



AMERICAN BUILDER and BUILDING AGE

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AMERICAN BUILDER
and
BUILDING AGE

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

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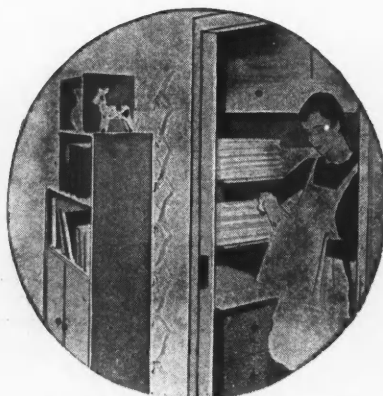
To acquaint yourself with the qualities of Douglas Fir Plywood — its sizes, thicknesses, finishing properties, etc. — mail the coupon below for free sample, descriptive literature and an assortment of money-making plans used by other contractors, carpenters and cabinet makers. These may suggest new ideas to you.



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AMERICAN BUILDER AND BUILDING AGE



W. L. Riseley, Architect

THE HOME LOAN BILL AND THE BANKERS

AS the Senate hearings on the Federal Home Loan Bank Bill progress, the hostility of many of the bankers toward this proposed legislation is becoming more and more apparent.

Hiram S. Cody, President of the Mortgage Bankers Association, launched the first attack against it, and is seconded now by the interim committee of the American Bankers Association, which asks that action on the Home Loan Bill be held up until it is determined whether the Reconstruction Finance Corporation will not meet the present needs of the situation.

The contention of the bankers is that there are ample funds now available for all proper home loans and that no emergency exists to justify setting up this new home mortgage discount system. Opposed to these negative forces are arrayed all of the building and loan men, the realtors, the building industry forces and many representatives of the home owning and home buying public. Their testimony before the Senate committee presents a convincing picture of the critical condition in which many home financing institutions and tens of thousands of owners of mortgaged homes now find themselves—due to the almost universal lack of refinancing funds—which the bankers claim are so plentiful.

Bill benefits the many

Those favoring this home loan bank legislation maintain that it will prove a strong agency for the return of prosperous times, in that it will relieve present home owners, re-establish confidence in home buying and lead to future needed home building. The Reconstruction Finance Corporation and the liberalizing of the Federal Reserve System discount rules doubtless will be helpful; but those favoring the proposed home loan banks believe that the service rendered by them will be much more widespread and fundamental, because it will get back to the people, to the average home owner; and that, while these other measures are for this temporary

emergency only, the federal home loan banks will prove a permanent and a much needed agency in the home building and home financing field.

John Emery of Grand Rapids, Mich., past national commander of the American Legion, testifying before the Senate committee on February 16, was asked by Senator Watson, "Suppose that we do not pass this bill and let things go on as they are. What will happen to the building and loan associations?"

Home Buying No "Fad"

To which Mr. Emery replied, "The building and loan associations will continue to be subjected to the effects of depressions, to the recurring difficulties that have been experienced, and the small home ownership movement will suffer with them. This business of buying homes is not a fad. Nothing is needed so much as confidence, and the building and loan associations must have the confidence of their customers, or our economic structure is going to feel the effects of it.

"I heard a question asked here, 'How long will the depression last?' I cannot answer that, but I can tell you when the depression will end. That time is when the bankers are able to quit telling their customers, 'Sorry, but we cannot loan any money on real estate.'"

As this is being written, the hearings on the home loan bill (S. 2959) are still in progress. Whether it will be allowed to die in committee or will be recommended for passage depends to a large extent on the amount of pressure which those who are for it or against it are able to bring to bear on this committee. Bankers are active in opposition; the building and loan men, the builders, dealers and realtors are fighting for it. By prompt, united and forceful action on the part of the men of the building industry, a favorable decision can be won. Readers of the publication who favor this legislation should communicate at once with Senator James E. Watson (Ind.), Chairman, or with the other members of the committee, Senators John G. Townsend, Jr. (Del.), James Couzens (Mich.), Robert J. Bulkley (O.), and Cameron Morrison (N. C.)

WAGES COMING DOWN

NO event of the past month could be more timely and encouraging to the building industry than the recent widespread announcements of wage reductions. Coming as they did at the very beginning of spring building, they will undoubtedly give impetus to the new season.

Unusual attention was paid the wage announcements by newspapers of the country. In Chicago, headlines an inch high blazoned "Cut Wages to Boom Building." Other cities greeted the news with equal enthusiasm as an important step in the promotion of more building, and therefore, of better business conditions generally. The upswing of the stock market that followed can be attributed to a number of causes, but certainly one of them, and an important one, was the better outlook for the construction industry indicated by the determination of builders to reduce costs to a point where investment funds will be attracted.

Should stimulate loans

Especial good was performed in two other fields by the wide publicity given the wage reductions. First, financing bodies which have been clamoring for lower costs were assured of definite action. There is now no reason why they should not release more funds for building. Second, the attention of the public was forcibly focused on the fact that homes and other structures can now be erected at lower cost. This should give an immediate incentive to residential building.

As we go to press, at least 16 important building centers have announced wage reductions, many of them voluntary on the part of the workers.

Reductions in wages of building employees come as the last resort of employers who have no other recourse. There can be no doubt that high wages were holding back construction. Widespread departure from published schedules was also apparent, as we have pointed out in previous editorials. In a sense, the announcements were merely acknowledgment of a movement that necessity had already dictated in a majority of cases. But there still remains great value in the public announcement. It shows a disposition on the part of workers to take a serious interest in the welfare of their industry. It shows recognition of a feeling among workers that a job at \$1.00 an hour is preferable to no job at all with the official scale at \$1.50.

The building wage reductions followed closely on the heels of a similar action by the railroad labor organizations; in both there was feeling that such a step was necessary for the best interests of the industry. This new attitude of labor in both industries was well expressed by D. B. Robertson, Chairman of the Railway Labor Executives Association, who said, "In the hope that our action may improve the health of our industry, improve the co-operative relations of managements and employees, may stimulate a revival of business, and may

advance the general welfare, we have decided to accept . . ."

What is now needed is aggressive selling on a large scale to capitalize on the good impression created. The wage reductions constitute a strong argument that warrants redoubled effort by the entire industry.

NEW DEVELOPMENTS IN HOUSE BUILDING

IN the report of the Committee on Technological Developments of the President's Conference on Home Building and Home Ownership, summarized in an article in this issue, there is evidence of a double difficulty that was also faced by some other committees of this conference—the difficulty of reconciling old ideas, ways and materials with new ideas, methods and materials that exist in a fast-changing industry, and the difficulty of combining various opinions about these changes into a common set of recommendations.

After reading its report, one might be led to believe that if the committee had the power to dictate what kind of small houses were to be erected in the United States from now on, it would specify a house composed of rammed earth walls with floors and roof of pre-fabricated units!

On many points, the stand of the committee was courageous, no matter what may be thought of its opinions. We gather the definite impression from the report that the committee believes in the small house built of pre-fabricated structural units (presumably of metal), the house to be assembled from these units on the site. It may possibly contain whole rooms that have been put together in the factory and brought to the site to be installed. It seems to be the idea of the committee that these houses are to be sold complete, the home seeker having very little, if any, choice in design or equipment. Furthermore, these houses would be manufactured, distributed and erected by large organizations on a mass production and sale basis. And so, the committee believes, we would then get small homes, eminently suitable for modern living, at a low cost.

Must prove practical

The pre-fabricated house, built by large organizations, may be an answer to the low cost housing problem; but we can't tell a thing about it until somebody proves that such a house is habitable, that it is structurally sound, that its cost is really low, that an efficient system can be operated to distribute the parts and erect and service the house, that its design and layout will win popular acceptance—just to mention a few things that have not yet been proven.

Before we say progress, we must show progress and convince others that it really represents progress. Let us not neglect the proven materials and methods at hand.



Photo by
Torkel Korling

THE OLD MAKES WAY FOR THE NEW

Old methods, old ideas . . .
Out they go . . . The pressure
of new demands
will not be denied.



From the Rochester Democrat and Chronicle

The Rochester Plan of employment relief, described in this article, has been investigated and found to be sound by the U. S. Department of Commerce. The U. S. Chamber of Commerce is now advising its member groups of this plan and suggesting that they consider its use in their own communities. A complete detailed description of the Rochester Plan is available upon request to The Civic Committee On Unemployment, Rochester, New York.

—THE EDITORS.

IN December of last year a plan was put into effect in the City of Rochester, New York, that resulted in the pledging of expenditures aggregating more than \$6,000,000; at least 75 per cent will be for repairs and improvements to homes, commercial, industrial and other property. All this was done simply and directly and without calling upon a single person to make unnecessary or unjustified outlay. The Rochester Plan is said to be so simple, and yet so effective, that it can be put into operation in practically any community in the country, large or small, and is of particular interest to builders, dealers, architects, and realtors at this time because it provides a definite, workable method of reviving legitimate residential and other construction activity this spring.

The plan was initiated by L. M. Todd, a retired manufacturer of Rochester. "I wondered what could be done to create employment," says Mr. Todd. "Broadcasted messages did not appear to do much good and the whole

The form used by canvassers is shown on the right. The first page carries the appeal to participate, the second page shows the pledge form at the top and the fulfillment report at the bottom, which is retained by the signer and returned upon completion of pledge. The third page carries suggestions as to improvements.

Creating Business

thing seemed to narrow down to a local and an individual problem."

Thinking along these lines, Mr. Todd finally worked out a form of pledge (illustrated below) as the nucleus of his scheme.

A preliminary trial of the plan was followed by a thorough and complete 10-day canvass of Rochester and environs with an organization of 1300 workers.

The campaign began on Friday, December 4, and ended on Monday, December 14. More than \$6,000,000 was pledged and no foolish expenditures were solicited. According to present reports, the fulfillment of pledges exceeds amounts pledged by 14 per cent. The average pledge was \$557. No definite goal as to the amount of pledges to be secured was set at the outset of the campaign. It was hoped that \$3,000,000 in pledges could be secured in the 10-day drive. This figure was reached as early as the tenth day.

"There is no copyright or patent on our plan," says Mr. Todd. "Use it!" he urges. "Face the depression! Don't wait for something to happen. Independent gestures are apt to be futile but combine with your neighbors and you have an irresistible force."

"This is not an untried plan but a well proven formula that can be recommended," Mr. Todd declares. "No changes ought to be made in it, every community ought to use it exactly as we did. The movement should be

PROGRAM UNDER THE AUSPICES OF CIVIC COMMITTEE ON UNEMPLOYMENT

"THE INDEPENDENT EFFORT OF AN INDIVIDUAL MAY BE BUT A FEIBLE ORTURE—BUT WHEN HE JOINS IN MASS FORMATION WITH HIS NEIGHBORS THE SAME EFFORT BECOMES AN IRRESISTIBLE AND MIGHTY FORCE"

HOW YOU CAN HELP!

THERE ARE TWO THINGS YOU CAN DO:

1. Improve and repair your home, factory, store, buildings or grounds.
2. Exercise your normal purchasing power and buy the articles you need and want.

As you do one or both of these things, jobs are provided and unemployment is relieved. Whether your real estate improvements and your purchases be large or small, you are making a real contribution toward supplying jobs, and your efforts, joined with the efforts of thousands of others, will have an immense effect.

Many suggestions for property improvement, probably unthought of, the carrying out of which means the direct employment of labor, are listed on the next page.

While the sponsors of this plan do not urge any foolish spending they do nevertheless believe THAT IF EVERY INDIVIDUAL WHO IS IN A POSITION TO EXERCISE EVEN HIS NORMAL PURCHASING POWER WOULD DO SO, instead of feeling that it is essential to cur expenditures to the minimum, there would be immediate relief from the present stagnation in building, manufacturing and distribution.

The idle dollar benefits no one. On the other hand, every dollar which is put into circulation at the present time keeps on working for the benefit of the entire community.

For this reason, this program should appeal to you to do your personal share in relieving the present situation by spending money for the direct employment of labor, as suggested, and by the indirect employment of labor in the consumption of products already made or produced.

Concretely this means that the individual who is accustomed to buying one suit of clothes should NOT TRY to make the old one do; that the individual who usually purchases two suits should not now provide himself with merely one, and that the purchase of all other appareling should be considered in the same way; that if new furnishings or equipment for the home are contemplated, they should be purchased immediately rather than deferred; that if you want a new radio, buy it now; that if a new automobile is being considered, contact a dealer at once, that so-called luxuries should not be considered as non-essentials, that the Christmas list should be extended rather than curtailed.

