by investigating local schools to see whether or not they are in need of attention. The following data on modern elementary schools will be of value not only in modernizing but in new work as well, especially as applied to small schools of four teachers or less.

BUILDING EXTERIOR. Architecturally the building should be modern and pleasing; this does not mean it has to be expensive. Walls may be refinished in brick, stucco, clapboards, or shingles. All ornamentation of old fashioned and unnecessary type should be removed; high gables, towers, and turrets have no place in a modern school. Fire protection should be achieved by application of firesafe shingles and other materials, fire stops, fire escapes, etc. Barriers should not be placed over windows which would prevent exit of children in case of fire or panic. This applies to screens, which should be easily removable.

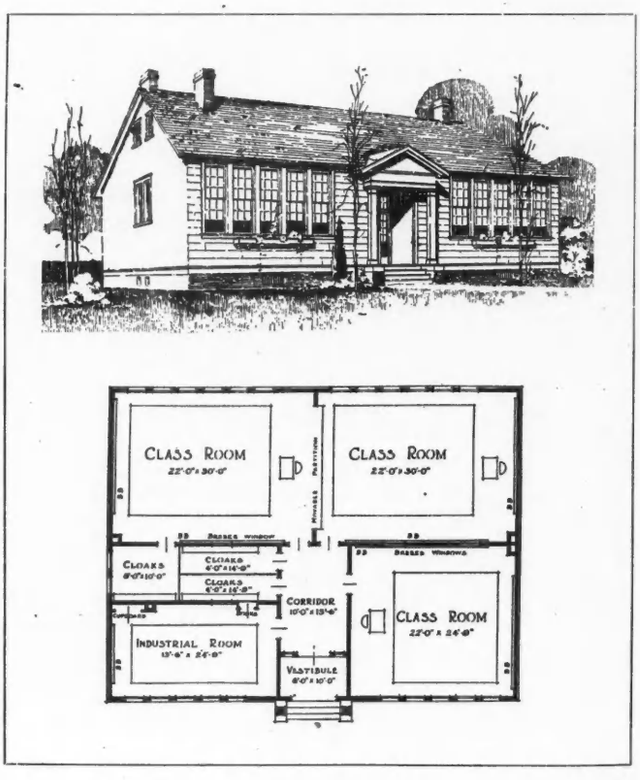
School buildings should be arranged to provide good lighting. Light exposure of classrooms should preferably be east or west. Next best exposures are southeast or southwest; they should never have full north or south exposure. Popular three or four teacher buildings are now being arranged in T, U, or E style, which allows entrance of light and provides for later expansion.*

Entrances should be not less than six by eight feet, of concrete with concrete steps, with six inch risers and twelve inch non-slip treads. Even the small one or two teacher buildings should have at least two entrances, one on each side or one at each end; three and four teacher buildings should have more. As protection against weather, entrances should be enclosed or covered. If heating system is located in basement an outside entrance should be provided, and if there is a community room in the basement, it should have an outside entrance which can be used during school hours without interfering with classes.

Authorities recommend two pairs of double doors opening outward, size 3 by 7½ to 8 feet. Panic bolts, checks, and stops should be provided, and doors should be substantial but not too heavy to be easily handled by small children.

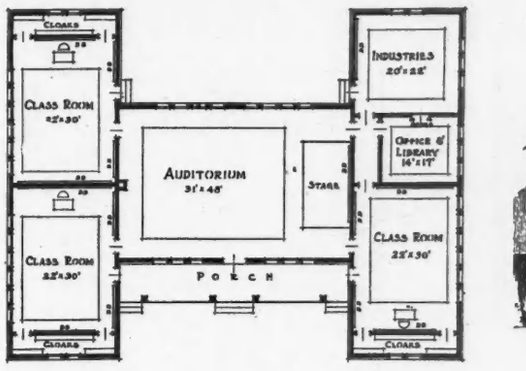
CORRIDORS, VESTIBULES, ETC. Worn and discolored floors should be replaced with modern materials, such as hardwood, heavy linoleum, rubber tile, composition material. Corridors should be 7 to 10 feet wide, well-lighted and heated, and coved to prevent accumulation of dust and dirt. Vestibules should be 8 to 12 feet wide with door arrangement which prevent cold air blowing into corridor. Stairways should be built of fireproof material, 4½ to 5 feet wide, with 12 inch treads, 6 inch risers. No storage room should be located under stairway.

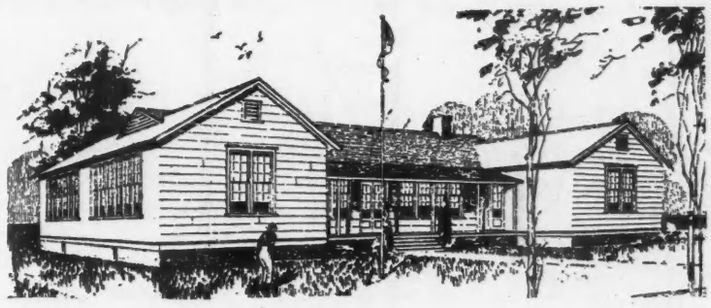
CLASS ROOMS. Rectangular design is recommended for class rooms, with students facing the long way. A good size for a thirty-pupil room is 22′ x 28′ x 12′; for forty pupils, 24′ x 32′ x 12′. Length above 30′ is not recommended because beyond this it is hard for students to hear the teacher or see the blackboard. Minimum requirement is 18 sq. ft. floor space and 200 cu. ft. of air space for each pupil. Glass area of windows should equal ⅕ to ¼ of floor area. Placing of windows is extremely important: they should be banked as closely as possible in wall on left of pupils, running from rear of room to within 7 feet of front wall. Windows should be from 3 to 4 feet from floor, with top as near ceiling as pos-



A small 3-teacher school of standard arrangement designed to face east or west.

An excellent 73-page booklet on rural schoolhouses giving many approved floor plans, construction details, and useful data is published by the U. S. Department of Interior, Office of Education. Title is Bulletin 1930 No. 21, "Rural Schoolhouses, School Grounds and Their Equipment." Price 20c. May be secured by writing Superintendent of Documents, Washington, D. C.





Four-teacher country school with auditorium, designed to face north or south only; popular in the southern states.

sible. Shades should be translucent, of light tan or straw color, double mounted at center of window.

Walls and ceilings of modern schoolrooms are being finished in sound-absorbing materials to improve acoustical effect; the ceiling should be tight, of good plaster or heavy wall board or composition material. Surfaces should be hard, smooth and non-glossy. Floors should be surfaced with heavy linoleum, rubber, cork, or composition material laid over cement, tile, or hardwood. Throughout the school floors should be double thickness, sound and tight to prevent drafts. Many an old building is several degrees colder at the floor than at the breathing line due to poor floor construction. A bad floor is a serious menace to the health of children. Color of walls should be light buff or light gray, with ceilings white or light cream; walls may be a light brown or walnut up to wainscot height.

Classroom doors should open out into corridor and should have glazed upper portion. Recommended size is 3 by 7 feet. There should be no raised threshold. At least one closet should be provided for each classroom for storage of books and supplies. Blackboards should be of slate or the new metals developed for this purpose, four feet wide and firmly mounted with close-fitting joints. Height from floor should be 24 inches for lower grades, 32 to 36 inches for upper grades. Blackboards should go across full length of front wall and wall opposite windows. A bulletin board of not less than 500 sq. in. should be provided. Cork, composition, or soft wood covered with burlap may be used. Built in features may well include a locker for teachers, bookcase, first aid cabinet, exhibit case and fire extinguisher alcove.

ELECTRIC EQUIPMENTS. The modern schoolroom should be wired for radio, moving pictures, or "talkies." In addition wall plugs should be provided for electrical demonstrations of various kinds. Electric clocks and electric bell systems are desirable when they can be afforded.

PLUMBING. Pure water must be provided in ample amount and should be tested frequently. Bubbling fountains of sanitary design which prevents mouth coming in contact with bubbler should be provided, one for each fifty pupils. They should be placed in corridor where they can be easily reached by small children. Latest toilet equipment is absolutely essential to the modern school, with washbowls adapted to height of children and toilets placed inside of building on same floor as classrooms. Toilets outside of building are strongly urged against. One seat is recommended for each twenty-five boys, and one seat for each fifteen girls. One urinal should be provided for each fifteen boys. Chemical toilets may be provided where running water is not available.

Toilet rooms should be light, airy, well ventilated, and with outside windows. They may be connected with separated cloakrooms. Walls should be of moisture-proof hard or vitreous materials, which may be painted or washed, floors of concrete or tile. Walls should be soundproof and entrances screened. Stalls with light swinging doors are recommended for each seat.

CLOAKROOMS. Ample space should be furnished for children to place winter wraps, umbrellas, lunch boxes, etc. The cloakroom should be located so as to be under supervision of teacher, yet should be separate from cor-

Check Your Local Schools Against These Items

EXTERIOR
Attractive
Fireproof constn.
Well-located
Entrances safe

INTERIOR
Attractive
Firesafe
Wide corridors
Recessed lockers
Drinking fountains
Fire alarms
Panic bolts on doors
Electric clocks
Electric bells
Incinerator
Hand rails on stairs

CLASSROOMS
Unilateral windows
Glass area adequate
Acoustic walls
Teacher's cases
Closet
Bulletin board
Telephone
Radio outlets
Movie outlets
Light and clean
Separate cloakrooms
Double floors

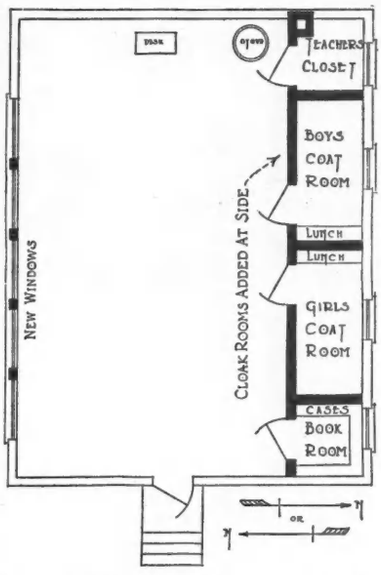
PRINCIPAL'S OFFICE
Storeroom
Vault
Toilet
Radio control
Clock control
Mail box
Key case
Telephone
Lavatory
Wardrobe
Conference room

AUDITORIUM
Broadcasting system
Acoustic treatment
Clock
Scenery storage
Dressing rooms
Footlights
Motion picture booth
Drinking fountains
Public foyer
Balcony

SPECIAL ROOMS
Boys' playroom
Girls' playroom
Community room
Teachers' rest room
Lunch room
Kitchen
Clinic
Janitor's room
Teachers' toilets

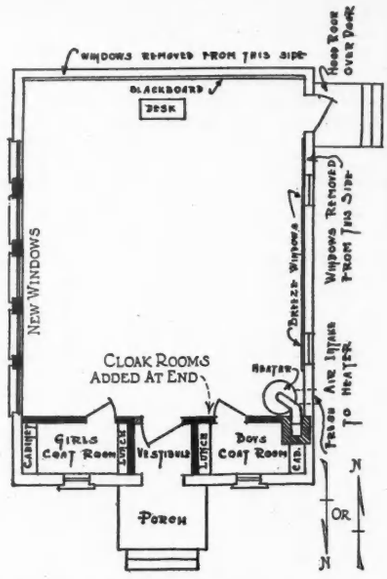
TOILETS
Soundproofed
Sanitary
Modern plumbing
Seat booths
Liquid soap
Dryers

KINDERGARTEN
Special glass
Warm floors
Sand box
Wardrobes
Storeroom
Teacher's cases
Cork boards
Radio outlets

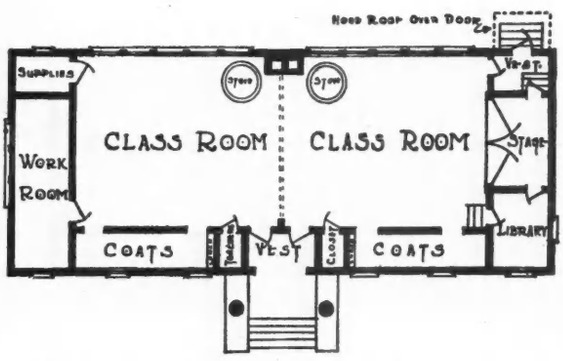


Suggested modernizing of a building that was too wide. Coat rooms have been built in at right and approved windows put in at left.

Plan of a typical out-of-date building. A dozen serious defects can be described.



How a too long building was modernized by building cloak rooms across end and banking windows at left in "unilateral" style.

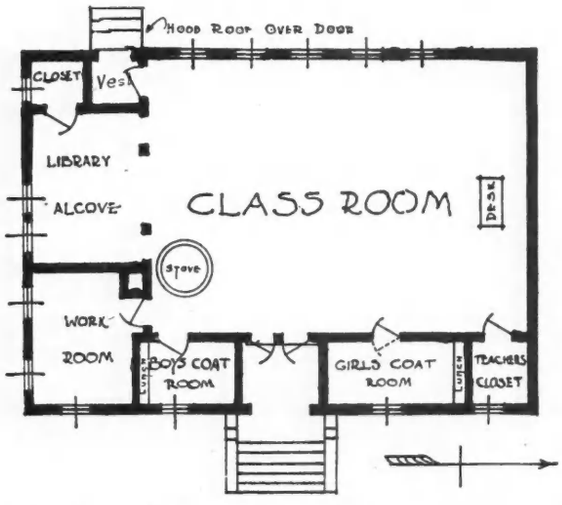


Plan of 2-teacher school designed to face east and west only. Folding partition makes possible one large room for community use.