THE PURCHASE OF ALL OF THESE THINGS SUGGESTED AND HUNDREDS NOT ENUMERATED MEANS EMPLOYMENT. THIS MEANS JOBS AND WAGES.

by Local Community Effort

Here's a Tried and True Plan That Is Being Used in Some Localities with Great Success

a civic one and no favorites should be played. No foolish expenditures should be encouraged and the whole campaign should be put in the hands of a thoroughly competent manager for successful fulfillment."

The importance of the sum pledged in Rochester may be realized from the fact that a dollar is said to change hands about 17 times in one year, Mr. Todd declares.

The whole Rochester campaign was carried on with a small campaign fund of \$11,000 raised from the city unemployment fund, industrial plants and associations, retail merchants, the Builders' Exchange, and other groups. During the 10-day campaign, five noon-day luncheons were held for workers and reports were made public as to the amount of pledges secured each day. Each of the three daily newspapers donated five pages of display advertising and assigned reporters to assist in giving publicity to the plan. The expense of luncheons and dinners for the workers and the expense of printing, mailing, stenographic work, and similar services were paid for from the campaign fund. The campaign manager and canvassers received no pay. Most of the calls were made by canvassers in the evenings and on Saturdays and Sundays. Two or three calls were necessary on the average, it is said.

Three weeks were required to organize the campaign and secure the needed workers. Each worker was provided with a badge, canvasser's manual and printed material, including the pledge blanks illustrated herewith.

Variations of the Rochester Plan have been put into effect in other communities and have worked out very successfully, according to the testimony of builders and dealers in these communities. In Elmira, New York, a town of 60,000 inhabitants, a local building material dealer reports that pledges of more than \$1,300,000 were secured where the committee expected to raise only \$500,000. The so-called Rochester plan, described in this article, was used practically without variation.

Pawtucket, Rhode Island, is another city that has undertaken a successful modernizing campaign. The Chamber of Commerce investigated and found that thousands of structures needed repairs but a stimulus to proceed with them seemed to be lacking. Builders, dealers, and realtors organized and in three months time, under the successful leadership of a campaign manager, had secured work amounting to more than \$750,000, a local dealer reports. No sentimental appeal was made, people were simply shown that there was an opportunity to have repairs done more cheaply than at any previous time. Publicity, advertising, truck placards, direct mail, talks, school essays and all other available means were used to put this campaign over. "CONSULT CONTRACTORS AND DEALERS" was the keynote of much of the newspaper advertising. During the campaign a show room was kept open on the main street and all inquiries received were distributed to local builders.

Suggestions for Improvements to Real Estate

<p>BASEMENT</p> <p>Excavate cellar. Build foundation footings and walls. Provide drain tile around outside of footings. Apply waterproofing to walls. Apply fire stopping around sills. Increase window space. Paint walls to brighten basement. Lay basement floor. Provide drainage facilities. Apply special floor treatments. Provide outside entrance and stairs. Reduce inside stairway. Provide railing for cellar stairs. Apply bridging between floor joists. Cover basement ceiling. Install partitions for storage bins, etc. Install fruit closet, shelves, etc. Install work bench and equipment. Build game room or children's play-room. Build basement garage.</p> <p>INTERIOR OF HOUSE (General)</p> <p>Lay new floor over old. Install partitions to provide additional rooms or closets. Remove partitions to afford additional space. Build dining alcove or breakfast nook. Remove walls to provide open stairway. Replace worn-out trends on stairs. Replace old stair posts and railings with modern types. Provide rubber or composition stair tread coverings. Provide wall or ceiling insulation. Panel walls or ceiling. Install baseboards, picture molding, etc. Build linen closet. Build clothes chest. Provide built-in book-cases or cabinets. Provide built-in mail box. Install telephone cabinet. Provide built-in cabinet for fire extinguisher.</p> <p>DOORS AND WINDOWS</p> <p>Replace narrow doorways with planned arches or similar large openings. Install new openings between rooms. Provide additional window space. Replace ordinary doors with French doors, mirror doors, etc. Replace wood panels with glass in doors. Replace worn-out window pulleys and cords with newer types. Replace hardware. Install safety catches on doors and windows. Install window adjusters. Install door checks and guards. Provide window ventilators. Install window screens. Provide window and porch boxes. Install shutters or replace old shutters with newer type. Caulk around outside of frames. Apply weather-stripping. Make new screens or install special type such as coil screens, etc. Provide screen windows and doors. Provide awnings.</p>	<p>KITCHEN</p> <p>Lay floor coverings such as linoleum, rubber tile, etc. Install wall tile. Build kitchen cabinets and shelves. Provide built-in ironing board. Provide built-in broom closet. Provide ventilating fans and equipment. Provide milk and package receiver. Install sanitary garbage disposal equipment. Install safety rear door.</p> <p>BATHROOM</p> <p>Build and equip bathrooms where none exist. Replace tub, lavatory, and water-closet with modern types. Provide improved toilet seat. Install shower stall. Lay floor coverings such as linoleum, rubber tile, etc. Install wall and floor tile. Provide medicine cabinet, mirrors, etc. Provide towel racks, shelving, built-in conveniences, etc. Install built-in wardrobe.</p> <p>BEDROOMS</p> <p>Provide additional windows for cross ventilation. Build cedar closets or boxes. Line closets with cedar plaster. Install clothes hangers, shoe-racks, etc., in closets. Provide built-in wardrobes. Install space-saving roller or folding beds. Install small wall safes or modgepox steel trunks.</p> <p>ATTIC</p> <p>Provide disappearing stairway. Apply fireproofing between studs at floor line. Lay finished flooring. Partition off rooms. Apply finishing material to walls and ceiling. Provide ventilating louvers or windows. Provide insulating materials under roof, on side walls, or floor structure.</p> <p>LIGHTING AND POWER</p> <p>Install modern lighting system in place of obsolete type. Rewire with modern system to reduce fire hazard. Insulate exposed wires where required. Replace old fixtures with modern types. Install wall brackets. Provide additional convenience outlets. Install lights on porches, in basements, and garage. Provide new appliance cords. Install transformer in place of hasty bell system. Install additional bells for conveniences. Improve radio aerial and connections.</p> <p>PLUMBING</p> <p>Install efficient water system in place of open well, hand pump, etc. Replace obsolete piping with modern, durable type. Replace obsolete fixtures with newer types.</p>	<p>Install additional shut-off cocks or valves. Cover water pipes to prevent freezing. Provide laundry tubs. Provide water-softening systems. Provide water-heating equipment. Install extra toilet on first floor or basement. Install extra shower in basement. Install refrigerator drain.</p> <p>HEATING</p> <p>Replace obsolete heating equipment with modern types. Increase amount of radiation. Install automatic sockets, ash conveyors, etc. Provide thermostat controls. Insulate heating equipment and pipes in basement. Apply fireproofing around heating equipment. Paint radiators to increase efficiency. Provide radiator covers or cabinets. Install concealed radiators. Provide register shields. Provide humidifiers, air conditioners, etc. Build fireplace. Provide fireplace ash dump and accessories. Install throat and damper devices in open fireplaces. Install new-built fireplace equipment units. Install radiating heaters, logs, etc. Provide fireplace hardware. Install special mantels. Provide heat in garage.</p> <p>EXTERIOR AND GROUNDS</p> <p>Replace wall surfaces with newer or more attractive materials. Remove obsolete ornamental trimmings from house and porches. Lay new roofing materials over old roof. Apply snow guards on pitched roof surfaces. Install lightning arresters. Provide chimney pots. Replace worn-out gutters and downspouts with durable material. Connect down spouts to drainage system. Provide splash blocks below down spouts. Build additional porches. Replace porches with formal entrances. Build sun porch or sleeping porch. Enclose porches with screening or glass. Build new porch foundation. Lay new porch floor. Replace old porch steps. Replace porch columns and railings with more modern types. Enclose open spaces under porches and house with latticework. Provide porch awnings, blinds, etc. Grade around foundation. Lay new sidewalks. Build new driveway and curbside. Plant shrubbery and trees. Build pergola, trellis, etc. Provide boot scrapers. Build or remodel garage. Lay concrete floor in garage. Build pit for servicing car.</p>
---	---	--

Block _____

Street _____

Ward _____

Pledge obtained by _____

(DATE) _____

BELIEVING that a dollar invested in employing labor does more good than a dollar given as charity, and desiring to help to increase employment, I hereby pledge that I will, during the next three months, (or before _____ 1932), expend at least \$ _____ in improving my home, factory, store, buildings or grounds by purchasing desirable equipment or by making needed additions, repairs or alterations; and/or by making personal purchases for myself, family or friends, which otherwise might be deferred.

Signed _____

59760

Address _____

Mr. _____ Block Worker

Street _____

Telephone _____

PLEASE RETURN THIS REPORT TO

or to Civic Committee on Unemployment, 18 Spring Street, Rochester, N. Y.

Date _____

THE expenditure which I pledged in the amount of \$ _____ has been completed. The total expenditure was \$ _____ of which _____ was the cost of improvements to real estate.

\$ _____ was for equipment, furnishings and personal effects.

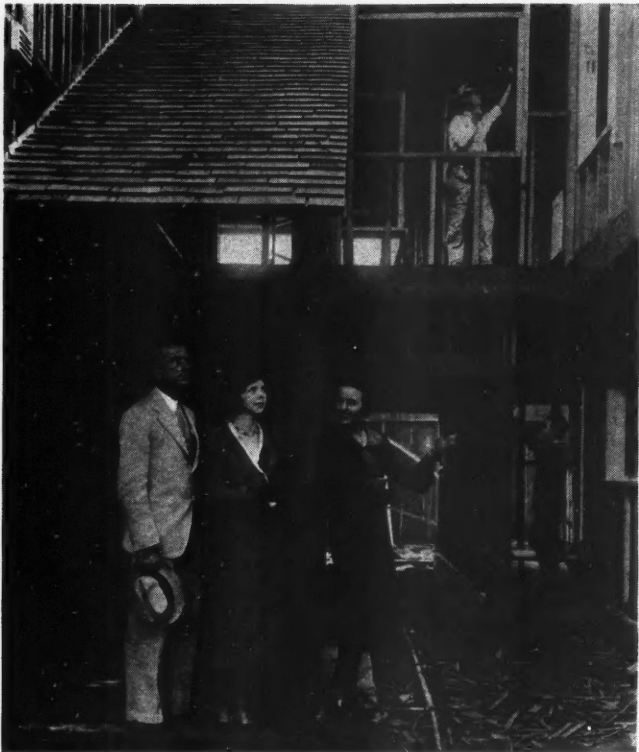
Signed _____

59760

Address _____



Framing Details for Studio-Shop-Apartment Structure Being Erected by Janss Investment Corp. of Los Angeles



Stair and Framing Details Dramatized by Live Models for Newspaper Publication

Demonstrating QUALITY WORK

SO MANY "temporary" builders have talked about "quality building" while at the same time performing construction operations that were in reality very bad that the public is somewhat suspicious.

Builders who are actually doing high grade work are therefore confronted with the problem of *demonstrating* quality. The buying public wants proof. Several Los Angeles realtors and builders have adopted photography as the best means.

The pictures accompanying this article were taken on the job and were used wherever possible for publicity purposes. They are especially suited for newspaper articles, but can also be used in the preparation of folders, salesmen's portfolios or direct by mail literature. They could be tacked up on bulletin boards in public places.

A good photograph tells more than any amount of writing, these Los Angeles builders maintain.

Current construction practice in Los Angeles is brought out in these views. The heavy framing of the



Applying Backing for Stucco Exterior. The posed action photograph interests the public in home-building methods



How Inside of Stucco Wall Looks: Note wire reinforcing under paper backing. Braced frame is emphasized

studio-shop-apartment structure of the Janss Investment Corporation is instructive.