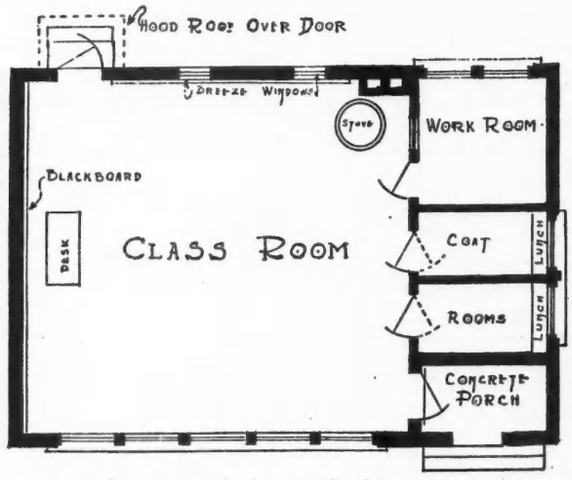
ridors and classrooms. Two entrances should be provided so that children can march through in continuous line, and if possible there should be two cloakrooms, one for boys, one for girls. Racks should be placed for umbrellas, and shelving for lunch boxes; each pupil should have at least 8 inches of wall space, with hooks or hangers adjusted to size of children, as follows: 5 year olds, 39 to 46″; 6 yrs., 39 to 49″; 7 yrs., 40 to 52″; 8 yrs., 42 to 54″; 9 yrs., 45 to 56″; 10 yrs., 47 to 59″; 11 yrs., 48 to 63″; 12 yrs., 50 to 66″; 13 yrs., 53 to 69″; 14 yrs., 55 to 71″; 15 yrs., 57 to 72″; 16 yrs., 58 to 72″. Lockers are desirable where finances will permit.

All space in the modern school should be fully utilized. For example, heating system may be completely enclosed and a playroom established in the basement. If possible one playroom should be provided for boys and another for girls. A community room may be equipped with stage in basement for use of students and towns-

(Continued on page 48)



This 1-teacher building has many features to recommend it, and yet it is simple and inexpensive. The library alcove is desirable.



Floor plan of approved design, building to face east or west. Note that two entrances are recommended, and that lighting is unilateral.

Insulation Ideas Overturned By Aluminum Foil

Tests Show Heat Losses Halved and Quartered by Use of Novel Material

By E. B. SVENSON
Engineering Development Division
Aluminum Company of America

BECAUSE metal is a good conductor of heat, it seems paradoxical that it could, in any form, be considered as an insulating material. However, the facts are that an insulating material can be fabricated from aluminum foil and framing materials which has a thermal conductivity closely approaching that of still air. By filling an air space with layers of crumpled, thin aluminum foil, it has been found that such a space has an insulating value equal to the same thickness of cork, and at the same time the quantity of foil needed to properly fill that space weighs only one-fiftieth as much as the cork.

A single layer of foil fastened to building paper and facing the air space between the outer and inner walls provides practically the same insulating value as a half-inch thickness of the familiar board forms of insulation. A single layer of foil hung in the middle of the air space is more effective in reducing the transmission of heat than a half inch of the common blanket forms of insulation.

A few illustrations showing typical applications of aluminum foil as an insulating material will serve to demonstrate some of the interesting possibilities for it in the building field.

An excellent starting point is a wall structure taken from the "1932 Guide of the American Society of Heating and Ventilating Engineers"; a wall consisting of wood siding, wood sheathing, an air space, and plaster on wood lath. This wall will transmit .262 B.T.U. of heat per square foot per hour for each Fahrenheit degree difference in temperature between the outside air and the inside air.

If the wood sheathing on the side facing the air space between the studs is covered with a sheet of aluminum foil, the transmittance coefficient is reduced to .193 B.T.U. This means is suggested as the foil can be applied like wall paper or may be obtained as an integral part of the building paper. Building paper is normally used to prevent the infiltration of air through cracks and crevices in the walls. Aluminum foil, being a continuous, impermeable metal sheet, is an excellent aid to that purpose.

The foil will serve the same purpose if employed on the other side of the air space. In this position, of course, the foil must be mounted on the plaster base before installation. Thus, the manufacturers of paper-backed wire lath and plaster board are afforded the opportunity of providing insulation with a plaster base, and the manufacturers of fibre board can increase the insulating value of their insulating board by mounting foil on their product at the factory. In this manner, insulation and plaster base can be applied in a single operation.

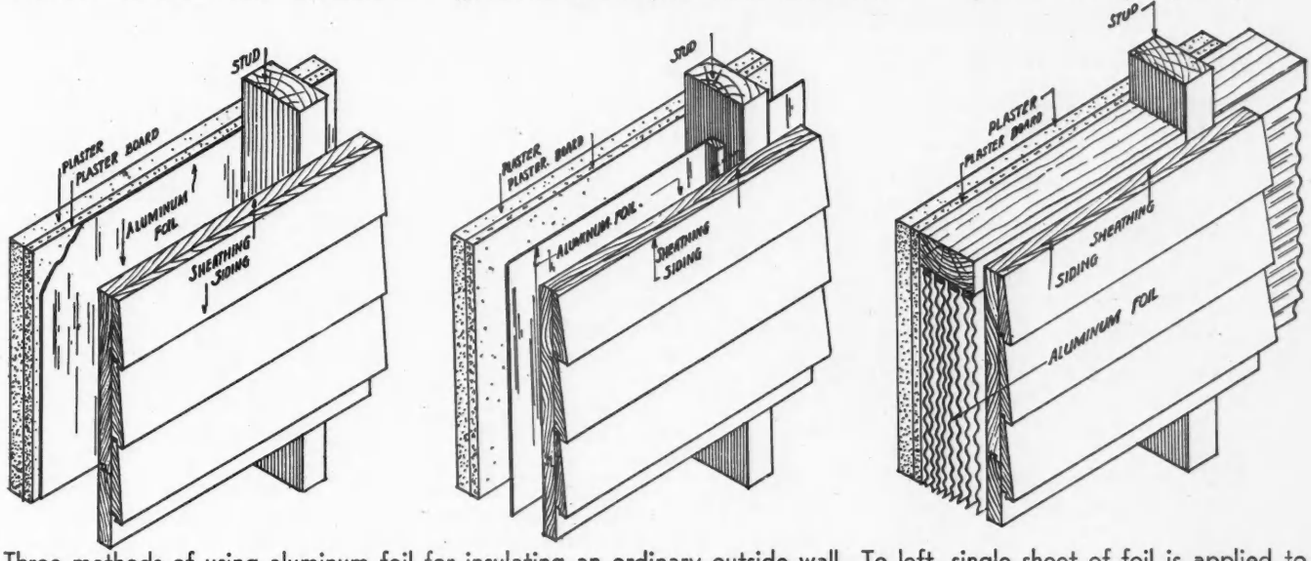
If a single layer of foil were hung by purlin strips in the center of the air space, the transmission coefficient of the wall would be reduced to .134 B.T.U. Or, if a half inch of blanket form of insulation normally used in this position were covered with aluminum foil on both sides, the transmission coefficient of the wall would be reduced to .108 B.T.U. In addition to its insulating value, the foil would serve to moisture-proof the fibre or hair blanket; it will also serve to resist combustion.

If additional sheets of foil are employed so as to divide the air space further, the heat transmission coefficient is reduced still more. Two layers of foil, dividing the space into three air cells, reduce the coefficient to .103 B.T.U., and three layers of foil, dividing the space into four air cells, reduce it to .077 B.T.U. It is apparent that each additional layer can perform less service than the previous layers, and that eventually a limit of practical effectiveness will be reached,

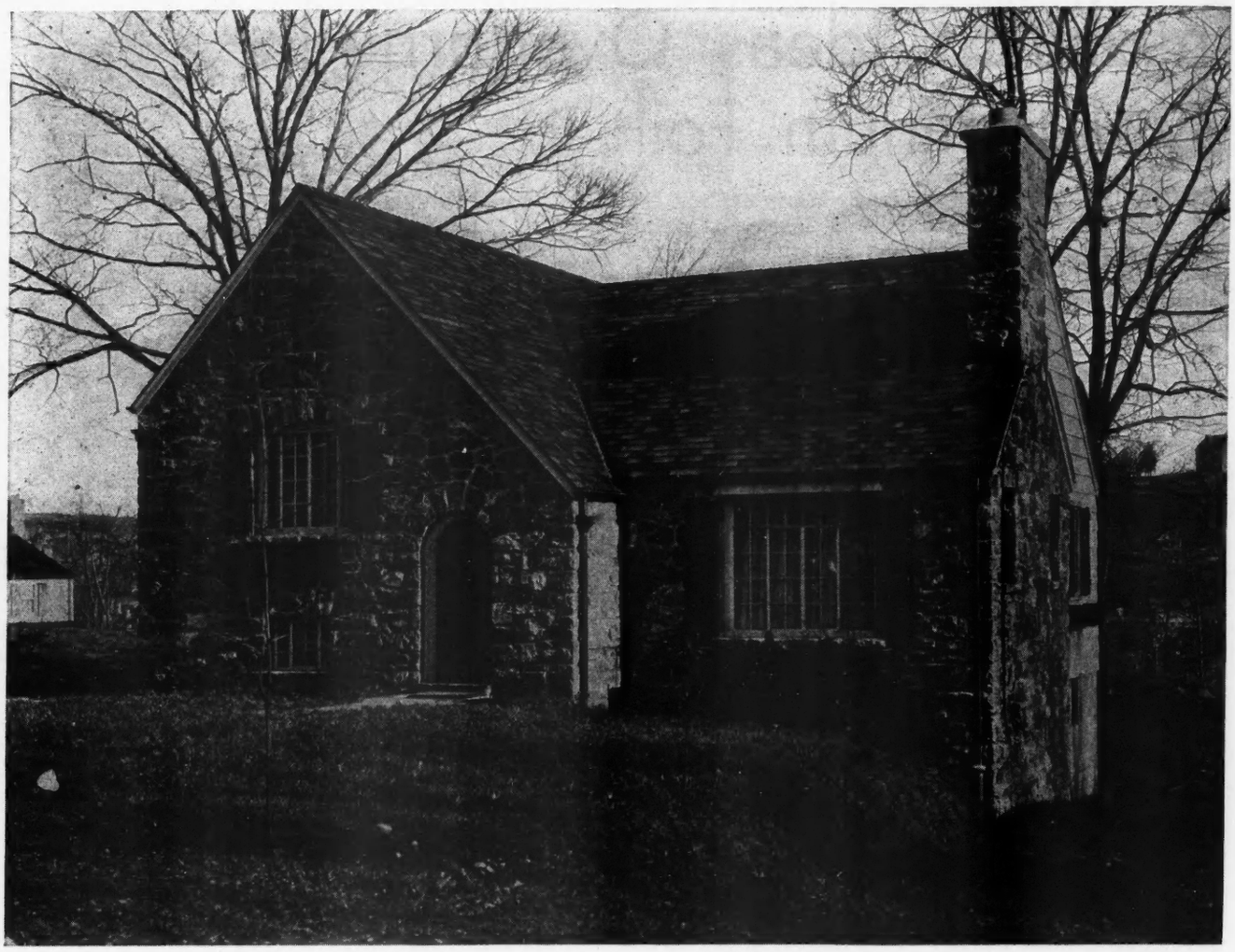
(Continued on page 52)

HEAT TRANSMISSION PROPERTIES OF A TYPICAL WALL INSULATED WITH ALUMINUM FOIL

	Transmission
Typical wall without insulation	.262 B.T.U.
Typical wall with foil on one surface	.193 B.T.U.
Typical wall with single foil curtain	.134 B.T.U.
Typical wall with two foil curtains	.103 B.T.U.
Typical wall with three foil curtains	.077 B.T.U.
Typical wall with crumpled foil	.067 B.T.U.



Three methods of using aluminum foil for insulating an ordinary outside wall. To left, single sheet of foil is applied to back of plaster board and cuts heat loss 26 per cent.



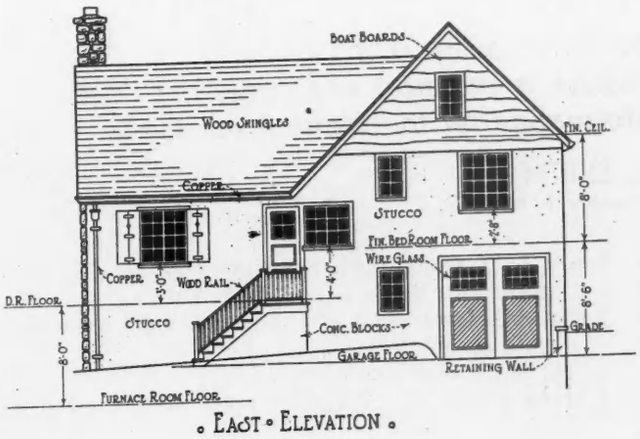
THE HOUSE OF THE MONTH

A Five-Room Cottage of Stone at Yonkers, New York

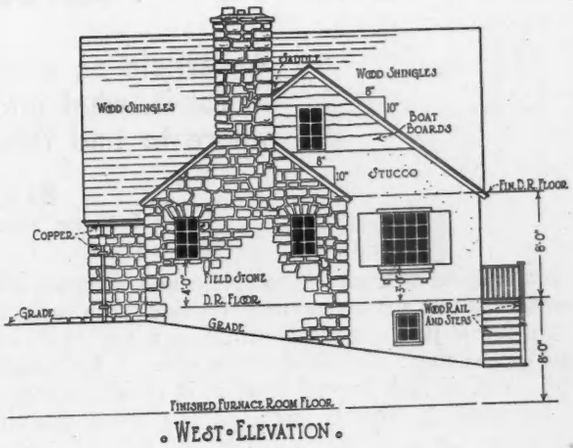
WILLIAM CAIN, Architect
THE HOMELAND CO., Builder

Cost Key 1.377—132—1031—43—16—15

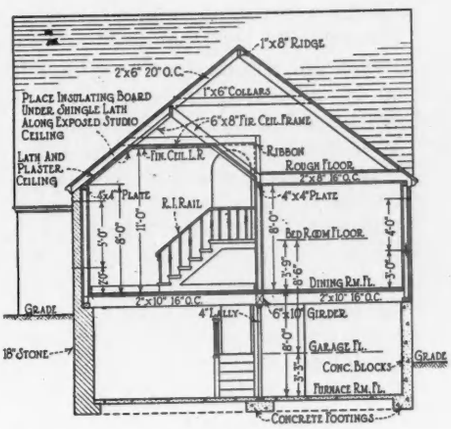
AN unusually interesting arrangement on two levels was worked out for this five-room cottage of stone and stucco construction built recently by the Homeland Co. at Yonkers, N. Y. The entrance at grade line fixes the floor level of living room, dining room and kitchen. To the left, up six steps, are the two bedrooms and bath. This arrangement gives additional privacy to these rooms and permits an interesting open stair and balcony effect at the end of the living room, which is finished with a high studio ceiling with two heavy beam trusses exposed to view. The elevation of the sleeping room is well liked, affording added security to the occupants when windows are left open at night. The garage space is arranged in the basement underneath the bedroom wing. By taking advantage of the sloping contour of the site, very little excavation was required to bring the garage doors in line with the rear grade. The basement proper containing the heating plant is five steps lower down. The construction of this house features an eighteen-inch stone wall along the front and chimney end, with the rest of the walls stucco over concrete block.



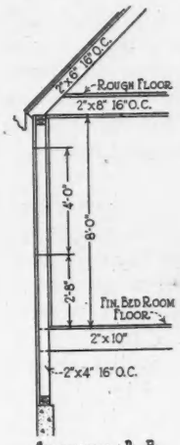
• EAST • ELEVATION •



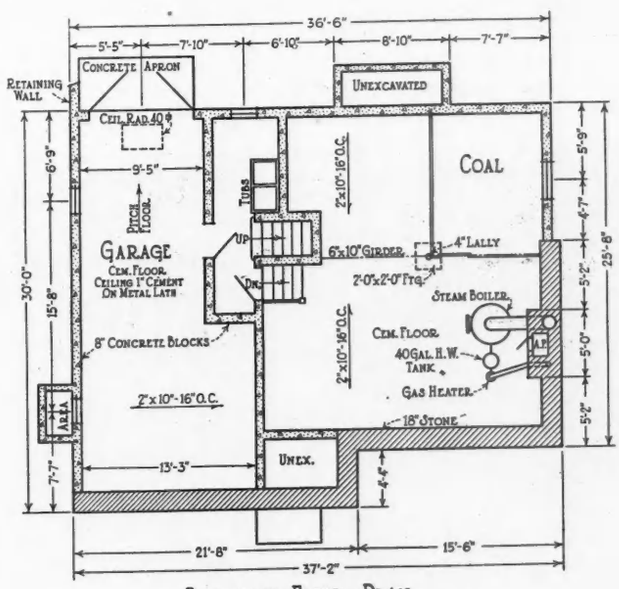
• WEST • ELEVATION •



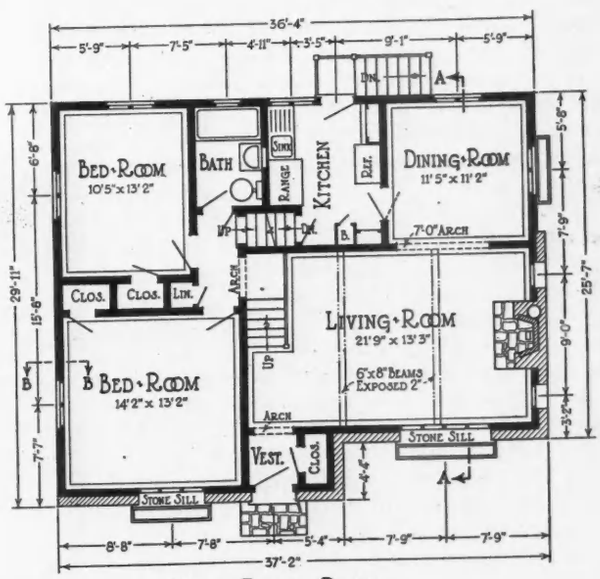
SECTION • A-A



SECTION • B-B



• BASEMENT • FLOOR • PLAN •



• FIRST • FLOOR • PLAN •

Working Drawings of Five-Room Stone Cottage at Yonkers, New York. Scale is slightly more than 1/16 inch to the foot. A Photostat enlargement easily brings this up to 1/4 inch scale.

How to Make a Millwork List

An article on what to list as millwork, how to list it, what information is required and where to find this information on the plan

By C. L. SMITH
Estimator, Enochs Lumber & Mfg. Co.

IT is not hard to make a complete and accurate millwork list but very few men outside of a millwork plant know just what is required on a list. Millwork is one of the more complicated branches of the building trade. Yet, if one knows how, it is easier to make a mill list than to take off some of the other quantities on a plan. It is simply a matter of taking a set of plans and specifications and making an accurate and systematic survey of the required material.

For practical purposes it is always best to get quotations from a mill on millwork rather than trying to price it yourself. Where there are several sets of plans available, the mill will generally make up its own list—but where plans are limited and it is necessary to get prices in a hurry, it is oftentimes quicker to make a list of the required material and ask the mill for quotations on the list.

A mill list sent off for prices should be made as foolproof as possible. When a list is indefinite or not complete, the mill will generally figure high enough to take care of any changes or extras that may occur; whereas if the list is definite to start with, they will make the price as close as possible to start with.

To be foolproof every list should give the following information: size, thickness, description, wood, detail (with a small sketch if it is special). Price is always a consideration in buying anything. Stock millwork is the cheapest and oftentimes it is better than specially manufactured millwork. For this reason it is best to use stock materials where possible—that is, where a small change in size or detail will permit the using of stock materials. Where special work is required, it is necessary to have a detail or any necessary information before it can be constructed. Different classes of work will require different information, as will be noted in the following paragraphs.

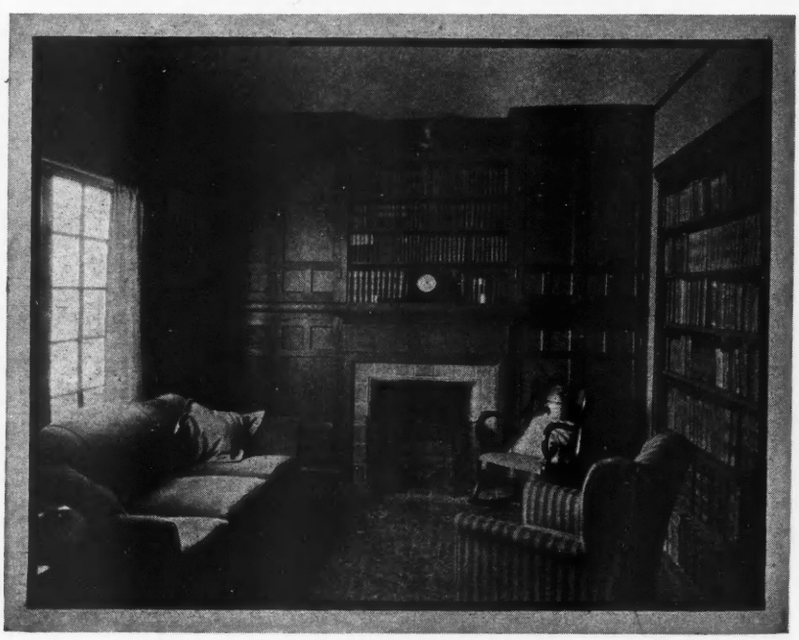
In making a list it is customary to start at the front, either at one corner or the entrance door, and list around a plan until all openings are counted and listed. All openings of the same size can be grouped, but if there is any variation in size or design it is necessary to list each item separately. The first thing that will be listed is the outside door, window, and sash frames. A simple sketch of the required construction can be given or the necessary information written out. The required information is: type of wall—frame, brick veneer, stucco, or solid brick, etc.; thickness of wall; opening size; thickness of door or sash as the case may be; whether frame is assembled or knockdown (machined ready for assembly but not assembled); type of pulleys required; size of transom bar, if any; wood required. This may sound complicated but it is not as bad as it sounds; typical listings would be:

1 o/s dr. & trans. frame, dr. 3-0 x 7-0 x 1¾, bar 4″, trans. 2-0, Brick veneer, KD, YP.
1 trip. wd. frame 28 x 30-2 lt. 1¾ CR 7″ mull., frame wall, set up YP.
3 sets stock cast iron pulleys.
1 trans. frame 2-0 x 5-2 x 1¾ open out, brick ven. wall, Cyp.

The casing and stops that go on the inside of a window or door frame are not part of the frame but are listed as interior standing trim by the mill. Trim includes the casing, stops, stool and apron, bar casing, cap moulds, back band, etc. If the trim is listed right under the frame that it goes with, it is not necessary to do more than list one set of trim for above opening and give the type and the wood required. There are four general types of trim. Plain trim is the simplest type and it consists of either a square or round edge casing at the sides and top and a stool where required with a plain apron. Backband trim is the same as plain trim except that an extra band mould called a backband is included. Cabinet head-trim is the same as plain trim except that the head of the opening is trimmed different with a small neck mould and a cap mould at the top. Moulded trim is a one-piece trim—the same as plain trim except that it is moulded instead of round or square edged. If trim is not listed directly in connection with the opening which it goes on, it is then necessary to give the size of the opening on which it goes. A typical listing would be: 1 set of BB trim for above opg. YP. or 1 set of plain trim for mull wd. 28 x 30 2 lt. CR. mull. 7″, YP.

Doors, windows and sash are some of the simpler items of millwork to list. In listing a door, it is neces-

(Continued on page 42)



PRACTICAL JOB POINTERS

A readers' exchange of tested ideas and methods, taken from their own building experience. Two dollars will be paid for each contribution published.

Brace Gives Greater Strength

I AM contributing a sketch of a brace I have used for a number of years and which has merits, where the maximum strength is required with the least material.

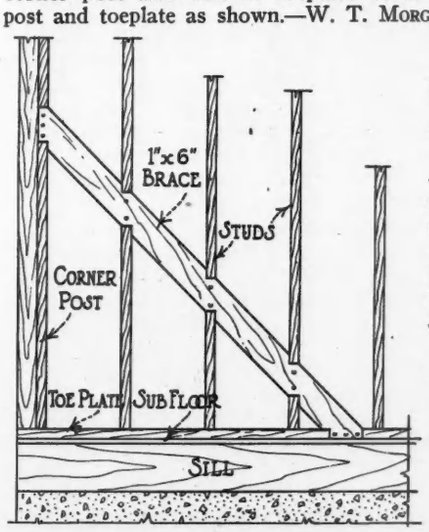
To frame: tack in position on studding, and with sharp pencil mark above and below 1x6 where it crosses each studding; also where it crosses toeplate at bottom and corner post at top.

This gives the marks necessary to gain in on studs, toeplate and corner post.

Now reach over 1x6 with sharp pencil (being sure it is resting against all studs), and mark it accurately on each side of studding, also at top of toeplate and inside of corner post. This gives marks necessary for notching 1x6 brace to fit as shown in sketch.

Now remove, and with try-square square over each stud at lowest point of top mark and highest point of bottom mark; also the two shortest points of marks crossing 2x4 on corner post and toeplate. Saw square across (as marked with try-square) and remove to receive 1x6.

Notch 1x6 square across with stud marks, from shortest side at top and shortest side at bottom; this makes notches fit gains in studding, toeplate and corner post. Be sure to leave 1x6 brace 1⅝ inches longer than last mark shown at corner post and also at toeplate so it will lock in corner post and toeplate as shown.—W. T. MORGAN, Neodesha, Kans.



At left—notched braces give strength.

At right—bench stop from old razor.

Far right—adjusts plumb line with button.

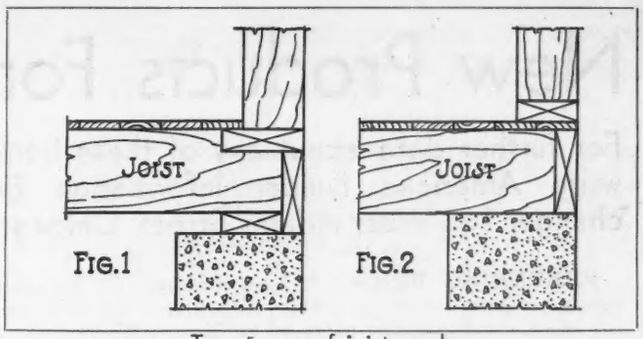
Above—laths and clamps used for measuring.