Methods of applying stucco so that it will never crack have been developed to a high degree in the coast city. Details are shown in several of the pictures: note view of underside of stucco exterior which shows wire reinforcing as applied by Los Angeles Investment Company. Specifications for exterior stucco reinforcing and backing used by this company, and similar to the Los Angeles building code requirements, are as follows:

"String wires, No. 18 W&M gauge, horizontally over studs spaced not more than 8" apart, stretched taut and nailed to studs not over 32" apart. Cover all surfaces to be plastered with approved asphalt saturated waterproof paper, weighing not less than 15 pounds per 100 square feet nailed in place with galvanized roofing nails with 3/8" diameter heads, spaced not more than 48" apart horizontally, or 36" apart vertically. All joints to be lapped to shed water. Over this apply 1 1/2" mesh No. 16 gauge galvanized woven wire netting, or other approved metal reinforcing weighing not less than 1.6 lbs. per square yard, lapped not less than 1" at joints, and shall be kept not less than 1/4" away from backing and securely fastened to supports with galvanized self furring nails spaced not more than 16" on centers."



An Especially Good View Which Brings Out Important Features of Stair Construction and Immediately Catches the Interest of the Public. The framing methods, cross bracing, sill construction and other details may be explained and prospective buyers told why they can expect a satisfactory and lasting job

What's New In House Construction?

The Latest Developments in Products, Materials, and Structural Units Are Discussed in This Article Summarizing the Report of the Committee on Technological Developments of the President's Conference on Home Building and Home Ownership

"It is generally recognized," declares the Committee on Technological Developments, "that the small house today does not meet the needs of the people—the first cost and the cost of maintenance are far too high in most cases, making home ownership impossible for families having a moderate income." Because house builders and workmen seem slow to adopt new methods and because home owners and seekers are conservative, scientific methods have not been allowed to prevail in small house building, according to the committee, and the consequence is, the committee holds, that while new materials and methods are being utilized in the construction of office buildings, shops and factories, small houses have fallen far short of meeting the needs of our advancing civilization.

Shop Fabrication

"The shop fabrication of small houses is one of the most urgent problems which confront us at the present time," the committee believes, "but the conservatism of our people as regards housing has not been favorable to simplification and standardization," the report adds.

Listing eight advantages of shop fabrication as against only four disadvantages or "limitations," the committee describes the shop-fabricated house as consisting of walls formed of panels, say four feet wide and the height of the room. These panels are light and strong, so the committee's description runs, and are easily and quickly joined to form a house of one, two, or three stories. Floors and roof are of panels about the same size as the wall panels. Stairs are completely assembled and bathroom and kitchen may also be brought complete to the site, the committee believes. All pipes, ducts, and wires are built into each fabricated aggregate at the factory, according to this description, and connections are made after erection. The chimney can come in sections and complete fireplaces can be installed. "If practicable," the committee concludes, "both the exterior and interior surfaces of the walls will be finished ready for occupancy."

With regard to the cost of construction of such houses, the committee has this to say: "Careful consideration of the possibilities of fabricating small houses in the shop leads to the conviction that they can be produced at very much lower cost than houses of the same size are built at the present, probably at half the cost."

"But the bewildering array of new building materials now available will never come into its own nor aid materially in solving the small house problem if its application is left to craftsmen in the field accustomed to other materials," the committee declares.

The committee made the special suggestion that "A combination of rammed earth walls and partitions fabricated on the building site with shop-fabricated

There has been considerable controversy in the trade concerning some of the recommendations made by the committee of the President's Conference on Home Building and Home Ownership, particularly with regard to the report made by the Committee on Technological Development. The opinion of the editors is expressed in an editorial in this issue. This article simply represents as faithful a summary as possible of the Committee's report and includes no editorial views.

—THE EDITORS.

aggregates for floors, roofs, etc., be used to obtain satisfactory small houses at the minimum cost."

In the delivery of the report of the Committee on Technological Developments at the meeting of the President's Conference in Washington, considerable time was spent in the description and illustration, through lantern slides, of a house built of rammed earth. It is assumed from this and from the specific recommendations above that the committee considers the rammed earth house a feasible proposition.

In the main body of its report, the committee discusses in greater detail the availability and serviceability of materials and methods. "At the present time a wood frame house built in accordance with the best practice is quite satisfactory as a dwelling," the report states. Wood frame houses appear suitable for shop fabrication, the committee believes. It points out that, in addition to doors and windows, there is becoming available an increasing number of wood parts for houses which are shop-fabricated, such as porch columns, fireplace mantels, stairs, cupboards, etc. "In the future we may expect to see considerable progress in ready-cut, partially assembled and completely assembled aggregates for wood houses," the committee thinks. The report also calls attention to the appearance of wood in changed forms such as wall board and plastics. Mill-priming for each piece of wood is strongly advocated by the committee.

The use of brick and masonry in small houses is discussed in the report. It may not be possible to secure much lower costs in this type of construction, the committee believes. Bubbled concrete of light weight, used in large unit, offers possibilities, the committee feels.

Lower Costs, the Incentive

In discussing the use of metal, the committee declares: "Up to the present time, the cost has seldom been less than that of the wood framework which it replaced."

The method of welding is one which holds much promise for the future, the committee contends. "If the metal house comes into use, we will soon see large fabricated aggregates welded in the shop," the report states.

Corrosion is one enemy that metal must fight if used in house construction, the committee points out. In this connection, copper and brass are mentioned as having been used abroad in small house construction. Aluminum is also discussed as a good possibility for residential use.

Floor and roof materials are discussed in the committee's report. Metal floors suitable for small houses are now available, it is said. Light-weight, rolled I-sections have been used considerably with reinforced con-

(Continued to page 80)

The Builder as a Manufacturer

By E. L. GILBERT

Research Director, American Builder and Building Age

NOT long ago a manufacturer of building products was very much surprised to hear one of his executives refer to local builders as "manufacturers"; yet when the explanation was forthcoming he admitted that, after all, houses and other buildings have to be manufactured and that the local builder is, in reality, therefore, a manufacturer. Although this man was at first skeptical of the position and importance of the builder, he soon saw that there are advantages in having a market which is conveniently local, and in selling products which command prices ranging from ten to a hundred times the cost of an automobile.

Perhaps it is wise at this particular time to look at the building business in the same way other manufacturers are checking up on their methods and materials. Particularly the materials which builders use in manufacturing their products—buildings. Do you look at all building products as *raw materials*?

Classifying the Products Used in Building

In order to classify so heterogeneous an array of products as wall plaster, paint, millwork, electric fixtures and hardware (for example), it is necessary to find one thing which is characteristic of all these different products. That one characteristic is, of course, the labor needed to make each product suitable for permanent utility.

Bricks are of no use to the man who is interested in a new home, in the form in which they are delivered at the job; what the prospective home owner is interested in is brick walls. Thus, the brick itself may represent a few cents in cost; but by the time that brick is in the condition or form in which the man-who-wants-a-building can use it, the cost of placing the brick in a wall and the cost of brick mortar must be added. Probably the cost of the brick itself is less than a third of the cost-per-brick of the completed brick wall. In other words, building products of all kinds are not in their state of ultimate utility when they are delivered at the job; all building products are so much raw material to the local contractor or builder, architect and dealer.

Using Manufactured Products as Raw Materials

One of the most interesting examples of how a local contractor uses manufactured building products as raw material is furnished by consideration of an interior door. The manufacturer of such a door may be located anywhere from one to a thousand or more miles away from the job; to him the door is "finished" when it leaves his factory. Yet every builder will recognize the following formula:

Cost of door.....	\$ 4.00 (or 40 pct)
Cost of hardware for door.....	2.00 (or 20 pct)
Cost of paint or other finish material	1.00 (or 10 pct)
Carpenter labor to fit door and affix hardware	2.00 (or 20 pct)
Painting labor	1.00 (or 10 pct)
Contractor's cost for door installed	\$10.00 (or 100 pct)



The Builder's "Factory" in Operation.

From this illustration it is obvious that the original millwork sold by the door manufacturer is only 40 per cent "finished" when it is delivered at the job. The hardware is only 20 per cent "finished" when it is taken from the carton. And the paint or other finish material is only 10 per cent along the road toward its life of utility when the can is opened.

This is the way in which every local contractor or builder must look at all building products—something which too many manufacturers do not consider with sufficient carefulness when they are working up merchandising plans. There are instances on record where great sums are being spent to advertise to the man-who-wants-a-building, and no appropriation at all is set up for telling the story of the product to the local building professionals. You will probably be surprised to hear that this curious state of affairs has been found to be true with manufacturers of such typical building products as flooring, wall plaster, thermal insulation, paints and finishes, hardware and heating equipment. Can they have forgotten that the local builders are manufacturers, too?

Good Builders Are Eager to Learn

Just as automobile manufacturers are eager to learn of new automotive parts which will enable them to build better cars, so good builders are ever in search of new products which will enable them to build better buildings. It is good to hear of new uses for building products which have been used with satisfaction in the past, as well as to be reminded of the merits of those manufactures which, used in building construction, have been proved so good that they can be honestly recommended to the builder's customers—the buyers of all kinds of buildings. Certainly, the manufacturers of building products who help the local builders, dealers and architects to keep up-to-date deserve a strong vote of appreciation—expressed in terms of orders whenever possible. Don't you think so?

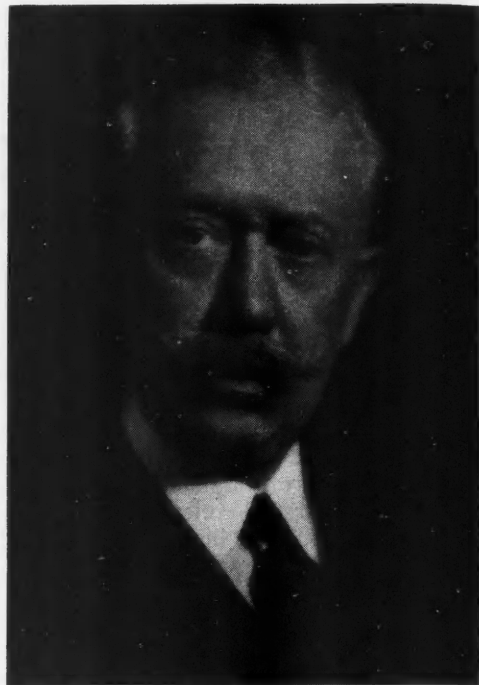
A Housing Leader Talks To The Point

On Matters We've All Been Thinking About

An Interview with

EDWARD A. MACDOUGALL

President, The Queensboro Corporation, New York



EDWARD A. MACDOUGALL

ON the eve of a hurried trip to Washington in answer to a call to discuss the need for improved mortgage financing before a Congressional committee, E. A. MacDougall, builder of one of the nation's most famous residential projects and an international authority on housing, sat down at the luncheon table to discuss some of the important phases of the residential building situation. Direct in manner and speech, Mr. MacDougall instantly brought forward the problems uppermost in his mind and talked frankly about them.

"Only one kind of credit is now of any value in residential building," he declared, "and that is long term mortgage money and by long term I mean 15 years. More than ten years ago, I erected apartment houses to sell co-operatively and financed them on the basis of long term mortgages. Had they been financed on a short term basis, the owners would have been in a pretty pass today! Unfortunately, tens of thousands of homes throughout the country have been mortgaged on short term loans and consequently we are now faced with a situation where thousands of home owners stand to lose their domiciles. Plans to allow mortgage paper to be rediscounted through central agencies are designed to correct and relieve this condition and make it possible for banks, building and loan associations and other lending agencies to liquidate good mortgage paper without making further demands upon home owners."

"Sloganized demands to 'Stop Hoarding' are not going to cause people to ruin out and spend their money whether these calls come from the White House or anywhere else," Mr. MacDougall continued. "People are not going to make the mistakes now that they did a few years ago and this applies to the housing market as well as to any other. Even in order to have their own homes, why should people borrow money in these times on short term loans that would have to be paid up in full at the end of three years if the lenders so demanded?"

"Do you think that federal legislation permitting discount of mortgage paper will result in an increase in house construction?" Mr. MacDougall was asked.

"We don't want to overestimate construction right now," he replied. "When we are able to offer the public

real home values that are available on *reasonable financial terms*, we will be in a position to go ahead, and this will have to be accomplished in some manner, preferably by federal legislation."

"Don't you think that one of the best ways of remedying housing conditions is through local community effort?" he was asked.