Two Types of Construction

IN a recent issue of THE AMERICAN BUILDER AND BUILDING AGE, Arthur Morgan of Perryton, Texas, submitted a sketch and an article explaining the construction he uses in building granaries. In this, we assume he is showing the type granary used on an average good-sized farm in his locality.

In this day of keen competition, when we are striving so earnestly to design and build good buildings for the lowest possible cost, I wish to humbly submit my viewpoint on the subject.

Surely, everyone will agree that Mr. Morgan's method as shown in Figure 1, is good construction. In my estimation the Minnesota style, at some considerable saving, will do just as well. In Figure No. 1 some carpenter labor is used in notching the joists to receive the 2x8 plate. Note in Figure 2, a 2x6 plate is used instead of a 2x8 and that the 2x6 laid on top of the foundation is dispensed with. In Figure 1 the floor board forms a pocket between the studs



Two types of joist work

which causes some inconvenience in cleaning out the grain. Since both types, of course, depend on clever nailing for good results we can pass up this part.

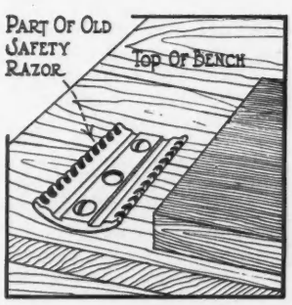
Now then, assuming that the joists are not to be overloaded as far as bending is concerned, is there anything wrong with the construction shown in Figure 2?—J. R. PETERSON, 3339 Bryant Ave. No., Minneapolis, Minnesota.

Makes Good Movable Bench Stop

A GOOD sturdy small bench stop or block is often needed on jobs away from the bench where there is nothing but the usual small piece of wood to fall back on. Sometimes this is not so convenient, as often too heavy. Take the guard portion of an old safety razor and with two small screws fasten it anywhere on the improvised bench as shown. It cannot be beat for just what is handy, needed and practical. Old razor blade parts are as common as old auto parts, and the piece is easily carried in the job tool box.—FRANK W. BENTLEY, JR., Missouri Valley, Iowa.

An Accurate Measuring Kink

A MEASUREMENT that often ends bad because it is not accurately made involves the exact distance between two objects which cannot be measured directly with a rule, cannot be measured with a stick that is too long, or with one that is too short.



An excellent kink for obtaining the exact distance is shown in the accompanying sketch. Use two sticks such as laths or anything else sufficiently stiff. The total length of the two must be somewhat greater than the distance between the objects being measured so that they will overlap as shown. Ends should be square. Put them together in contact as indicated and slide outward until the two ends make contact with the desired points. Then clamp or fasten them together as shown, and you have the *exact* distance—as accurate as can be obtained even by use of a micrometer and *more accurate* than most methods.—W. F. SCHAPHORST, Newark, N. J.

Coat Button on Plumb Bob Line

TO shorten or lengthen the line holding a plumb bob can be quickly and easily accomplished with the use of an ordinary overcoat button. The line is threaded through the button holes with a continuous loop formed at the second and third hole as shown. This loop allows the plumb line to be lengthened or shortened as desired. The use of a button for a line adjustor eliminates tying knots in the cord and makes adjustment easy.—RAY J. MARRAN, Kansas City.

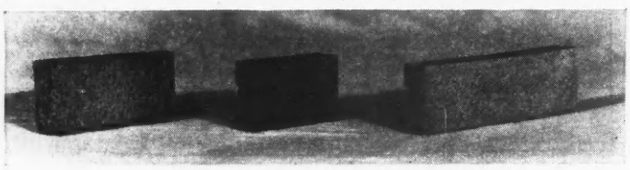
New Products For Modernizing Uses

For further data about any of these items write American Builder Information Exchange, 105 West Adams Street, Chicago.

VENEERING BRICK—A large Chicago tile manufacturing company is now on heavy production of a new veneering brick, developed and patented by Mr. V. W. Noonan, of the Noonan Lumber Company, LaSalle, Ill. To try out this new product thoroughly before offering it to the public, several installations were made at Peru, Ill., both on new work and in modernizing. The photographs below show the remarkable effect achieved in modernizing.

AFTER—How the old house looked after workmen had covered it with the inexpensive new brick veneering.

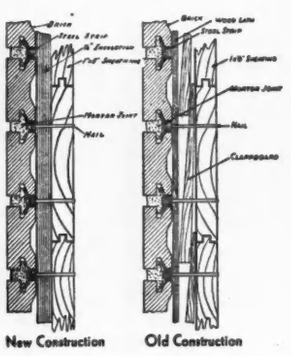
The outstanding feature is economy, particularly in the remodeling or modernizing of old buildings. To re-cover an old building with these brick, it is not necessary to disturb the foundations, cut through porches, or make any changes in doors or windows. Brick may be started at any



New veneering bricks are small and light.

point without providing for a foundation. The saving in this alone is quite an item.

Weight is about 20 per cent of regular face brick and, therefore, the cost of freight is exceedingly low. Figures so far available from the producer indicate that the saving over ordinary brick veneering should run anywhere from 30 per cent to 35 per cent. There are several items which enter into this saving, the low cost of the brick itself, freight, labor due to ease in handling, mortar, and mortar coloring.



Detail showing how new brick is applied.

Brick are made from shale and fire clay, the same as is used in the manufacture of high grade standard tile. Manufacture so far has been confined to the usual colors and textures of standard face brick, but it is the intention to add to these additional colors and textures, including weathered effects, dull, matt, and high glazes in various colors for interior work.

BEFORE MODERNIZING—An old picture showing the old fashioned house before it was covered with new brick veneering.

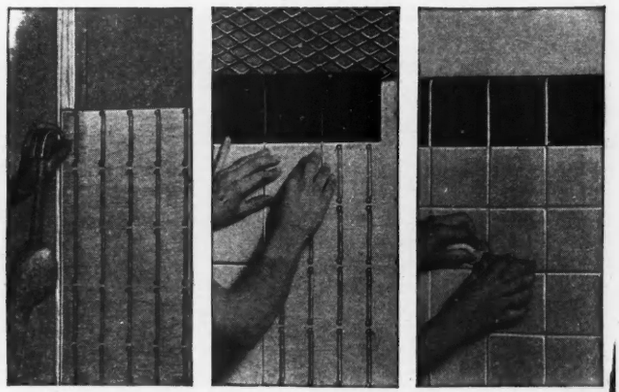
PROTECTIVE PAINT—A new protective coating for industrial structures and machinery has been discovered that is made from a pigment mined as an ore in the Wichita Mountains of Oklahoma. It is said that a former cowboy who spent many years on the open range of that section noticed that the Indians pulverized this ore to make war paint and trail marks. He observed many places where they had applied it on rocks and noted that the eroding elements of fifty years had failed to loosen the film or spoil its color. This led him to have technical tests made which led to perfecting of this new paint.

NEW ENAMEL STEEL TILE—For modernizing purposes this new tile product, which provides a complete, inexpensive permanent porcelain-like tile wall, is especially useful. It can be applied rapidly anywhere at low cost.

A foundation board, or clip board, is provided which is of specially constructed plyboard treated to be waterproof and warpproof. Galvanized clips are set by press operation at the factory, and are perfectly aligned.

The tile are of fused-on vitreous enamel on 24-gauge steel. Each tile's edges are converged, these edges forming the fastening which snaps over the clips. Tile are offered in 27 colors, with complete cap base and other trim accessory tile.

Foundation boards are set so that the clips are perpendicular to the floor two clips to a tile. After tile are snapped over the clips a sliding motion sideways is possible. Thus quarter, half and three-quarter sizes of field and trim tile may be used. As a result there is very little cutting required in an installation as practically any measurement can be met with these fractionals.



Three steps in applying new tile are: left, nail clip board in place; middle, tile is snapped on; right, joints are cemented.

New Casement Window Has Many Fine Features

A NEW casement window has recently been placed on the market which is furnished as a complete unit, factory fitted, ready to install with a minimum of carpenter labor. Details include the following:

A specially designed leakproof frame made of clear pine, completely primed with aluminum paint. It is suitable for all types of walls. The narrow mullion post, transom bar and exterior moulding give a modern appearance with large glass area.

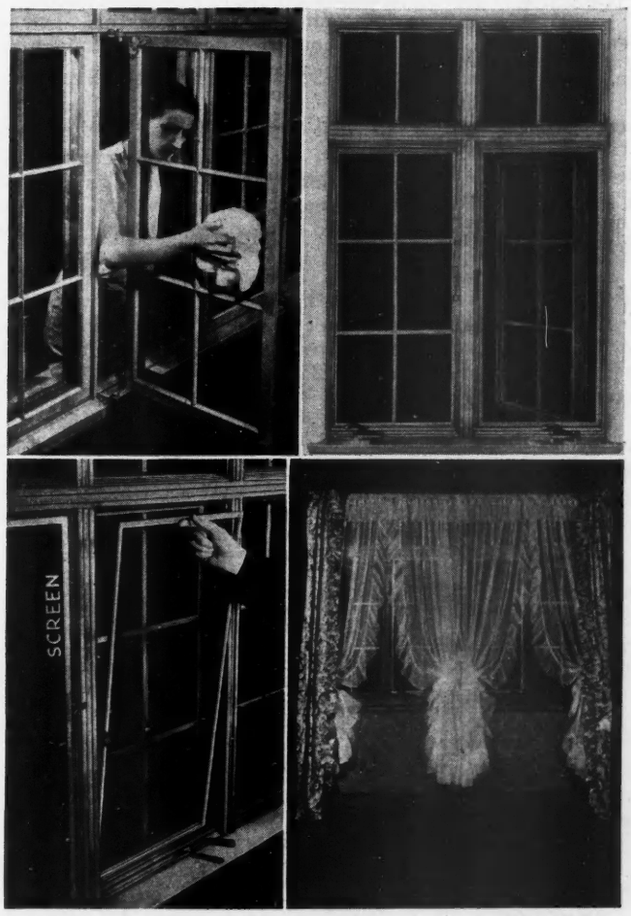
Sash is factory fitted and glazed. Entirely new design provides two point contact—cannot stick or bind. Stiles and rails are made of clear pine completely primed with aluminum paint, and muntin bars are solid aluminum.

Weatherstrips of spring phosphor bronze of improved design are provided for all openings and insure a tight seal between sash and frame at all times.

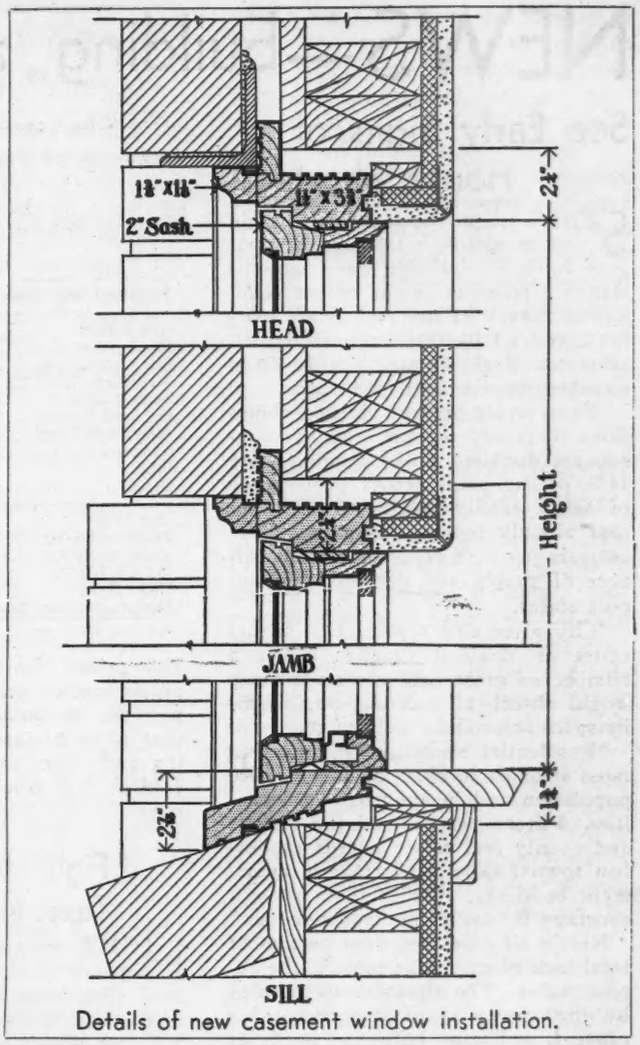
Hardware of new and improved design is furnished for all swinging sash. It comes assembled and is easy to install. Extension hinges permit easy cleaning of outside glass from the inside. Under-screen sash operator opens and closes the sash easily and quickly, works independently of the screen and automatically locks sash.

A modern inside screen fitted and ready to slip in place is included. It is a "lifetime" screen made with aluminum frame and 16 mesh bronze wire cloth.

Removable double glazing which fits on the inside of the sash and becomes a part of it is an unusual feature. It has an aluminum frame and spring bronze weatherstrip. It comes fitted and is easily and quickly slipped in place or removed from the inside.



Four views of the new casement window. Features include removable screen, removable double glazing, extension hinges that permit easy cleaning, slim aluminum muntin bars.



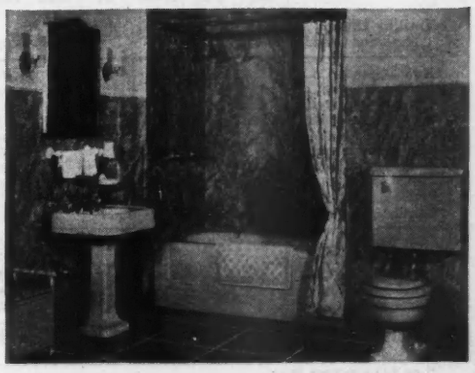
Details of new casement window installation.

LINOLEUM FOR WALLS—A wall covering material that provides the desirable qualities of linoleum combined with special designs and colorings particularly suited to wall use has recently been announced.

The new line is made up of two types of material—one a linoleum mix keyed to a fabric back and the other a special embossed lacquered material which simulates glazed tile. The first type includes three allover marble patterns, four marble tile effects in solid colors, two wood grain colorings, and three handmade embossed tile patterns.

The lacquer type of wall covering is produced to meet the public demand for a reasonably priced wall material like the hard glazed surface of ceramic tile. The lacquers used in this product are of a type that provide sufficient flexibility to meet the requirements of installation, that is non-fading, and resistant to washing.

Accessories such as wood cap moulding, in colors to match both interliners and the field colorings in the patterns, as well as in plain black and plain white, are provided.



Attractive bathroom with floors and walls of linoleum.

NEWS—building activities of the month

See Early Signs of House Shortage

START of a shortage of housing and an almost total lack of mortgage funds for building were two outstanding features of the recent semi-annual survey of the real estate market compiled by the National Association of Real Estate Boards from member reports from 358 cities.

"Even under present pinched conditions of family income, and the consequent doubling up of families, only 14% of the cities report over-supply of single family dwellings. Ten per cent already report a shortage. Seventy-six per cent report a normal balance of supply and demand," the report states.

"City after city reports that actual count of 'doubled' families shows a number so great that any undoubling would absorb all existing single-family space or produce a shortage.

"Residential shortage is appearing most strongly in cities of under 25,000 population and in suburban communities. Fifteen per cent of the district and county real estate boards (suburban towns) show a shortage in apartment buildings; 19% of them show a shortage in single family residences."

Nearly all cities reported an almost total lack of mortgage money, the report states. The situation as revealed by the survey is of importance because it indicates both the need for credit relief such as is promised by the Home Loan Banks and the scope of effect the bill may have in encouraging building activity, beginning with refinancing of existing home mortgages and extending to new work.

TABLE III. PERCENTAGE OF CITIES REPORTING OVERBUILDING, NORMAL SUPPLY OR SHORTAGE IN SINGLE-FAMILY DWELLINGS APARTMENTS AND BUSINESS PROPERTY

Section and Size of City	Single Family Dwellings			Apartments			Business Property		
	Over	Normal	Short	Over	Normal	Short	Over	Normal	Short
Totals for United States and Canada	14	76	10	28	66	6	44	56	....*
New England	8	73	19	24	72	4	40	60	....
Middle Atlantic	12	79	9	23	67	10	44	55	1
East North Central	17	79	4	31	63	6	50	50	....
West North Central	4	92	4	24	72	4	36	64	....
South Atlantic	21	69	10	24	71	5	52	48	....
East South Central	36	64	....	50	50	....	58	42	....
West South Central	22	72	6	47	48	5	60	40	....
Mountain	17	78	5	28	67	5	22	78	....
Pacific	8	71	21	26	71	3	41	59	....
Canada	....	60	40	40	60	....	....	100	....
Over 500,000	20	80	....	58	42	....	58	42	....
200,000 to 500,000	14	76	10	64	36	....	77	23	....
100,000 to 200,000	20	80	....	49	51	....	51	49	....
25,000 to 100,000	17	74	9	24	73	3	43	56	1
Under 25,000	11	74	15	18	74	8	36	64	....
District and County Boards	7	74	19	19	66	15	38	62	....

*LESS THAN ONE PER CENT

Low Cost Development

In Medford, Massachusetts, a new 30-acre development has been started by Carter Bros., of Arlington, Mass. Low prices of materials, coupled with advantageous price of land make it possible to build a six-room house that is up-to-date in plumbing, heating and other equipment and can be sold at low prices, Carter Bros. believe.

Fight to Reduce Taxes in New York

HOME owners, farmers, and real estate investors in New York look with favor on the recent report of the Tax Revision Commission, says J. Irving Walsh, president of the State Association of Real Estate Boards which is leading a fight of property owners against burdensome taxation.

"Property owners feel that at last there is some relief in sight if the recommendations of the commission can be enacted into law," said Mr. Walsh. "Real estate is now paying taxes in the state at the rate of over two million dollars a day, or more than $789,000,000 each year. This is almost seventy per cent of all the money raised by state and local taxation." The real estate association has taken the stand that real estate should not bear more than fifty per cent of the total tax burden.

New and additional revenues proposed by the New York Tax Revision Commission will result in an average reduction of local real estate taxes of approximately sixteen per cent and in some countries it will run as high as thirty per cent, it is said.

Project Involves 50 Millions

FRED F. FRENCH, creator of Tudor City, New York's famous apartment hotel community, has announced a new $50,000,000 apartment project in the lower east side slum district. Buildings will be twelve stories in height, with 48 rooms to the floor and will contain 567 rooms with ground coverage of 80 per cent. About 25 per cent of rooms will consist of 4-room suites, the rest of 3-room. Apartments will be built to rent for about $20 per room, per month.

TABLE IV. PERCENTAGE OF CITIES REPORTING UPWARD, STATIONARY OR DOWNWARD MOVEMENTS OF RESIDENTIAL RENTS AS COMPARED WITH MAY, 1931.

Section and Size of City	Single Family Dwellings			Two-Family Dwellings			Apartments		
	Up	Stat.	Down	Up	Stat.	Down	Up	Stat.	Down
Total for United States and Canada	*	10	90	*	9	91	*	21	79
New England	....	19	81	....	17	83	....	46	54
Middle Atlantic	....	16	84	....	16	84	....	16	84
East North Central	....	7	93	....	8	92	....	10	90
West North Central	....	15	85	....	8	92	....	27	73
South Atlantic	....	11	89	....	6	94	....	28	72
East South Central	....	31	69	....	17	83	....	23	77
West South Central	....	15	85	....	5	95	....	26	74
Mountain	....	16	84	....	6	94	....	22	78
Pacific	1	8	91	2	12	86	1	18	81
Canada	....	20	80	....	....	100	....	....	100
Over 500,000	....	8	92	....	8	92	....	8	92
200,000 to 500,000	....	17	83	....	13	87	....	30	70
100,000 to 200,000	....	12	88	....	13	87	....	10	90
25,000 to 100,000	....	8	92	....	4	96	....	24	76
Under 25,000	1	10	89	1	12	86	1	21	78
District and County Boards	....	14	86	....	12	88	....	19	81

*LESS THAN ONE PER CENT

TABLE VIII. PERCENTAGE OF CITIES REPORTING AN EXCESS, EQUILIBRIUM OR SHORTAGE OF MONEY FOR REAL ESTATE MORTGAGE LOANS

Section and Size of City	Capital Seeking Investment	Equilibrium	Loans Seeking Capital
Total for United States and Canada	4	8	88
New England	15	23	62
Middle Atlantic	5	8	87
East North Central	6	3	91
West North Central	....	4	96
South Atlantic	2	16	82
East South Central	....	23	77
West South Central	5	15	80
Mountain	....	5	95
Pacific	3	3	94
Canada	....	....	100
Over 500,000	....	8	92
200,000 to 500,000	....	9	91
100,000 to 200,000	10	7	83
25,000 to 100,000	6	11	83
Under 25,000	1	5	94
District and County Boards	2	2	96

Termite Treatment Fraud Warning Issued

HOME owners should beware of overdrawn and alarming reports of injury to building by termites or white ants, says the U. S. Department of Agriculture. In particular they should be wary when exaggerated statements of this kind form a part of the "sales talk" for a "termite treatment." Many of these treatments are expensive and are not correspondingly effective. Reports to the Bureau of Entomology indicate that sharpers, overemphasizing the real injury that termites are likely to do, are filching from home owners hundreds of thousands of dollars and rendering little or no effective service in return.

State officials and others reporting to the Bureau of Entomology reveal that the termite treatment sharpers are particularly active in the South and in some of the Far Western States.

Some salesmen have been exaggerating the danger from termites in an effort to sell treatments, many of which have little or no merit, but which they picture as absolutely necessary to prevent the collapse within a short time of buildings invaded or under alleged danger of being invaded by the termites.

The Bureau of Entomology says that there has been no change in the situation in the South and West as to termite damage; that conditions are substantially the same now as they have been for the last 50 or 100 years. The records indicate that the collapse of a building on account of termite damage is so rare as to be for practical purposes a negligible risk.

Escalators Adopted for Office Buildings

THE escalators that have moved crowds from floor to floor for years in department stores, railway and subway stations, have found a new field in office building skyscrapers. Contracts recently let to the Otis Elevator Company call for the installation of escalators as supplements to the regular elevators in two outstanding New York office buildings that will be completed next year, the new annex building of the Metropolitan Life Insurance Company and the 67-story Cities Service Building.

Escalators were decided upon after carefully checked studies had shown they would do the job required and relieve the regular elevators of interfloor traffic at these critical times. In these two buildings the escalators will serve the lower floors. In the Metropolitan Life Building three floors—below street level—will be covered and in the Cities Service Building six.

Organize to Handle Air Conditioning

For the purpose of coordinating the company's activities in the air conditioning field, J. S. Tritle, vice president and general manager of the Westinghouse Electric and Manufacturing Company has announced the formation of a complete organization for the engineering, development and sales of all air conditioning apparatus.

Included in the company's study of all types of conditioning problems are reversed refrigeration, cooling, humidifying, dehumidifying, and air circulation and cleaning.

Research in thermo-dynamics, ventilation, reverse refrigeration cycles, heating, practical design, and factors that make for human comfort have evolved a line of apparatus to meet the most exacting needs.

Unit installations for the home, office, barber shop, restaurant, hospital room, X-ray room, hotel room and small apartments are now available.

J. W. Speer will be manager of Commercial air conditioning products; R. C. Cosgrove will head domestic sales; W. C. Goodwin is in charge of engineering.

Back Painting Red Cedar

BACK PAINTING and mill priming are almost always associated with a desire to protect lumber against harmful absorption of moisture. An Alabama red cedar lumber company has introduced a new purpose, however, in back coating red cedar ceiling used for closet linings. In order to keep as much as possible of the aroma of the cedar in the closet interior by preventing its dissipation through the back surface of the wood, this company has standardized upon an aluminum paint of a quick drying nature and a hard finish.

After considerable experimentation, a special varnish has been developed which, when mixed with aluminum powder, satisfactorily seals the lumber against the evaporation of essential oils, and at the same time dries to a hard finish in a short time. The latter requirement is desirable because the lumber is assembled in tightly bound bundles for shipment.

Houses Built in Germany of Aluminum and Asbestos

REPORTS from Germany state cottages are being fabricated of standardized metal sections, with aluminum-asbestos insulation between the inner and outer walls. The roof and outer walls are of copper, the ceiling and inner walls of sheet steel, and the aluminum-asbestos insulation between is said to be effective in shutting out winter cold and summer heat.

The wall is 10 centimeters in thickness (3.9 inches) and is certified to absorb fluctuations in temperature to the same extent as would a brick wall 222 centimeters thick (87.4 in. or 7.28 feet.)

Screw bolts are used in joining together the sections of the metal house, and it is said that the entire building can be erected on a prepared foundation within 24 hours. The advertised cost in Germany is 3,800 marks or about $900. Copper men estimate the cost of a similar building here to be about $1,000.

NOTES FROM HERE AND THERE

The annual family budget of the ordinary wage earner, in Chicago, now amounts to $1,650, and the average family consists of 4.2 persons.

Wood destroying termites are gradually moving north and trouble from this cause has been reported from as far north as Toledo, Ohio, and Grand Rapids, Mich.

More than 1,000,000 people constitute the United States government payroll, and one person in every 40 is on some public payroll, federal, state, county or city.

Motorists are not inclined to stop at filling stations located on corners having traffic lights because those facing the red light can not turn out easily or safely and those approaching the green light will rush through.

A welded steel tube, 24 inches in diameted, and 1,000 miles long, has been laid from the Texas Panhandle to the Chicago area, for the transmission of natural gas.

The largest individual structural steel order, involving 125,000 tons, was placed last winter for the building of Radio City, in New York.

Eighty miles of Penn metal, cold rolled, rail sections, made of galvanized sheet steel, to reinforce all plastered corners, were used in the Empire State Building.

The construction of the Hoover (Boulder) Dam is expected to take from eight to ten years and furnish employment to an average of 2,000 men.

LETTERS from Our Readers

You are invited to write your views on any subject of interest to the building industry. 300 words should be enough!

A Telegram

Denver, Colo.

To the Editor:

Send details Allied campaign. Wish to start here at once.

Denver Junior Chamber of Commerce,
By WILLIAM K. BARR.

"A Campaign of My Own"

Benton Harbor, Mich.