"I most certainly do," he replied emphatically, "and that is exactly why we passed a recommendation at the mid-winter meeting of the National Association of Real Estate Boards, suggesting to member boards of this Association that they consider the appointment of local committees on housing which will study the reports of the President's Conference and their applicability to local needs. The work of the President's Conference ought to be carried on. As you know, I have for years been pointing out the necessity of a National Housing Institute to co-ordinate our attack on housing problems. There is now a greater need than ever for such an Institute. Meanwhile, a few cities like Detroit and Philadelphia have organized active co-operative organizations to tackle their housing problems in a common sense way."

Just at this point Mr. MacDougall was called from the table to take an out-of-town 'phone call. In a few minutes he returned to explain that it had been a call relative to the tax situation. A hard battle is being fought by organized property owners in his state (New York) to relieve homes and real estate of the disproportionate burden of taxes being carried and as one of the leaders in this fight he is in the forefront of a war against excessive real estate taxes being carried on in more than a dozen states.

"We are faced with a difficult situation in the reduction of taxes on real estate property," he said, "but some solution must certainly be found. This is another and additional reason why people refuse to buy homes, they know very well what will be unloaded on them in the way of taxes the instant they step into their own homes."

"The solution which we offer in New York State is to have the state government control inefficiency and excessive spending in counties and municipalities by

(Continued to page 80)

MARCH, 1932

A Striking Entrance with Details Nicely Worked Out in Brick and Stone.



Photo by M

HOMES THAT COMPEL FAVORABLE ATTENTION

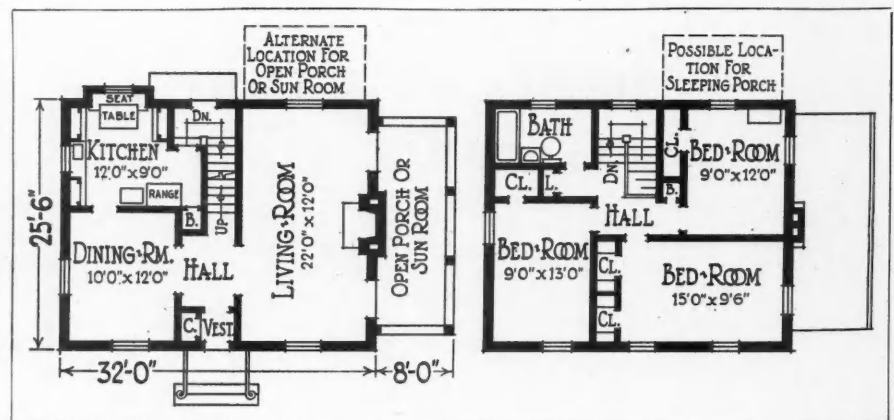
The Successful Men Today in the Business of Planning and Building Homes Are Efficiently Combining Good Architecture, Good Materials and Good Construction—All Priced Attractively in Line with Other Present-Day Commodity and Service Prices.



Design No. 6-A-72, Copyright Architects' Small House Service Bureau, Inc.

Colonial Restraint and Dignity

Here we have one of the most popular types of small house plans, that in which there is a central stairway, with a long living room on one side and kitchen and dining room on the other. While the central hallway running from front to back is typically Colonial, this requires a wider house and can only be had at considerable additional expense. Many believe that the convenience gained by a full length hallway is not proportionate to the added cost, and this house has been designed without it.





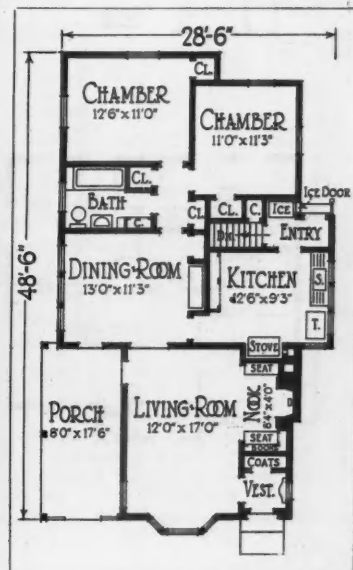
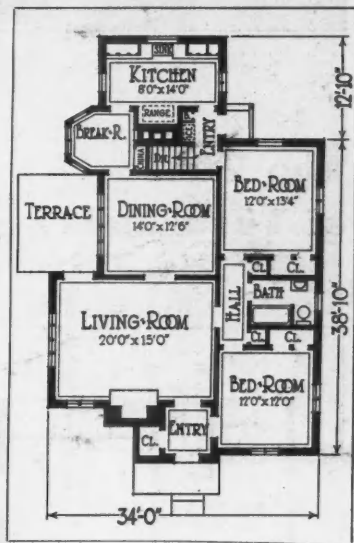
Design No. 5-B-23, Copyright A. S. H. S. B.

Two Unusual Bungalows

The features of the home above are: A kitchen with windows on three sides, a breakfast alcove, fireplace in the living room and spacious wardrobe closets in the bedrooms.

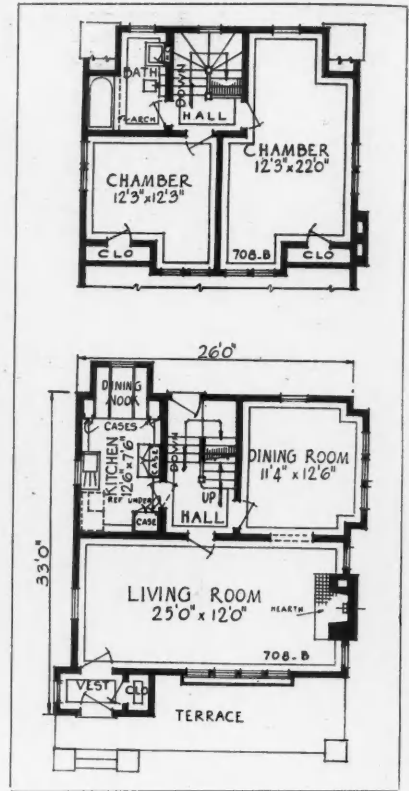
Unlike most five-room bungalows the one below has cross ventilation for every room. The living room with its great bay window and with the fireplace in the inglenook out of the line of traffic is undoubtedly the feature of the house, but the dining room and the kitchen also have interesting qualities.

Design No. 5-D-25, Copyright Architects' Small House Service Bureau.





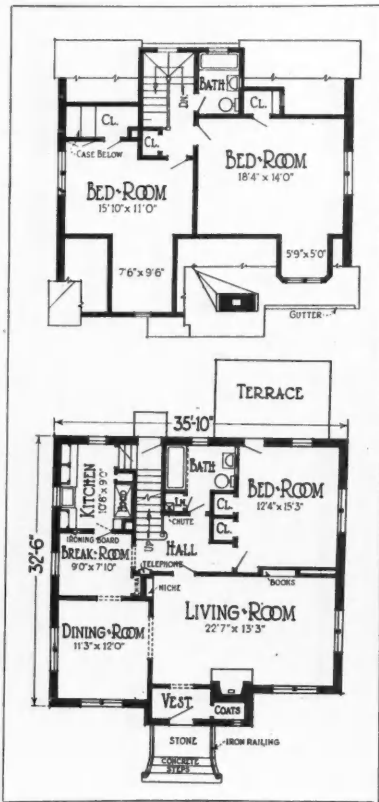
National Plan Service Design.



The Pick of Thousands

Below is shown how a loan official builds. The house of Lyle H. Plant of the Wheeler Kelly Hagny Trust Company, Wichita, Kans., built after inspecting for loan purposes several thousand homes, over a period of five years. It does not pretend to contain all the advantages of these various houses, but has at least eliminated many of their defects, and does offer greater convenience and economy of floor space than most of the houses at its price.

Home of Lyle H. Plant, Wichita, Kans.; Wendell Parks, Architect.

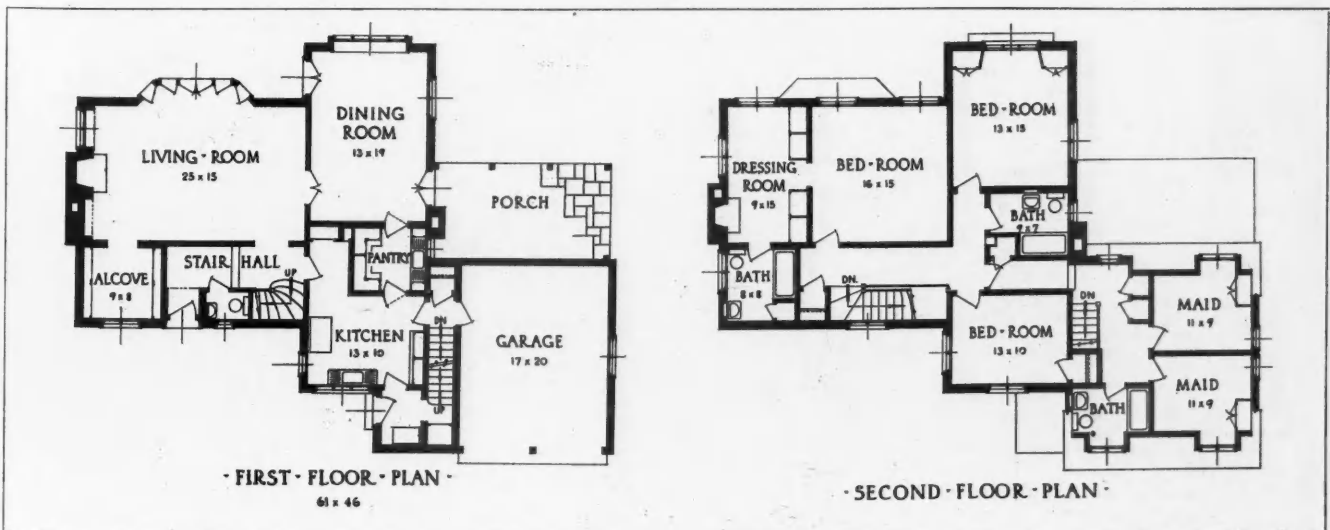




Anderson and Tichnor, Architects.

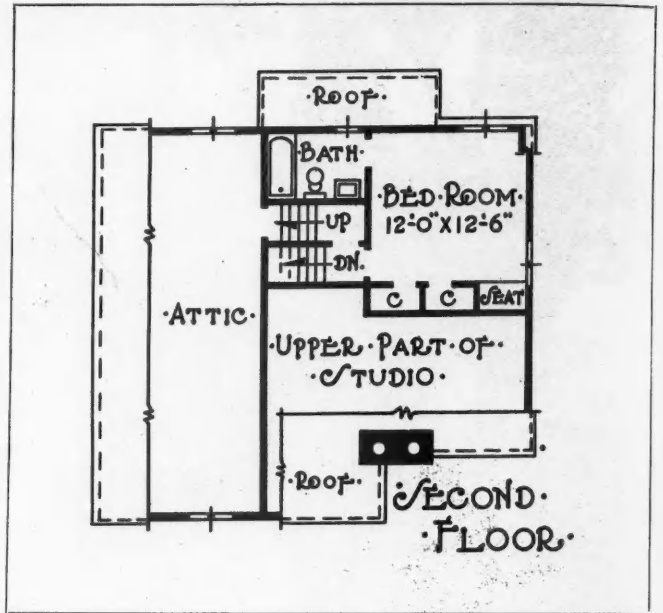
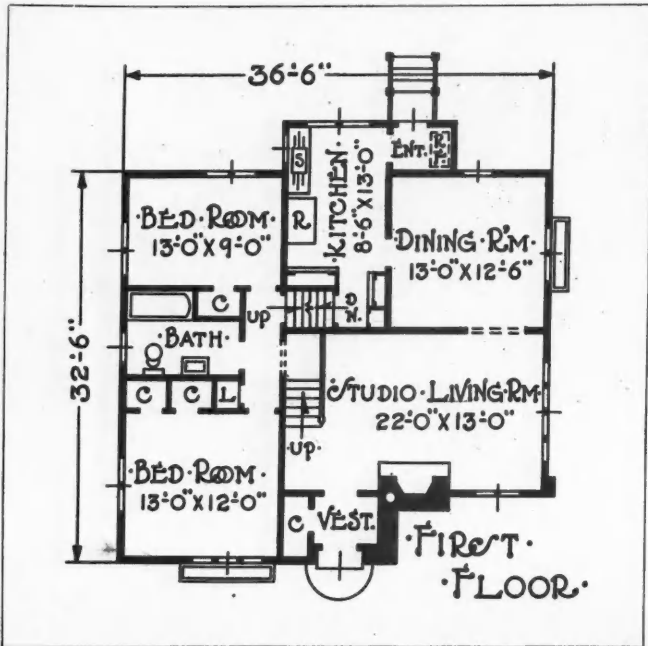
The residence of Randolph Owsley at Lake Forest, Ill., is a convincing demonstration of modern stone construction which uses a 4-inch veneer or stone facing, backed up with brick or tile, cinder blocks or stud frame. The view shown here is of the garden front, the street entrance being on the other side. All sides of this structure are impressive in their look of stability yet charmingly homelike—which is one of the characteristics of stone.