To the Editor:

In your August issue under "A Call to Action," you extend an invitation to help get things started. I would like very much to take advantage of the invitation, and have you forward all the ammunition for this campaign that you are offering. I am engaged in a campaign of my own and certainly would appreciate all the help offered.

Thank you in anticipation for the information requested. We are looking forward to the Home Repairs Campaign with keen interest.

R. F. HUXMAN,
Contractor and Engineer.

Newspaper Interested

Lewistown, Mont.

To the Editor:

We are just in receipt of your news release dated July 29th, entitled "Building Industry to Engage in Big Home Repair Drive."

If you have any cuts or mats that can be used by advertisers in connection with this special drive, we would appreciate having them.

The Democrat-News Co., Inc.
By EARL F. MCGINNIS, Advertising Manager.

Troubled with Wood Worms

Great Barrington, Mass.

To the Editor:

We are subscribers to the AMERICAN BUILDER AND BUILDING AGE, and note you publish therein a page on Practical Job Pointers, and it occurred to us you might be able to give us some information.

Could you tell us how to exterminate worms in an antique beam ceiling, where we have used old hewn beams. We have just finished this job and the worms are rather annoying on account of the borings dropping onto the floor. The beams are old chestnut.

We would appreciate any information which you could forward us.

Graves & Hemmes, Inc., Building Contractors,
By G. GRAVES.

Determination in Face of Obstacles

Globe, Ariz.

To the Editor:

Your article "A Call to Action" in August issue leads me to believe that you or affiliated associates may be able to offer sugestions for our town, a copper mining town with no other resources, mines all closed down until copper prices improve, major bank, carrying about 75 per cent of the wage earner and business men's deposits, in the hands of a receiver. Still there is lots of money of depositors in the other bank, but we are unable single handed to encourage improvements or building to any extent. Our town is on the shortest, coolest and most scenic transcontinental route through the state, an all year around route.

We think it possible to develop repair and improvement with the right kind of a program to develop concerted action.

Any suggestions will have our honest effort to put them into action.

E. F. KNOWLES, Manager.
Whalley Lumber Co.

Wants to Start Campaign

La Crosse, Wis.

To the Editor:

We are very much interested in starting a campaign for remodeling and repairing of homes in this city. If you have any information that you can pass on to us as to the methods others have used to get the ball rolling, we would appreciate it if you could favor us with same.

We have a general idea how to go about it but some specific instances cited may help us along.

SEGELKE & KOHLHAUS Co.
By Ben A. Ott.

Likes Home Design Book

Cottage Grove, Oregon.

To the Editor:

I received the book "Modern Homes, Their Design and Construction," and wish to thank you for it.

It is a wonderful book and will be a great help to me in my work here. Furthermore, it follows up the description of the five orders of architecture as published in Building Age and National Builder of April, 1926.

HENRY M. LAKE, Draftsman.

They're the Best Obtainable

Poughkeepsie, N. Y.

To the Editor:

Your book is wonderfully gotten up—quickly read and easily digested. Your small home cuts are great. Best wishes for continued success.

JOSEPH S. KEATING.

Some Are Still in Business

Washington, D. C.

To the Editor:

In the April issue in the section devoted to new products, under the heading "Have you heard of", reference is made to a flush valve closet which will operate on a ½-inch or a ¾-inch supply line, is silent, and uses but 2½ gallons per flush.

I am intending to build a residence in the country where I will have to install a pumping plant and also a sewage disposal system. I am much interested in learning something further about the closet in question as I shall probably require three for the projected building. Can you put me in touch with the manufacturer?

I made an inquiry several weeks ago regarding some other materials advertised in your publication and have to thank you for the responses received. One of the materials will probably go into my house with a sale of $300 or $400 of material.

I sincerely hope that your present depleted advertising pages may speedily fatten up, as the absence of the advertisements of certain materials from your pages makes me wonder, now that I expect to use some of these materials, whether the makers are still existent.

A. N. DOBSON.

IT HANGS TOGETHER

Here you see one of the reasons why Brixment mortar cuts bricklaying costs—*the mortar hangs together.* . . It doesn't break off and fall to the ground before the joint is struck. As a result, no mortar is wasted and the bricklayer stoops less often to the mortar board. It doesn't slop down over the face of the wall. So less time is required to clean down the finished job. . . This is due to the fact that the plasticity of Brixment mortar does not depend upon the use of excessive water. . . *The mortar hangs together.*

LOUISVILLE CEMENT COMPANY, *Incorporated,* LOUISVILLE, KY.

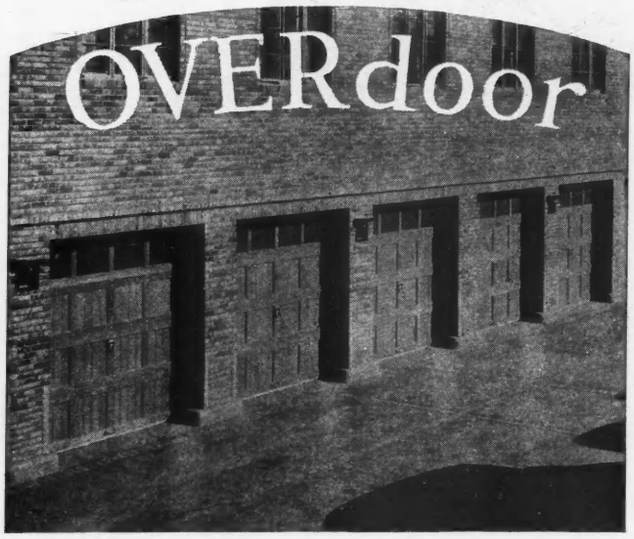
District Sales Offices: 1610 Builders Bldg., *Chicago;* 600 Murphy Bldg., *Detroit;* 101 Park Ave., *New York*

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

BRIXMENT

A Cement for Masonry and Stucco

BARCOL OVERdoor



A Two-Profit Job

The Barcol OVERdoor has distinctive advantages which make it easy to sell. You can install it without difficulty and the work pays you a reasonable profit in cash.

Then comes your second profit — a satisfied customer. Every time the owner of a Barcol OVERdoor opens or closes his garage he is reminded—pleasantly—of the contractor or builder who handled the job. He tells his friends (people *do* talk, you know) and your reputation grows. Result—new orders, more profits and more pleased customers.

Learn about the features and advantages of the Barcol OVERdoor. Get complete information. Phone, wire, write or *Use Coupon below*

Most customers would like to have this type of door — and will gladly pay for its extra quality and service.

BARBER-COLMAN COMPANY
ROCKFORD, ILLINOIS, U. S. A.
Established 1900

BARBER-COLMAN COMPANY, Rockford, Ill. AB-9-32
Please send further information about the Barcol OVERdoor.

Name _____

Address _____

City _____ *State* _____

How to Make a Millwork List

(Continued from page 34)

sary to give the width, height, thickness, wood, number and arrangement of panels or lights of glass; viz., 1 door 3-0 x 7-0 x 1⅜ two-panel, Fir or 1 door 2-10 x 6-10 x 1¾ one panel nine-lights D.S., WP. In listing a window, we have practically the same thing. There are two ways to list a window. That is, we may give the total opening size or give the glass size. For instance: 1 CR. wd. 2-6 x 5-6 x 1⅜", 4 vert. lt. top, or it may be listed: 1 wd. 28 x 30—2 lt. 1⅜" CR. top 4 vert. lts. WP. Either listing is correct, yet the listing by the glass size is the method used most. Sash are listed the same as windows by giving the size, thickness, and arrangement of lights. It is also necessary to tell in some cases whether a sash swings in or out and whether they are rabbeted together where pairs occur.

Listing weights and cord is easy. It is only necessary to list a set of weights and cord for each window. A listing should be made for each different sized opening as the different poundage of the weights will affect the price.

Screens are generally required on residences and on some office buildings. In listing the screen it is necessary to give the opening size, type of screen and the kind of wire and wood required. A typical listing would be somewhat as follows: 1 screen door 3-0 x 7-0 x 1⅛" two panel, oxidized copper grille in lower panel, copper wire, CYP. A window screen would be as follows or similar: 1 full sc. for wd. 28 x 30—2 lt. CR., ¾" stock, galv., YP. With most mills it is customary to furnish 16-mesh wire unless some other wire is wanted, in which case it is also necessary to state the mesh of the wire wanted.

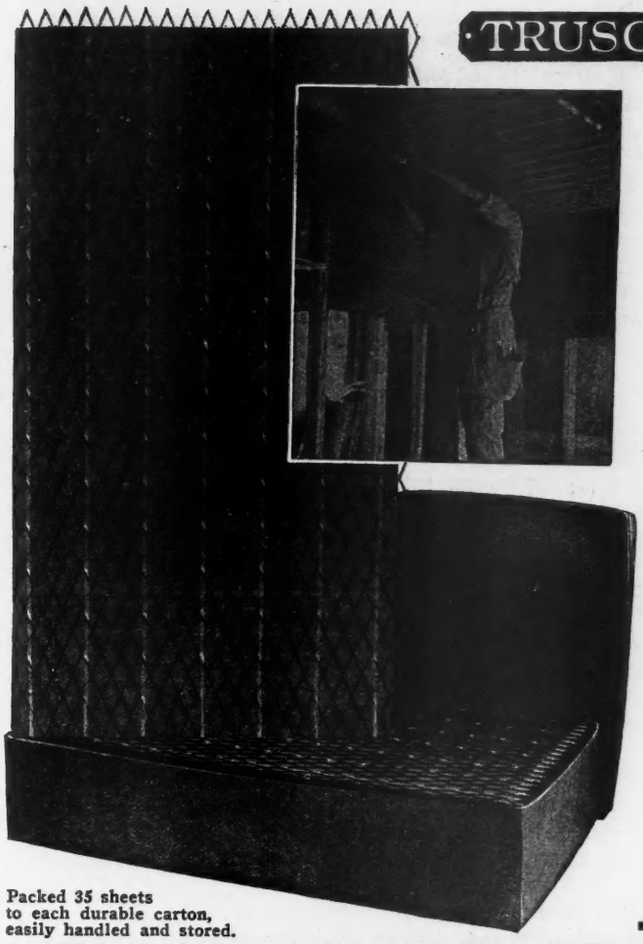
Cabinet work is always a stumbling block in making the list. Mills figure cabinet work on a square foot basis and add for any extras over standard or ordinary construction. Extras are such things as drawers, bins, thick tops, heavy cornice moulds, divided lights in doors, brackets, etc. The simplest way to list a cabinet is to list it as a cabinet per sketch and give a small detail of the cabinet. This detail does not have to be an elaborate drawing, but it ought to give the width, height, and depth of sections. For all practical purposes though, a description of a cabinet can be given that will cover all the required data if it is not desirable to make a sketch. A typical listing would be: 1 china cabinet 4-0 x 7-0, top section 12" deep, lower section 18" deep, top section glass doors, one pair eight lights each door, lower section two drawers, and panel doors, 3-ply fir back, shelves adj. set up in sections, YP.

Other types of cabinet work are mantels, mantel shelves, medicine cabinets, ironing board cabinets, bookcases, etc. Mantels vary a great deal in price. It is preferable to use a stock design and designate by catalog number or make a sketch of the one wanted. Mantel shelves can also be designated by number or sketch and the size of the chimney breast, top and returns should be given.

In listing panelwork or balustrades or office railings, if the work is always complicated it is best either to send in the plans or make a sketch of the required work and let the mill make up its own list. However, the only required information is the length, height, thickness, and wood on each section of panel that is required. The base mouldings, cap rail, and cove mouldings are not part of the panelwork and should be listed extra as lineals. For safety's sake it is best to

(Continued to page 46)

TRUSCON The Most Complete Line



Packed 35 sheets
to each durable carton,
easily handled and stored.

INSULMESH

The Insulating, Reinforcing, Sound Deadening Plaster Base

A remarkable combination of quality and economy —providing positive insulation with all the advantages of metal lath. Insulmesh strongly resists heat, cold and sound, gives steel reinforced strength and assures a beautiful, permanent plaster job without streaks or cracks.

Sheets are rigid, easily handled, easily cut to size and quickly erected. The heavy gauge steel mesh extends beyond one side and one end of each 27" by 48" sheet so that the metal overlaps at all joints. The mesh becomes thoroughly embedded by the scratch coat which goes on rapidly due to the mechanical key formed. Architect, plasterer and owner all benefit for with all its advantages Insulmesh is economical in every detail.

Write for sample and complete data.

TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO
Warehouses and Offices in All Principal Cities
Dealers Everywhere

BIG MONEY MANUFACTURING These PRODUCTS

Here's a complete home industry that you can start now with every assurance of quick returns and rapid expansion. You have a waiting market right at home and you use low cost materials (obtained locally). Colorcrete Products are easily made—only small working space required.

Every Homeowner

wants to make his home surroundings more attractive. They need permanent Pottery, Vases, Flower Boxes, Bird Baths, Garden Seats, Flags, Porches, Fireplaces, etc. With Colorcrete you can supply these in 30 colors and shades. Beautiful pieces of art that sell on sight.

Exclusive, Sell for 6 Times Cost

Every dollar put into making these attractive designs sells for $6 to $10. We start you right. Molds cost $30 up. Manufacturing Franchise granted free. Write for free booklet today.

COLORCRETE INDUSTRIES, INC.
530 Ottawa Ave., Holland, Michigan

BUILDING CONSTRUCTION DETAILS

No matter how much you know about the building game you will find this collection of 160 plates well worth the price of $1.50. For lack of space we can't list the thousand or more ideas that are given on these 9 x 12 inch plates but every one of them is in large size so that you can apply them in saving time and material in your own work.

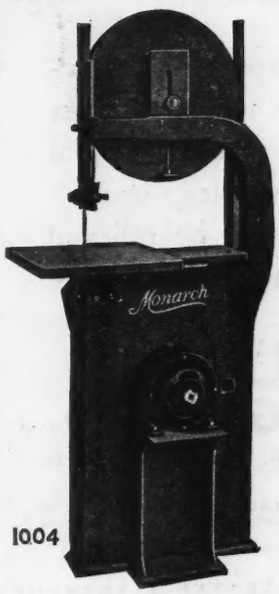
Everything from foundation to decoration is covered including balloon framing and mill framing up to steel skeleton construction. Stone work, brick details, hollow tile, concrete, etc., etc. Window and door details of wood and metal from cellar windows to cathedral windows. Interior trim, panel work, stairs, breakfast nooks, china closets and other built-in fixtures. Little details of ornament such as chimney tops, gable ends, etc., etc. Ornamental exterior work such as stucco, tile, terra cotta, ornamental brick inserts, etc., etc., in great profusion!

Money back if you don't find this worth many times its cost of $1.50 to you.

160 Pages, 9 x 12 Inches. Over 1,000 Figs. Bound in paper. Only $1.50.

AMERICAN BUILDER AND BUILDING AGE
30 Church Street, New York

This 20" BAND SAW is a MONEY MAKER!



You can absolutely depend upon this saw to lower costs. With its built-in, light socket operated motor and its ball bearing action, it handles the hardest jobs swiftly and efficiently. Regular equipment consists of saw blade, guide, brazing tongs and motor.

Send for descriptive booklet and 1932 prices on our complete line of woodworking and saw mill machinery.

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

The home protected by "Shur-Loc" Window Guards is secure, day or night, against burglars, sneak thieves and kidnappers. Installed as easily as a screen, quickly removable from one window to another, ornamental as well as protective.

"Shur-Loc" Guards, adaptable for double hung or casement windows, cost little more than good screens. Equip one or all your windows, sleep in airy, well ventilated rooms and be relieved forever from fear of home marauders.

SHUR-LOC WINDOW GUARD, CORP.

216 EAST 26th ST., NEW YORK. Tel. LExington 2-0463

REPRESENTATIVES WANTED FOR ALL LOCALITIES. The "Shur-Loc" Window Guard offers a wonderful opportunity for substantial money-making. It's new, appealing and a quick seller. Write for details.

SEND FOR FREE ILLUSTRATED LITERATURE

SHUR-LOC WINDOW GUARD CORP., *216 East 26th St., N. Y.*
Without obligation on my part, your representative may call with model of "Shur-Loc" Window Guard. Dept. A. B 2.

Name..... *Street*.....

City..... *State*.....

Telephone..... *Call (date)*.....*Time*.....

How to Make a Millwork List

(Continued from page 42)

make a sketch where panelwork is wanted.

There is also another type of millwork called lineal trim. This includes such things as base and shoes, picture moulds, cornice moulds, chair rails, etc. In listing base and shoe or other lineals, the first thing to do is to take a scale rule and measure all the rooms where the moulding goes. In the case of base there are two methods that may be used. The quickest method is to take the perimeter of the rooms in which it goes and add up the total. In this case no allowance is made for door openings and nothing is added for waste. The door openings will in most cases offset any waste in fitting. The other method is to take the perimeter the same as in the first method and deduct for all openings that occur and then add about ten per cent for the waste in cutting. It will take more picture mould than base on most jobs as there are no openings to come out of the required amount of picture mould. All other mouldings would be listed similar to the way base and shoe moulds are listed. In listing it is necessary to give the width and number of members involved. In cornice moulds or for beams it is necessary to give the design number or make a small sketch.

Stairwork is listed pretty much the same as cabinet work. All stairs are more or less similar. A mill figures a stair on the basis of the number of treads and risers involved and adds for any extras. These extras are: newels, rail, balusters, rail crooks, well hole casing, special starting treads, spirals, winders, etc. The basis specification on a standard stair is for a width of 3 feet 6 inches or less, boxed, open one side, or bracketed, or panel curb as the case may be, plain starting newel, plain landing newel, a stock rail, square balusters, a straight starting tread, and no rail crooks. A typical stair listing would be somewhat as follows: one flight stairs, twenty treads and risers, oak treads, balance red gum, rail 1¾ x 2¾, turned bals, bow face start tread, spiral at landing, goose neck at top with newel, eight feet well hole and casing and rail.

Stock millwork is generally a good bit cheaper than special work. But, where it is necessary to use special work, there are two factors that are involved—namely, labor and material. For this reason it is often possible to get a different material or wood other than stock at only a small difference over what a cheaper wood would cost. In other words, the labor remains the same and the price of a special wood will not be in proportion to the cost of the two woods under consideration, but will be cheaper in proportion.

There are two customary ways of making a millwork list. The first and most generally accepted is to list all the different types of work in groups; that is, to list all frames together, all doors, all windows, all trim, all cabinet work, all interior frames, etc., under their respective groups. The other way is to list the millwork by openings. This is the easiest method of listing and at the same time gives less chance for error—especially for one who is not thoroughly familiar with millwork listing. By the group method is meant to list all the items of a group or opening together; for instance, a window opening would be listed as follows:

1 wd. frame brick veneer wall set up cypress, to detail.
1 set back band trim.
1 set cast iron pulleys.
1 wd. 28 x 30—2 lt., 1⅜ CR 6 lt., top WP.

(Continued to page 48)

QUALITYBILT DISAPPEARING STAIRWAY

Saves Space, Saves Money

SELLS HOMES

Hundreds of new and old homes are prospects for this modern stairway. Guaranteed construction—Highest grade material and workmanship. Strong — Safe — Rigid. Easily installed, easily operated.

A REAL OPPORTUNITY FOR EXTRA PROFIT

Let us give you complete information. See your dealer or write us today. AB 832

Farley & Loetscher Mfg. Co.
Dubuque, Iowa

"DAHLQUIST"

NOW—
Clean fresh hot water
for DRINKING—COOKING
The TURBO-AQUATHERM
U. S. Patent No. 1765916

Gas Underfire

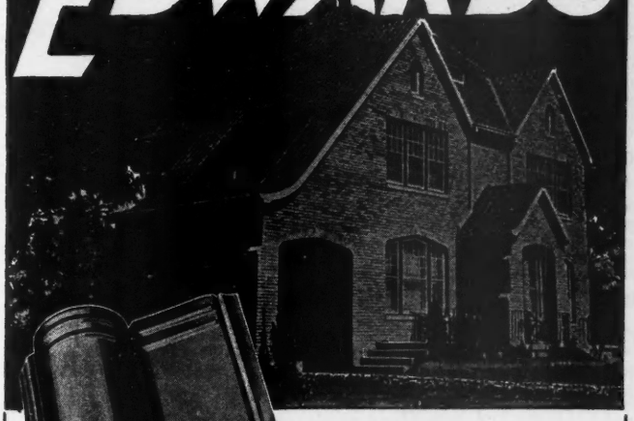
A Dahlquist automatic storage system equipped with this device offers the buyer something entirely new. A water heater that quickly supplies hot water which is always as fresh and clean as that in the cold water lines and which may be safely used for drinking and cooking as well as for every other household purpose.

Accumulation of sediment or stale water in the boiler is automatically prevented and the danger of burnouts as with other systems completely eliminated. The thermal efficiency is greatly increased and the expense for fuel as a result is lessened. Write for complete details.

Gas Side-Arm

DAHLQUIST MFG. COMPANY
10 West 3rd Street, So. Boston, Mass.

EDWARDS



Metal Spanish Tile and Shingles

FROM first glimpse to last look Edwards Metal Spanish Tile and Shingle Roofs make favorable selling impressions. Cost less to buy and to lay. Lower insurance rate and upkeep. No extra roof structure needed. Fire, lightning, wind and weather proof. Made in galvanized steel or terne plate (tin), copper bearing steel, zinc or copper.

Get our quotation on your next job.

THE EDWARDS MANUFACTURING CO.
542-562 Eggleston Ave. CINCINNATI, O.

World's leading manufacturer of sheet metal building materials.

To Keep Fine Floors . . . FINE

HERE are nails that will be appreciated by anybody that lays fine floors — nails that won't split or bend as they go through the hardest wood—nails that make floor laying *easier*. Use Rico Flooring Nails on all your jobs. They are *cut from solid plate* — free from laminations—have 72% greater gripping power—the 4-sided wedge shape holds and *keeps on* holding.

You'll find Rico Flooring Nails ideal for fine floors! Ask your dealer or write us for complete information today.

READING IRON COMPANY
Philadelphia

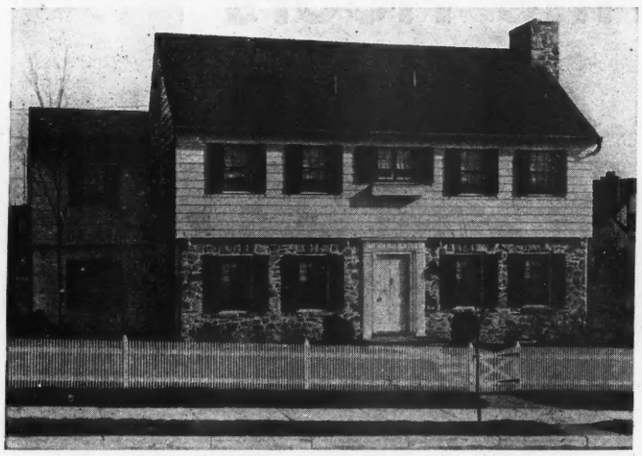
RICO

SPECIALLY HARDENED AND TEMPERED

FLOORING NAILS

CUT FROM SOLID PLATE

Anyone can SEE This House has Value



Residence in Reading, Pennsylvania; built by Wyomissing Development Company, Reading, Pa. Exterior walls and woodwork finished with Cabot's DOUBLE-WHITE and Cabot's Gloss Collopakes. Shingle roof stained and preserved with Cabot's Creosote Shingle and Wood Stains. All outside walls and second floor ceiling insulated against summer heat and winter cold with Cabot's Triple Ply Quilt.

THIS new house tells its own story of value. The perfection of its finish with Cabot's DOUBLE-WHITE and Cabot's Gloss Collopakes is apparent at first glance. There is a whiter brilliance to DOUBLE-WHITE and it stays white. Made by the patented Cabot Collopaking Process, fewer coats go farther. Because of this DOUBLE-WHITE saves money. Cabot's Gloss Collopakes in unfading greens and other colors retain their gloss outdoors and do not fade. It will pay you to finish with Cabot's Collopakes. Send in the coupon below for further information.

Cabot's
DOUBLE-WHITE
Collopakes

Made by the Makers of Cabot's Creosote Shingle and Wood Stains, Cabot's Gloss Collopakes and Cabot's Insulating Quilt

Samuel Cabot Inc.
Manufacturing Chemist.
141 Milk St., Boston, Mass.

Please send me Color Card and full description of Cabot's DOUBLE-WHITE and Collopakes.

Name.....

Address.....

AB-9'32

How to Make a Millwork List

(Continued from page 46)

1 set weights and cord.
1 full screen, 1⅛" stock, 16 mesh cop. CYP.

And the same procedure would be followed until all the openings on a plan are listed.

The actual making of the survey is easy. The floor plan is used and each opening is checked with a red or yellow pencil as it is listed. As the opening is checked, reference is made to the elevations for any information as to design and the schedule on the plan is referred to for size. The specifications are referred to for any information as to kinds of woods and grades of material. Where sketches are made it is not necessary that they be elaborate; and in a great many cases they can be traced from the plan on a small piece of tissue paper or tracing paper. In other cases they can be traced by using a piece of carbon paper.

After the list is thought to be finished it is a good idea to look over the plan thoroughly to see that no items have been missed or left unchecked. A simple trick in checking is to get a handful of small belt rivets and as an opening is checked on the list lay the rivet on the floor plan for the opening it represents. When the whole list has been checked it is a simple matter to look and see if all the openings on the plan are covered up with a rivet; or if they are not covered up, it indicates that they have been omitted.

Modernizing Details for Elementary Schools

(Continued from page 30)

people and public meetings. Nearly all schools nowadays have need of special rooms for use of manual training classes, cooking and sewing, science room, lunch room for students and teachers, library and gymnasium.

HEATING. The heating system, of course, depends greatly upon the size of the school, and in this line great developments have been made in recent years. For one and two teacher schools the furnace-gravity system, using either unit heaters and ventilators or hot air furnaces, is recommended, although many other systems or approved combinations are good. The jacketed stove, properly designed and installed, is also satisfactory, and has the advantage of being inexpensive. Hot air or radiator systems are being installed in schools where funds permit, and automatic heating control is recommended where it can be afforded. Oil heaters and automatic stokers are highly desirable where funds permit and they greatly reduce janitorial work.

A great many one-room schools as now standing are a disgrace to their communities. Very often the room is too large for the number of students accommodated. In that case it should be shortened or reduced in width by partitioning off cloakrooms. The procedure is shown in plans at top of page 30. One of the first things to be considered is the windows. They should be on one side only, to the left of the children when seated. Breeze windows close to the ceiling may be placed in the opposite wall.