Stone for Stability



Quaint Cottage in Stone and Stucco

Here is a design a little out of the ordinary. The structure is economical to erect yet there is a great deal of exterior attractiveness about this cottage. The design is such as to permit an unusual, but effective, room arrangement.



Residence at Shado Lawn
Hastings-on-Hudson, New York

HOMELAND COMPANY
Developers

STINSON CONSTRUCTION COMPANY
Builders



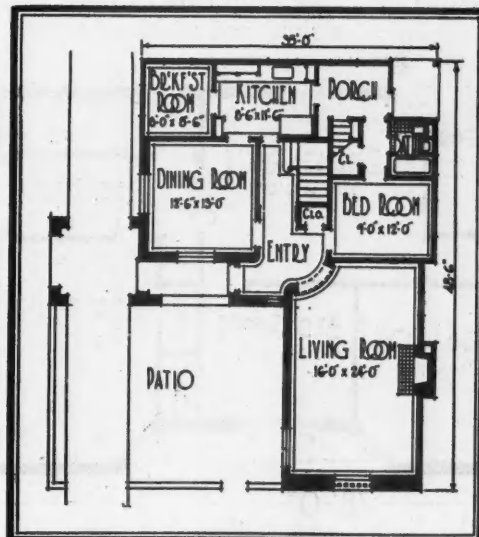


Designed and Built by
THE LINCOLN MORTGAGE CO.

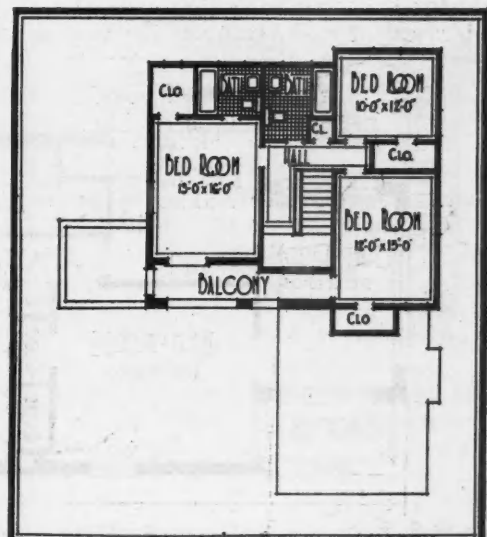
Analyze the plan of this house and we will immediately see that the main first floor portion as well as the second floor is contained in a square plan with the living-room and porte-cochere attached and built out from this square. It is thus possible to vary the plans of houses and also the exterior design by building on to the square plan other rooms or appendages. In the elevation good use has been made of the square headed porte-cochere opening, illustrating that these two units may be gracefully combined. Note that the arch of the porte-cochere is just a trifle higher than the head of the square opening to the right. This is purposely done, otherwise the arch will appear lower than the adjoining opening, an unpleasant result.

Spanish Home from California

FIRST FLOOR



SECOND FLOOR



With Apartment Above

Modern Shop Has Quarters for Proprietor on Upper Floor

By WM. G. KRIEG, Architect

TO operate a small business successfully, many storekeepers find it necessary to keep in personal contact with customers, which generally means close application and long hours of work, making it rather inconvenient to live far from their places of business.

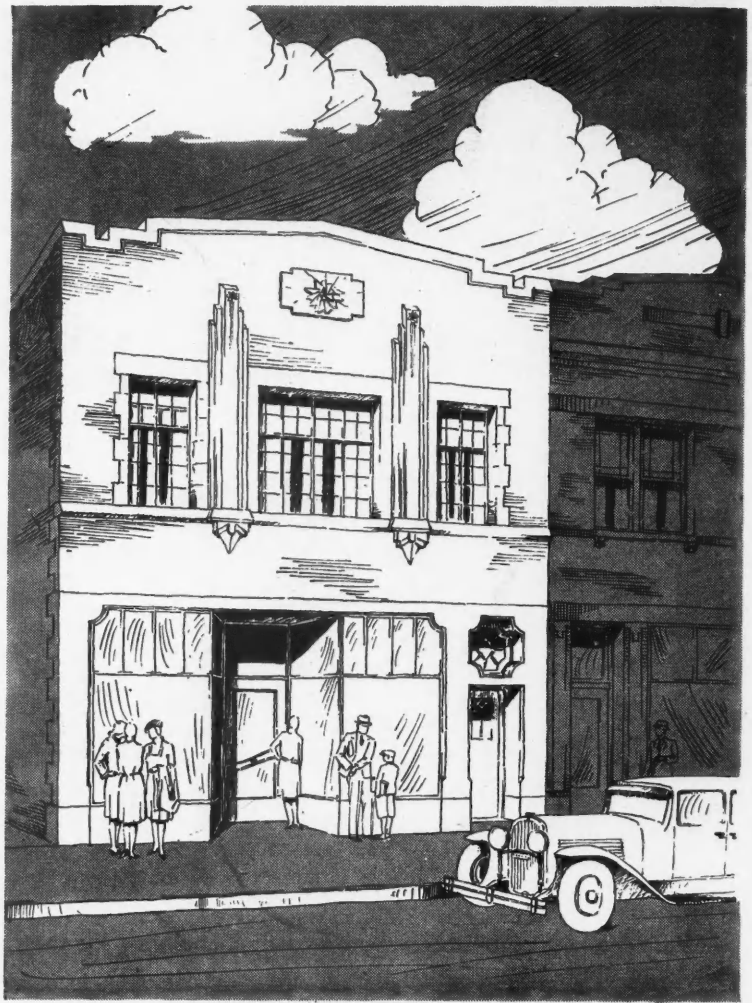
Sometimes it is possible to arrange the available space over a shop into a suite embodying the owner's requirements as to number of rooms, with ample light and air and the conveniences of a real residence, as was done in the building herewith illustrated, built in Berwyn, Illinois, at a cost of \$18,414, or 24 cents per cubic foot for the 75,910 cubic feet contained.

A general description of this building, which covers the full width of the lot, is as follows:

Concrete basement walls and floors laid with integral waterproofing; masonry outside walls, those forming courts on second floor supported on steel girders. Floor and roof construction of yellow pine with sound deadening on second floor; vermin-proof rosin paper between basement and shop; one-half inch thick insulation under the roof. Outside walls are furred and the entire walls plastered on wire lath; in addition, there is a stamped metal ceiling in the store to form a firebreak between the two floors. A basement extends under the entire building below the grade which has drain tile around the walls; and an automatic cellar pump lifts the seepage water to the drainage connections.

The hot water house heater and a laundry take up the rear part of the basement while the front is arranged for shop storage and space for a mechanical refrigerator.

The living room which is eighteen inches higher than the balance of the rooms extends across the front of the building; it has an arched ceiling and a fenestration of steel casement sash, forming the central front motive.

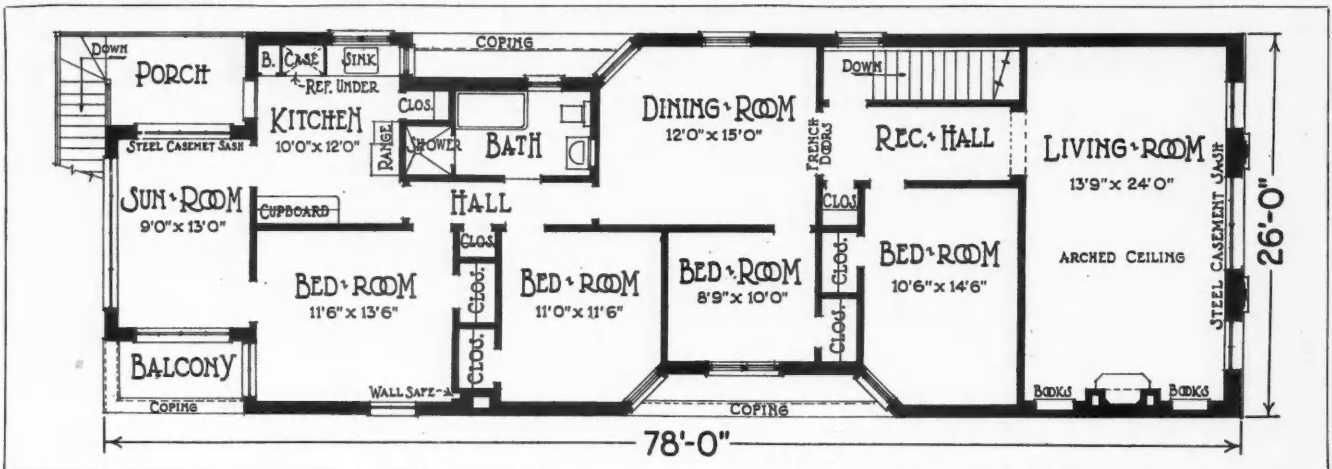


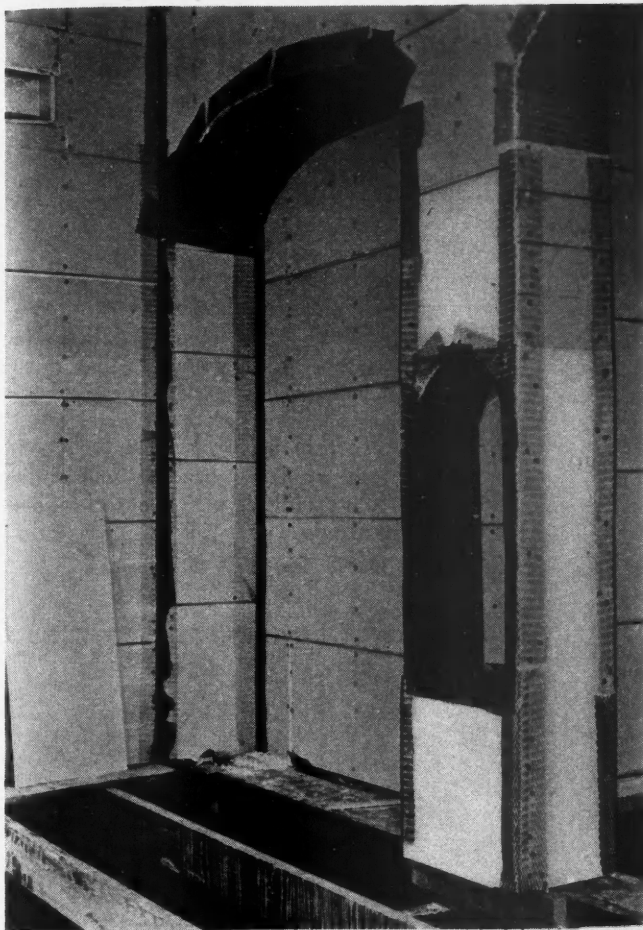
The mantel on the side wall and the arched opening to the reception room are secondary treatments in this room.

On the rear end of the apartment is a sun room, overlooking a lawn in the rear yard. This room connects with a main chamber and the kitchen so it can be used either as a sleeping porch or breakfast room.

The bath room floor and wainscoting are of tile and a recessed shower bath on one side is also lined with tile. Other floors throughout are of oak excepting the kitchen which is of rubber tile.

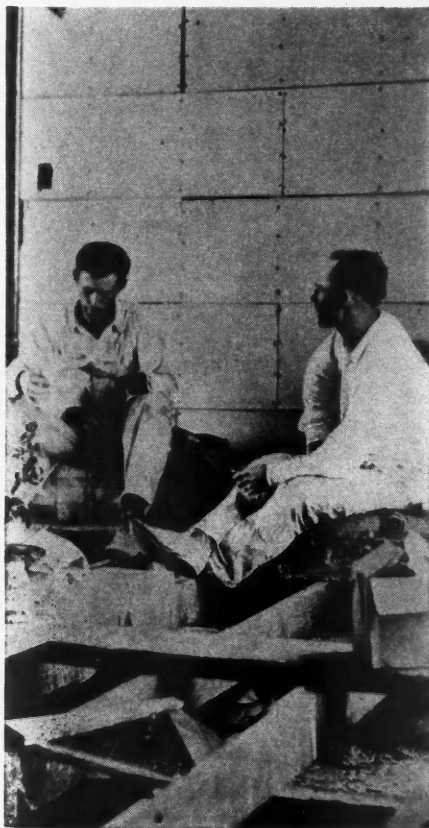
There is no wood trim in the main rooms except base boards and picture moulds. The window stools are of metal. In the bed rooms a three and one-half inch wide back band trim of birch was used, which is finished in walnut and white enamel.





Gypsum Plaster Base in Position with Metal Lath Corner Reinforcing, Dining-room Alcove. Builder, W. E. Rudasill; plaster contractor, R. L. Henderson.

At right: Henderson demonstrates stucco application over brick garage.



Plaster Contractor Henderson (Right) and Helper Smith Talk Things Over, While Taking Thirty Minutes Out for Lunch.

No Plaster Cracks!

An interview with R. L. Henderson, Plaster Contractor of Tucson, Arizona, on the solution of a difficult problem

"THE hot, dry climate of the Southwest makes good plastering difficult," says R. L. Henderson, who has an enviable reputation for satisfactory plaster work. "After we start a job, we practically live with it until it is finished, especially during the hot summer months with the thermometer consistently around 110.

"The dry air calls for much water. We soak wood lath thoroughly two hours before applying plaster. Then we lightly spray the lath ten or fifteen minutes before application, allowing the water just to soak in before putting on the plaster.

"Curing is a difficult problem, and it is in this respect that what I say about 'living with the job' is true. Usually we spray the newly-applied base coat within two hours after application to start crystallization. We repeat this spraying every two or three hours. Windows are covered to keep out the dry wind. Before applying fin-



ish coat we saturate the wall just so water does not stand on surface. During hot weather here the amount of retarder in plaster is reduced so crystallization will take place before water has evaporated.

"Some of our best plaster is applied over gypsum board base. Metal lath is also very good. Wood lath must be handled carefully to prevent cracks due to drying out.

"When using wood lath, we place light-weight metal lath at all angles. A six-inch strip is placed where wood partition meets a brick wall. Where there is more than a two-inch bearing behind the lath, we strip with felt to keep moisture from the wood. To get an especially good job we sometimes cover the entire wood lath wall with one-inch or two-inch chicken wire."

A Simple Cost Keeping Method

Used Successfully by C. K. Wells, Jr., Baltimore Builder

ESTIMATE SHEET NO. 1					
Description of Job		Estimate #1	Estimate #2	Estimate #3	Estimate #4
Location					
1	Survey Lot				
2	Topo Map				
3	Building Permit				
4	Water Service				
5	Gas (Cons. G. & E. Co.)				
6	Sewer Permit				
7	Temporary Elec. Service				
8	Temporary Telephone				
9	Temporary Heat				
10	Removal of Trees and Clearing Site				
11	Excavation of Rough Grading				
12	Fill				
13	Foundation Drains				
14	Storm Drain Material				
15	Finished Grading				
16	Grass Seed				
17	Stonework	1000-			
18	Cut Stone, Cast Stone etc.				
19	Brickwork, Labor				
20	Brickwork, Material				
21	Plastering, Labor				
22	Plastering, Material				
23	Insulation				
24	Lumber and Pine Flooring				
25	Lumber, Scaffolding				
26	Oak Flooring				
27	Floor Finishing				
28	Millwork				
29	Mantels				
30	Access Doors				
31	Bowlor Stairway				
32	Kitchen Cabinets				
33	Carpentry				
34	Stair Building				
35	Common Labor				
36	Weather Stripping				
37	Fly Screens				
38	Slate Roofing				
39	Asphalt Roofing				
40	Canvas Roofing				
41	Sheet Metal				
42	Plumbing				
43	Gas Water Heaters				
44	Heating				
45	Oil Burners and Gas Burners				
46	Gas Stoves				

(These columns used for new and altered estimates that may be made on the basis of the first estimate)

The cost keeping method, illustrated and described on this and the two following pages, is based on a complete list of 81 items that includes all expenditures of any kind. This basic list is used for making estimates, and after the work starts and payments by the builder are actually being made, his cash outlays are checked against exactly the same items in his cost ledger (see opposite page).

ESTIMATE SHEET NO. 2				
(Continuation of Sheet No. 1)				
47	Incinerator			
48	Iron and Steel			
49	Steel Sash			
50	Ornamental Iron			
51	Finish Hardware			
52	Rough Hardware			
53	Painting			
54	Glass			
55	Glazing			
56	Mirrors			
57	Paper Hanging and Decorating			
58	Zemco-Lite or Whitewashing			
59	Linoleum			
60	Rubber Flooring			
61	Marble Tile Work			
62	Medicine Cabinets			
63	Electric Wiring			
64	Electric Fixtures			
65	Electric Refrigeration			
66	Cement Work			
67	Temporary Road			
68	Waterproofing and Dampproofing			
69	Calking			
70	Window Shades			
71	Superintendent			
72	Planting			
73	Advertising			
74	Compensation Insurance			
75	Fire Insurance			
76	Bond			
77	Architect Fees			
78	Selling Commission			
79	Financing Charges			
80	Reserve			
81	Walls			
82				
83				
84				
85				
86				
87				
88				
89				
90				
91				
92				

Here are the Estimate Sheets showing the list of 81 items. On this sheet, opposite each item, the builder figures the probable cost of that item for the particular job. His first estimate may have to be scaled down so other columns are provided for altered estimates, if necessary. These sheets measure 14 by 8 1/2 inches.

COST LEDGER - SHEET NO. 1

	Estimate	Nov. 30	Dec. 7	Dec. 14	Dec. 21
Survey Lot	1				
Topo Map	2				
Building Permit	3				
Water Service	4				
Gas (Cons. G. & E. Co.)	5				
sewer Permit	6				
Temporary Elec. Service	7				
Temporary Telephone	8				
Temporary Heat	9				
Removal of Trees and Clearing Site	10				
Excavation of Rough Grading	11				
Fill	12				
Foundation Drains	13				
Storm Drain Material	14				
Finished Grading	15				
Grass Seed	16				
Stonework	17	1000-	500-	750-	1000-
Cut Stone, Cast Stone etc.	18				
Brickwork, Labor	19				
Brickwork, Material	20				
Plastering, Labor	21				
Plastering, Material	22				
Insulation	23				
Lumber and Pine Flooring	24				
Lumber, Scaffolding	25				
Oak Flooring	26				
Floor Finishing	27				
Millwork	28				
Mantels	29				
Access Doors	30				
Beseler Stairway	31				
Kitchen Cabinets	32				
Carpentry	33				
Stair Building	34				
Common Labor	35				
Weather Stripping	36				
Fly Screens	37				
Slate Roofing	38				
Asphalt Roofing	39				
Canvass Roofing	40				
Sheet Metal	41				
Plumbing	42				
Gas Water Heaters	43				
Heating	44				
Oil Burners and Gas Burners	45				
Gas Stoves	46				

(In these columns, payments made by the contractor are added every week to the previous week's total for each item and the final cost is compared with the estimate for that item, shown in the estimate column)

These Cost Ledger sheets show the same list of 81 items as the estimate sheets. When a job is started, the estimate figures for that job are entered on these cost ledger sheets, item for item, from the estimate sheets. For example, stonework is estimated to cost \$1,000 and this item is entered, along with other items, in the estimate column of the cost ledger. Each item has its own number for easy reference. These sheets, when folded, measure 14 by 8 1/2 inches; unfolded, 14 by 32 1/2 inches. There are 24 columns on them.

COST LEDGER - SHEET NO. 2
(Continuation of Sheet No. 1)

	Estimate	Nov. 30	Dec. 7	Dec. 14
Incinerator	47			
Iron and Steel	48			
Steel Sash	49			
Ornamental Iron	50			
Finish Hardware	51			
Rough Hardware	52			
Painting	53			
Glass	54			
Glazing	55			
Mirrors	56			
Paper Hanging and Decorating	57			
Zeneco-Lite or Whitewashing	58			
Linoleum	59			
Rubber Flooring	60			
Marble Tile Work	61			
Medicine Cabinets	62			
Electric Wiring	63			
Electric Fixtures	64			
Electric Refrigeration	65			
Cement Work	66			
Temporary Road	67			
Waterproofing and Dampproofing	68			
Calking	69			
Window Shades	70			
Superintendent	71			
Planting	72			
Advertising	73			
Compensation Insurance	74			
Fire Insurance	75			
Bond	76			
Architect Fee	77			
Selling Commission	78			
Financing Charges	79			
Reserve	80			
Bills	81			
	82			
	83			
	84			
	85			
	86			
	87			
	88			
	89			
	90			
	91			
	92			
TOTALS				

Cash payments made by the builder during the first week are entered in the column next to the estimate column. Second week's payments are added to the first week's payments and entered in the next column and so on for each successive week, the last entry always showing what has been paid out, to date, for any one item. For example, no payment was made on stonework the first week. The second week \$500 was paid. The following week (Dec. 14 column above) \$250 was paid out, making \$750 in all. The fourth week, a final payment of \$250 was made, totaling \$1,000, the figure that was originally estimated.

Labor Costs Recorded on Individual Time Cards

C. K. Wells, Jr., Baltimore builder, keeps a close check on his labor costs at all times. Each workman carries his own card and fills out the time spent on each operation, listed and numbered on the back of his card. The foreman checks these entries and they are entered on the weekly time report at the end of the week (see blank forms below). This system not only gives the correct time

costs for each operation but provides a definite check on what the men are doing at all times. A sample card is shown, filled out by John Jones, carpenter, who worked twelve hours during the week ending December 14th. Directly beneath, is shown the back of the same card, giving the complete list of carpenter operations and their numbers.

Individual time cards measure 8 1/2 by 4 inches, and the weekly time report, to the right, measure 17 1/2 by 7 1/4 inches.

WORKMEN'S INDIVIDUAL TIME CARD
C. K. WELLS, JR. - BUILDER

Job No. 4
 Sign Name John Jones
 Week ending Dec 14 Occupation Carpenter

DAYS	HOURS	WORK DONE
FRI.	8	#8 Sheathing
SAT.	4	#3 Bridging
MON.		
TUES.		
WED.		
THUR.		
TOTAL	12	

O. K. Bill Smith, Foreman

- PAINTERS**
- 75 Priming Exterior
 - 76 Priming Interior
 - 77 Second Coat Exterior
 - 78 Second Coat Interior
 - 79 Finish Exterior
 - 80 Finish Interior
 - 81 Staining
 - 82 Water Paint Outside 1st Coat
 - 83 Water Paint Outside 2nd Coat
 - 84
 - 85
 - 86
 - 87
 - 88
 - 89
 - 90 Return to Job

- CARPENTER WORK**
- 1 Laying out Job
 - 2 Setting Floor Joists
 - 3 Bridging Floor Joists
 - 4 Laying Sub Flooring
 - 5 Setting Frames
 - 6 Framing Up
 - 7 Roof, Cutting Rafters, Setting Cornice
 - 8 Sheathing
 - 9 Studding out Partitions
 - 10 Grounding Out
 - 11 Setting Jambes (Window) (Door)
 - 12 Fitting Sash (and putting on Hardware)
 - 13 Fitting Blinds (and putting on Hardware)
 - 14 Fitting Door (and putting on Hardware)
 - 15 Trimming out
 - 16 Porch
 - 17 Miscellaneous Carpenter work
 - 18
 - 19
 - 20 Job Superintendent
 - 21 Return to Job

- LABOR**
- 50 Excavating
 - 51 Rough Grading
 - 52 Sewer Trenches
 - 53 Storm Drain Trenches
 - 54 Cellar Drains
 - 55 Concreting
 - 56 Finish Grading
 - 57 Cleaning
 - 58 Hauling
 - 59 Watchman
 - 60
 - 61
 - 62
 - 63 Return to Job

WEEKLY TIME REPORT

C. K. WELLS, Jr., Builder

Job No. _____ Week Ending Thursday

	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Total Time	Per Hour	Total Pay	NO. HOURS PAID FOR IN THIS REPORT	REMARKS
TRUCK (handling only)												
CARPENTERS												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
CARPENTER HELPERS											Carpenters Total for Week	
28												
29												
30												
31												
32												
LABORERS											Carpenters Helpers Total for Week	
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
PAINTERS											Laborers Total for Week	
47												
48												
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
Phone Calls and Expenses											Painters Total for Week	
JOB FOREMAN											Name	



One of the Newest Radiators Has Broad-faced Columns of Cast Iron

New Developments in Radiator Heating

By NORMAN J. RADDER

Plumbing and Heating Industries Bureau

THESE have been many new and important products introduced by the radiator heating industry in recent years. A more general knowledge of these new products and of the superiority of the radiator heating equipment of today over that of a decade ago should be helpful to every general contractor, realtor, speculative builder, and to the general public as well, in indicating the extent of the field for the modernizing of heating equipment.