Necessary cloakrooms may be added to the rear or one side of a building without great expense and the other remodeling as suggested in this article performed. Producing a modern healthful school house is not so much a matter of expensive new materials as of skillful and scientific planning and rearranging of what is already available.

While the foregoing construction details for small elementary schools are in no sense all-inclusive, they will serve to call attention to the glaring defects of so many of our public schools. Once that is done, it is up to the local builder to stimulate interest in his community which will eventually lead to work for him and improvement in the comfort and welfare of school children.

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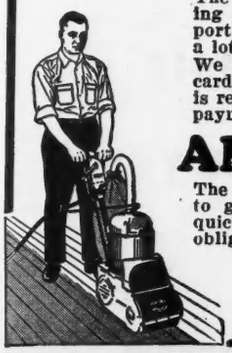

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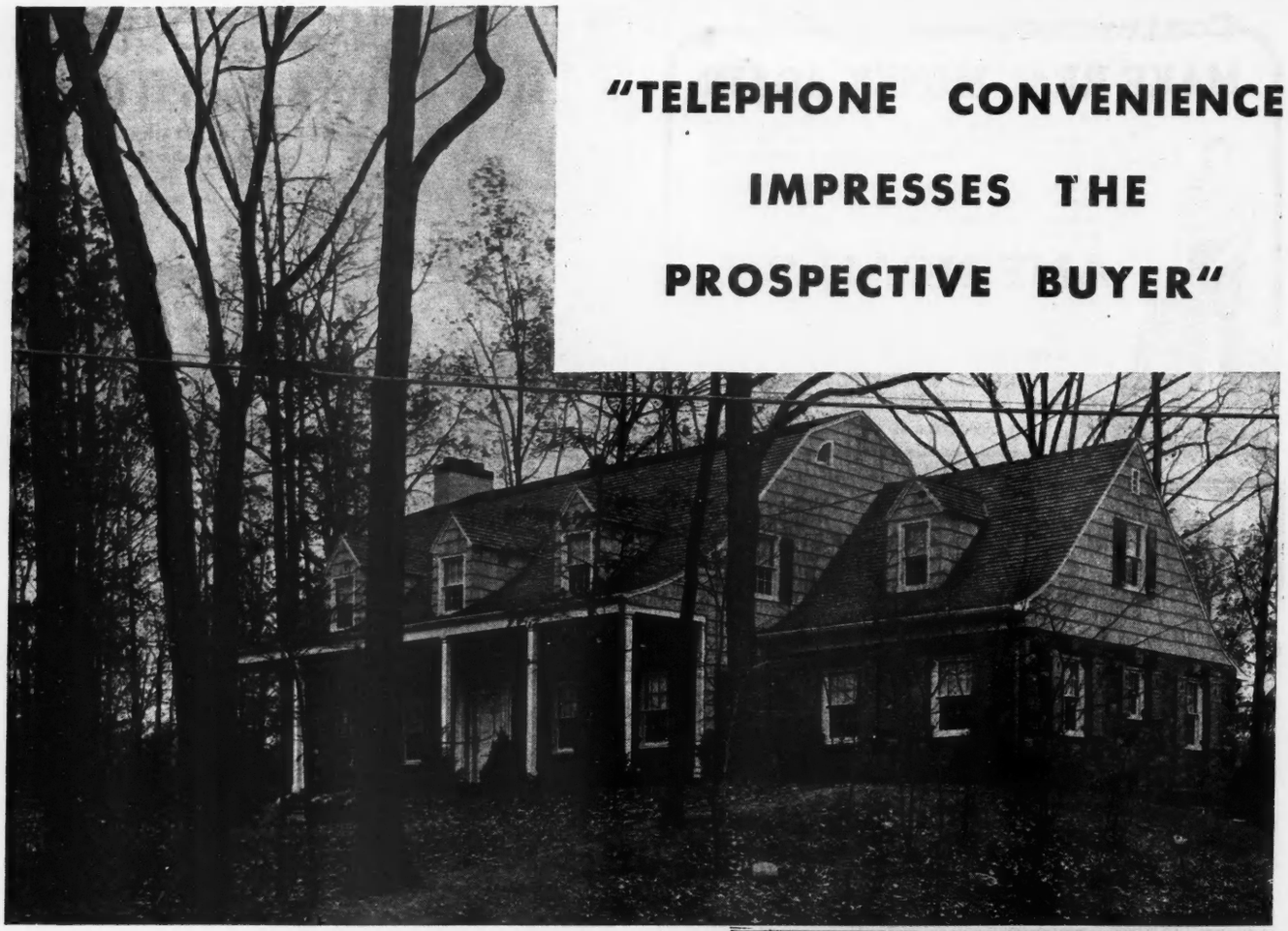
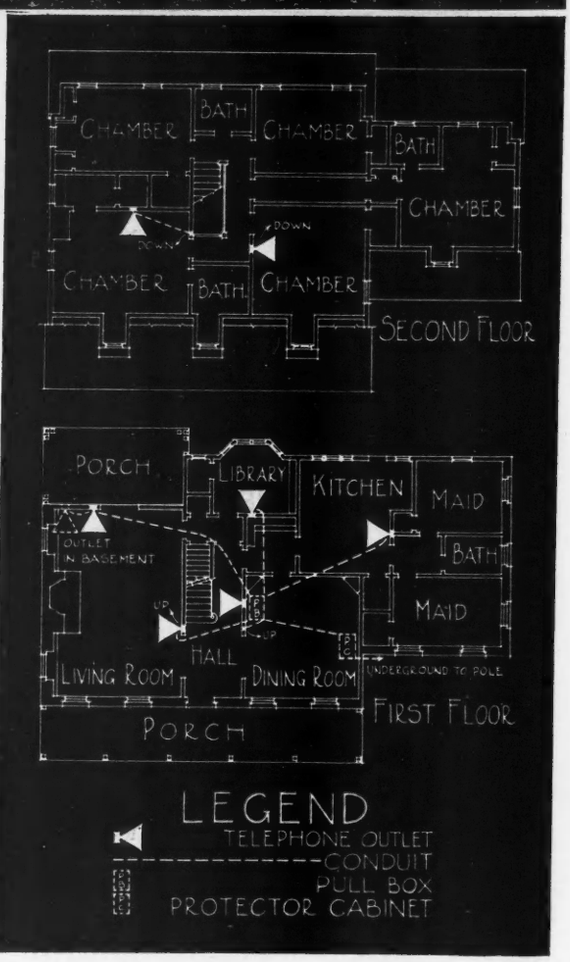


This distinctive residence at 900 Charlotte Road, Plainfield, New Jersey, is equipped for telephone convenience with built-in conduit connecting eight outlets. D. WENTWORTH WRIGHT, Architect, *Maplewood, N. J.* WICTON-ABBOTT CORPORATION, Builders, *Plainfield, N. J.*



● **HOUSES must sell promptly, to sell profitably. Certain features, more than others, make for ready sales. One of the most important, practical builders agree, is telephone convenience — the provision for *enough* telephones.**

From his own experience, the builder of the house pictured here observes: "Telephone convenience does not add greatly to the cost of building. It provides an additional strong selling point and impresses the prospective buyer with the effort made by the builder to take care of every detail for comfort and convenience."

Telephone convenience is simply a matter of including telephone conduit in walls and floors during construction. Then outlets can be provided at handy places throughout the house. There is greater freedom from service interruptions, wiring is concealed, steps and minutes are saved.

Consult the local telephone company when you're building or remodeling residences. They'll show you how to make them more livable — and more salable — with adequate telephone arrangements. No charge, of course. Just call the Business Office and ask for "Architects' and Builders' Service."

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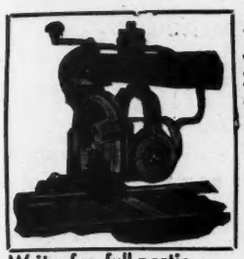

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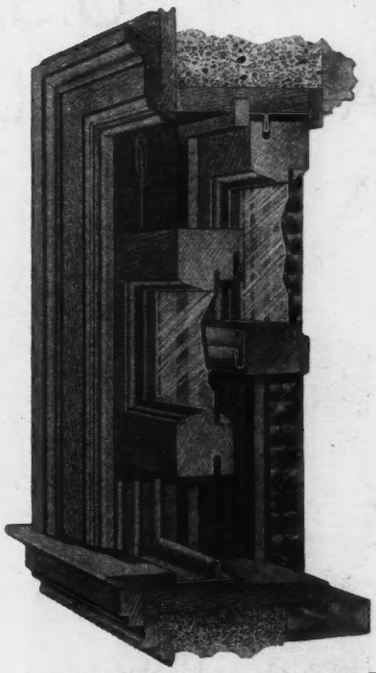

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A surprising percentage of heat which could be retained is sweeping out through windows and doors. Stop this heat leak and money waste by equipping your home with

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Index to Advertisers

SEPTEMBER, 1932

NOTICE TO ADVERTISERS

Forms for the October Number of the American Builder and Building Age will close promptly on September 15. New copy, changes, orders for omissions of advertisements must reach our business office, 105 W. Adams St., Chicago, not later than the above date. If new copy is not received by the 15th of the month preceding date of publication the publishers reserve the right to repeat last advertisement on all unexpired contracts. AMERICAN BUILDER AND BUILDING AGE.

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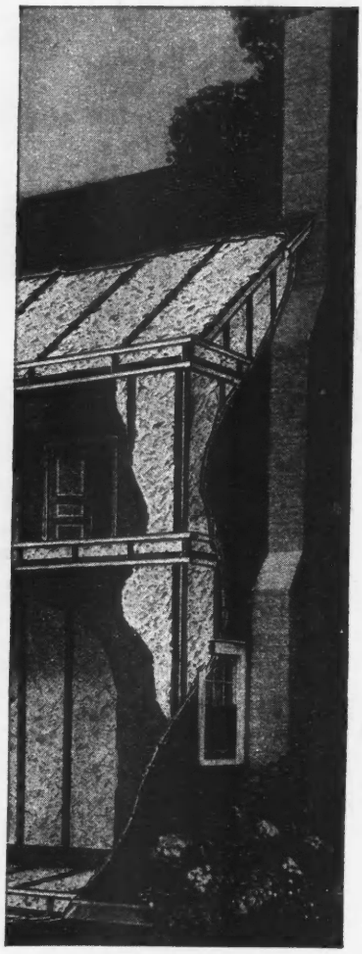

Draftless rooms, cool in summer and warm in winter, are assured in homes insulated with U. S. Mineral Wool. This extra living comfort can be added at an actual saving in winter fuel expense that will pay for the installation within a short period of time.

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Insulation Ideas Overturned by Aluminum Foil

(Continued from page 31)

which brings up the final case for consideration.

If the air space is filled with layers of thin, crumpled foil, in the form commonly known as alfol insulation, the transmission coefficient is reduced to .067 B. T. U.

It should be borne in mind that various wall constructions may be treated in any of the ways described. However, the values for each wall must be computed by suitable formulae, using the thermal conductivities for the various materials constituting the walls, and can not be determined by using the differences which may be obtained from the typical cases cited above.

Weight saving is one of the features of aluminum foil insulation in the transportation industry. Although this advantage will have appeal to builders generally, in small home construction there is an even greater advantage, in insulation without added mass.

Insulation is usually considered largely for winter service, in terms of fuel economy. Nevertheless, it performs an important function in helping to keep the house cool in the summer. There is a lag of several hours between maximum outside temperatures and maximum temperatures inside the building. This is due to the fact that the materials of construction as well as the insulation absorb large quantities of heat which is stored for several hours after the outside atmosphere has begun to cool. This heat gradually dissipates to the inside as well as the outside. The heat stored is, of course, proportional to the mass of material, and the greater the heat storage the longer the inside of the house remains warm. If insulation can be provided without an appreciable increase in weight, it is obvious that the house will cool or heat more quickly.

Aluminum foil is well suited for the purpose of insulation for a number of reasons. Bright metal surfaces owe their insulating value to their property of reflecting radiant heat. As this property is purely a function of the surface, no volume of metal is needed. It is possible to obtain more surface per pound with aluminum than with other metals of commercial importance. Also, aluminum possesses sufficient inherent strength so that even in the form of foil it is strong enough for this type of service. The fact that an aluminum surface remains bright, permanent and highly reflective under normal atmospheric conditions is equally important.

Antique Finish Method Outlined

IN response to an inquiry to the West Coast Lumber Bureau as to the method of finishing Douglas fir doors to produce an antique mahogany effect, Otto Hartwig, paint specialist recommends the following treatment:

Antique infers age and conveys the idea of mellowness. Therefore, antique mahogany develops a yellowish cast and leans in the direction of deep amber. To obtain this finish on Douglas fir, it is necessary to first stain the wood with a mixture of raw and burnt sienna and bismarck brown in linseed oil and varnish, with a little turpentine and the japan dryer. It should be remembered that bismarck brown is a very powerful color and it should be used very sparingly.

The second coat may be shellac and varnish or shellac and wax, as desired.

The stiles should be primed with a good lead and oil primer, to which has been added a little japan dryer with enough turpentine to reduce to free working consistency. When dry, some good enamel undercoater should be applied, either one or two coats. Then enamel of good quality should be used to finish the job.

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