If the average builder were asked the question, "What are the outstanding changes in heating equipment and methods of heating in the last ten years?" he would be sure to mention the use of oil and gas as fuels and possibly also refer to the tendency toward concealed radiation.

These two developments, however, interesting and revolutionary as they are, are only part of the story. Many other changes have taken place. In fact, there is hardly a product entering into a radiator heating job that hasn't been improved and redesigned. While utility and greater efficiency have been chiefly sought in the redesigning process, beauty and appearance, too, have been attained. Designers of heating equipment, particularly radiators and boilers, have heeded the advice of William Morris, who has said:

"Not only is it possible to make useful things works of art, but there is something wrong with a civilization that does not do this."

This new idea of beauty in heating equipment is important when it comes to selling a new house. A builder cannot afford to overlook it. A colorful jacketed boiler and a handsome radiator make an appeal when a new house is being inspected, and can often be the means of selling a modernizing job.

This article will touch briefly on the new developments in boilers, radiators, heating specialties, humidifiers, valves, and heat control apparatus.

First as to recent improvements in boilers. The "dolling up" of the boiler with the colorful jacket is an obvious change. However, it should be pointed out that appearance was not the chief object in the minds of the designers when a jacket was placed around the boiler. The jacket is insulation. Every builder who has been in the business a number of years remembers that formerly when a boiler was installed, the insulation was applied directly to the boiler by the heating contractor. The insulation was in the form of an asbestos cement.

While this was good enough in its time and decidedly better than no insulation at all, radiator heating engineers were not satisfied with it and experimented with various ways of introducing an air space in between the boiler itself and the insulation. The modern jacketed boiler has an air space of nearly an inch between the outside of the boiler and the insulation. The insulation itself is a two-inch layer of air cell asbestos which in turn is covered with a metal jacket. Hence, this type of insulation is not only more effective but more durable as well. In fact, the insulation will readily last the life of the boiler.

Every builder obviously should know all the selling points of his house. When discussing the heating plant with a prospect, it is always advisable to emphasize the economy, beauty, and durability of the jacket.

A number of fundamental changes have been made in boiler design. Take, for instance, the development of the square boiler. For nearly half a century the round boiler was the staple boiler of the heating in-

dustry. With the introduction of the square boiler, the builder as well as the public is offered a choice of models. Both are sectional boilers. The sections in a round boiler are piled on each other. The sections in a square boiler are added at the end. Most persons prefer a square boiler from the standpoint of appearance. It fits in well with the modern vogue for colorful and clean basements.

Boiler manufacturers, having in mind the fact that fuels are becoming more expensive, have redesigned their boilers so that they will extract every possible unit of heat from whatever fuel is used.

Built into every modern boiler is a back-and-forth fire travel that is three times as long as the boiler itself. This fire-travel is so arranged that the hot gases cannot short-circuit to the chimney or concentrate in the center flue but must reach all heat-absorbing surfaces. These surfaces are more effectively placed in the modern boiler than in the older models.

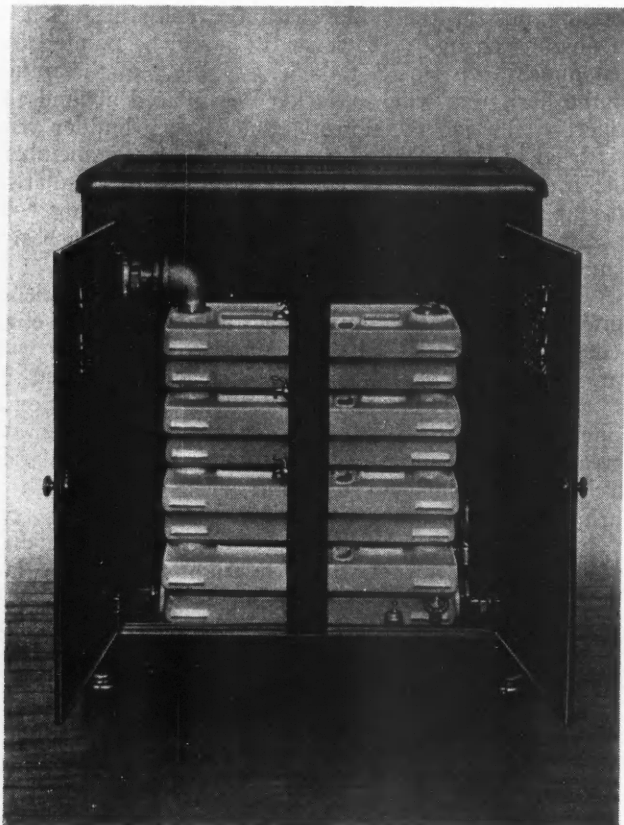
Design of the fire-pot, too, has been changed. It has been given a corrugated surface which increases its heat-absorbing power. Contacting surfaces of doors and dampers are ground smooth to prevent escape of gases and ashes as well as to prevent leakage of air which would interfere with perfect combustion control.

The fire-pot for the modern boiler is large, thus insuring easy caretaking and long firing periods. The doors, too, are larger and protected from the heat by baffle linings. A new type of handle is always cool when the fire is blazing.

Sensitive regulators provide even heat and save attention and fuel. Grates permit the use of small sizes of coal and the shaking mechanism is easily operated and sturdy and equipped with a long detachable handle which eliminates stooping.

Now as to recent changes in radiators. Three ten-

Automatic Humidifying Device to Take Place of One Radiator in a Home.



Recessed Radiator Below a Window Indicates Careful Planning.

dencies have been at work simultaneously. Exposed radiators have been beautified. Special radiators have been developed for recessing. Many advances have been made in complete concealment of radiators.

Radiators which were installed in houses up to ten years ago were unnecessarily clumsy and heavy. They were out of harmony with new ideas in furnishings and decoration. Heating engineers examined the radiator critically and from their research work was developed a radiator with slender tubes and narrow, graceful lines. This radiator is also better mechanically than its predecessors because it has a larger heating area in proportion to its size.

The slender tube radiator is manufactured in a large variety of sizes. It may be obtained as a narrow radiator with only three tubes and thus may be conveniently used in hallways or bathrooms where space is at a premium. A very popular size for residential use are the four-tube and five-tube designs. These various combinations of tube sizes may be obtained in almost any desired height from 20 inches up to 38 inches.

Another new development in the radiator heating industry is a cast-iron radiator which gives out 50 per cent of its heat by direct radiations and the other 50 per cent by convection. Direct radiation, it should be explained is the heating method of the sun or the fireplace; that is, the heat rays shoot out horizontally and warm the objects which they strike. When heat is imparted by convection, the radiator warms the air and the cool air displaces the warm air, and thus a continuous circulation of air is set up. The warm air, however, will go up and unless there is active movement of air, it will stay under the ceiling with the result that this part of the room will be the warmest space.

The advantage of a radiator giving off 50 per cent

of its heat by direct radiation is that the part of the room in which people sit and walk will get most of the heat, since the heat rays are thrown straight out from the radiator. Thus, there will be more of what might be called "usable heat."

This radiator is designed to be recessed in the wall under a window. Immediately over the radiator is a grilled window sill through which warm air is allowed to travel upward and in this way counteract the cold air coming in around the window.

The radiator is suspended from the sill and does not stand on the floor, thus allowing the free use of the broom or vacuum cleaner underneath. There is no chance for a dirt pocket under the radiator. Due to the fact that this radiator is recessed in the wall under the window, it takes up only one-third of the space of an ordinary radiator.

Easy to Keep Clean

The new type of radiator is quite different in appearance from the tubular radiator. The new radiator has broad-faced columns which form a practically continuous surface on the side of the radiator exposed to the room. Thus, it is easier to keep clean and also lends itself admirably to a decorative treatment in harmony with the walls. In fact, with a grille over it and with drapes hung at the sides, this radiator, if decorated like the walls, may be completely disguised. In a dark paneled room the radiator may be painted to match the wood exactly. The cost of this type of radiator is the same as that of standard radiation.

Various types of copper radiators are made for complete concealment in the walls. The advantage of copper, of course, is its high thermal conductivity. In addition, many kinds of radiator shields and enclosures are on the market. There is a great deal of difference in the efficiency of the various kinds of radiator enclosures. Some designs have the effect of restricting the free circulation of air around a radiator and thus increasing the fuel consumption. In the purchase of radiator enclosures as with any other item of heating equipment, it is best to deal only with a reliable and established heating contractor.

While such radical changes in the design of radiators were under way, it was only natural that engineers should turn their attention to radiator valves. The appearance of the radiator shut-off valve has been improved and a corresponding change has also been made in its construction. The modern radiator valve is of the "packless" type; that is, there is no packing in it to deteriorate and let air in the system, or to allow the escape of water or steam.

The question of humidity has received considerable attention in recent years in connection with houses.

Experiments have shown that the same degree of comfort is experienced in air at 69 degrees with a relative humidity of 50 per cent as at 72 degrees with a relative humidity of 20 per cent.

Obviously less fuel is required to produce the lower temperature with the higher relative humidity. With a lower temperature in the house, the heat loss through the crevices around the doors and windows is less than with a higher temperature with a greater differential between the inside and outside temperatures. Experiments indicate that a saving of from 5 to 10 per cent may be effected—quite a sum especially for the man who is using the relatively higher priced fuel such as gas or oil.

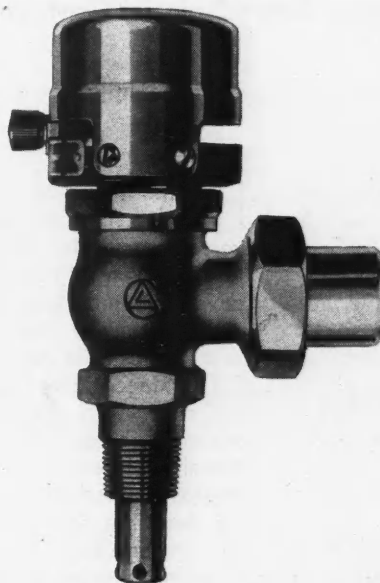
Medical authorities agree that a relative humidity of

at least 40 per cent is necessary for health under the usual conditions of artificial heating. Humidities much in excess of 50 per cent are undesirable because they will result in excessive frosting of the windows and a feeling of sultriness and stuffiness in the rooms.

For this reason it is necessary to have a humidifying device responsive to control. The radiator heating industry has given considerable study to humidification and has developed a very satisfactory method of imparting the necessary moisture to the air. This method consists of removing one radiator in a house, apartment, or office, and substituting for it a device which is both a radiator and a humidifier. In brief, the humidifier consists of a number of sections arranged horizontally and connected with the heating system like any other radiator. The sections, however, differ from radiator sections in that each is made somewhat like a pan, so that it will hold water on top. The device is connected with the water supply system of the house, and water is allowed to trickle into the top section. As this section is filled with water, it overflows to the next section below, and so on. The amount of humidity discharged into the room is obviously subjected to strict control in accordance with the heat discharge of the radiator and the amount of water allowed to drip onto the top section of the humidifier.

Thermostats More Popular

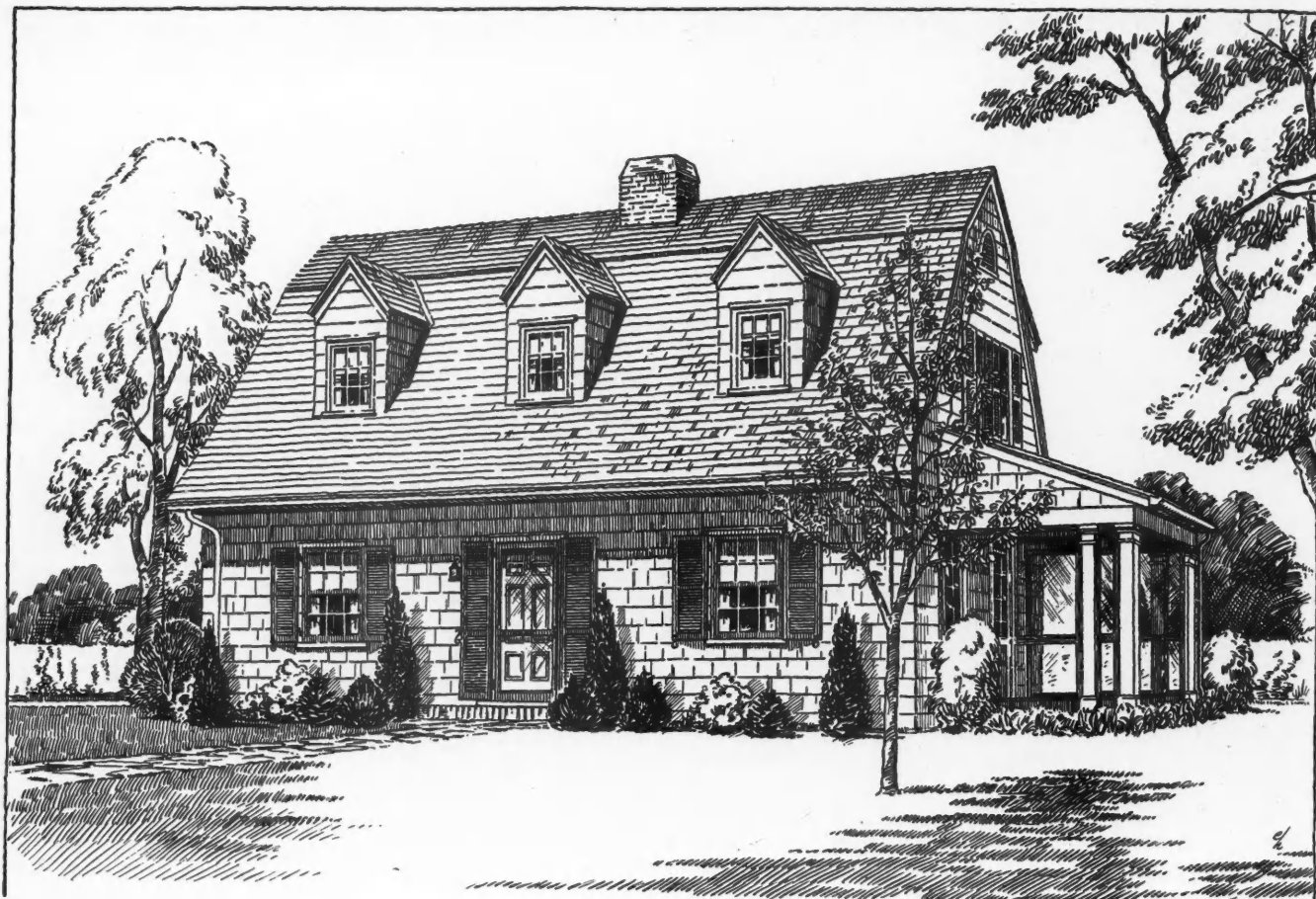
The use of oil and gas as fuels has been a tremendous stimulant to the use of thermostats controlling the output of the heating plant. Thermostats with clock movements are available in which the operation of the timing element automatically shifts the thermostat mechanism to operate on either of two temperatures for relative periods, as desired. While thermostats are almost universally used in connection with oil or gas fired boilers, it should be observed that thermostatic control of a coal fired boiler is readily accomplished by the opening and closing of drafts.



Thermostatic Device Permits Individual Control of Temperature.

One of the newest developments in heat regulation is the device variously known as radiatherm or modustat, which automatically and independently controls the steam supply for each radiator on a two-pipe steam, vapor, or vacuum system. Thus, this device permits different rooms to have varying temperatures.

In conclusion, attention should be called to other new developments in radiator heating, such as concealed valves and mechanical improvements in the valves.



THE HOUSE OF THE MONTH

An Attractive Dutch Colonial Cottage

D. WENTWORTH WRIGHT, Architect

FOR the month of March, which ushers in the spring building season in many sections, we have selected a home having a style of universal popularity. This Dutch Colonial Cottage is a gem architecturally. For most home lovers, its dormers, gambrel roof, overhanging eaves and entrance details will be instantly attractive. The interior arrangement of the rooms of this lovely cottage is another feature that makes this home unusually appealing to the average family. On the accompanying drawings showing interior layout, the reader will note, with special interest, the large master bedroom on the second floor and the presence of a downstairs lavatory, two exceptional features in a home of this size. The plans will reveal other interesting and improved modifications of the ordinary cottage plan. As desirable as this home is, its cost need not be out of reach of the average family, a fact which is especially important at this time. In order to provide our readers with complete cost figures, including variations from a single set of specifications, we are presenting for the first time in this issue three complete cost estimates of the March "House of the Month" on the following pages. In these estimates, material quantities and labor costs are shown separately so that any builder may use them as a basis for quickly figuring his own costs on this cottage.

WORKING DRAWINGS AND COST ESTIMATES ON FOLLOWING PAGES

Estimating the Cost of Our "House of the Month"

By G. William Bailey, Construction Manager, City Housing Corporation, New York

IN the following estimates, I have shown material and labor costs separately and have included many of the quantities used in figuring the various costs so that you can check me up in relation to your own local costs without much trouble. You will understand, of course, that I am compiling these figures on the basis of conditions as they exist in the suburban areas around New York and that modifications will have to be made for other areas. The estimates as they stand, however, have been figured completely and accurately throughout and represent reliable costs of the "March House of the Month." Upon

examination of the tables below, you will immediately inquire: "What do the three estimates 'A,' 'B,' and 'C' represent?" Estimate "A" represents the highest standard of construction and shows the costs as they would be on a job done by a first-class contractor-builder for an owner under the supervision of a competent architect. Estimate "B" represents the costs as they would apply to the high quality work of a reputable operative builder. Estimate "C" is introduced to show costs that are falsely economical, that apply to jerry-built construction in most of the items, and which represent cheap building practice.

	ESTIMATE "A"		ESTIMATE "B"		ESTIMATE "C"	
	Labor	Material	Labor	Material	Labor	Material
1. EXCAVATIONS						
235 CY General Earth	\$ 142.00	.....	\$ 103.00	.....	\$ 94.00	.....
20 " Pier and trench.....	15.00	.....	12.00	.....	5.00	.....
30 " Backfilling	24.00	.....	.....	.....	15.00	.....
2. CEMENT WORK						
327 CF Footings	33.00	\$ 82.00	26.00	\$ 66.00	.....	.....
1100 PCS 12" Blocks	176.00	264.00	129.00	236.00	110.00	198.00
440 " 8" "	70.00	93.00	.....	.....	44.00	70.00
46 LF Area Coping.....	5.00	9.00	.....	.....	5.00	9.00
28 " Steps	9.00	6.00	9.00	6.00	7.00	4.00
718 SF Cellar Floor.....	72.00	72.00	57.00	57.00	43.00	43.00
160 SF Rough Porch Slab.....	8.00	16.00	8.00	16.00	5.00	5.00
7 CY Firestops and Hearths.....	21.00	14.00	3.00	2.00	3.00	2.00
3. MASONRY WORK						
76 LF Brick Borders and Sills.....	38.00	20.00	.....	.....	23.00	20.00
155 SF Flagstone Paving	31.00	31.00	40.00	30.00	20.00	25.00
Brick Chimney and Fireplace.....	176.00	121.00	150.00	121.00	100.00	75.00
4. CARPENTRY AND MILLWORK						
Concrete Forms .....	.....	.....	100.00	.....	.....	.....
11600 FBM Framing and Grounds.....	348.00	348.00	348.00	290.00	186.00	233.00
5500 FBM Sheathing	138.00	138.00	138.00	121.00	60.00	80.00
18 SQS Stained Roof Shingles.....	90.00	180.00	72.00	162.00	54.00	126.00
List of Exterior Trim.....	88.00	292.00	75.00	262.00	60.00	175.00
" " Sash, Door and Frames.....	105.00	283.00	95.00	247.00	75.00	200.00
" " Rough Hardware .....	.....	66.00	.....	66.00	.....	46.00
22 SQS Stained Shingle Siding.....	88.00	242.00	66.00	220.00	55.00	132.00
List of Interior Trim and Doors.....	185.00	430.00	155.00	300.00	100.00	275.00
Stairwork	50.00	75.00	40.00	60.00	25.00	40.00
1000 SF 7/8" No. 1 Oak Flooring.....	90.00	90.00	70.00	70.00	70.00	70.00
170 SF 7/8" Rift Pine Flooring.....	9.00	17.00	9.00	17.00	9.00	17.00
5. ELECTRIC WORK						
74 Outlets. Wiring Only.....	80.00	80.00	45.00	50.00	35.00	35.00
33 Pcs. Fixture and Hanging.....	25.00	160.00	20.00	60.00	15.00	35.00
6. PLUMBING						
Piping, Fixtures and Fittings.....	250.00	363.00	200.00	325.00	150.00	260.00
Gas, Water and Sewer Connections.....	65.00	60.00	65.00	60.00	65.00	60.00
160 LF Footing Drains	80.00	80.00	.....	.....	.....	.....
7. HEATING						
Boiler, Piping and Radiation.....	150.00	300.00	125.00	238.00	100.00	175.00
Oil Burner Equipment.....	60.00	415.00	60.00	375.00	60.00	375.00
8. SHEET METAL						
Flashing and Leaders.....	48.00	80.00	48.00	80.00	26.00	54.00
9. LATHING AND PLASTERING						
20 SY Scratch Coat on Wire.....	13.00	9.00	12.00	8.00	10.00	6.00
610 SY 3-coat Plaster on Wood.....	395.00	275.00	335.00	275.00	275.00	175.00
240 LF Kornerite	10.00	5.00	10.00	5.00	.....	.....
10. TILEWORK						
.....	100.00	125.00	70.00	90.00	50.00	75.00
11. PAINTING AND DECORATING						
.....	300.00	160.00	300.00	160.00	170.00	105.00
12. EQUIPMENT						
Screens	39.00	171.00	20.00	91.00	15.00	80.00
Weatherstripping	32.00	32.00	21.00	21.00	21.00	21.00
Medicine Cabinets	2.00	24.00	2.00	20.00	2.00	20.00
Built-in Ironing Board.....	1.00	9.00	1.00	7.00	1.00	7.00
List of Finished Hardware.....	.....	100.00	.....	65.00	.....	35.00
Gas Range .....	.....	50.00	.....	50.00	.....	35.00
Refrigerator .....	.....	325.00	.....	275.00	.....	275.00
Shower Curtain .....	.....	15.00	.....	10.00	.....	5.00
Window Shades	5.00	20.00	5.00	10.00	5.00	10.00
Kitchen Linoleum	15.00	35.00	10.00	30.00	10.00	20.00
TOTALS	\$3,681.00	\$5,782.00	\$3,054.00	\$4,654.00	\$2,178.00	\$3,708.00
		3,681.00		3,054.00		2,178.00
TOTAL—Labor and Material		\$9,463.00		\$7,708.00		\$5,886.00
Approximate Cubic Footage: 25,400 cu. ft.						
Cost Per Cubic Foot.....		.38		.31		.23

Variation in Specifications Accounts for Differences in Costs (Stated on Page 49)

If the "House of the Month" is constructed according to Specification "A" or "B" it will be a joy to its occupants and a source of pride to its builder for years.

SPECIFICATIONS FOR ESTIMATE "A"

- EXCAVATION:** Earth assumed—6'6" deep.
- FOUNDATION:** 12" Concrete blocks. 12" poured concrete footings. Blocks waterproofed outside with mastic trowel coat and inside with hydrolithic cement full height. Basement frames and sills pointed and caulked.
- FRAMING:** 4"x6" Sills and corner posts. Exterior and interior 2"x4" studs, 16" centers, doubled around all openings, bridged at least once in height and firestopped at 1st and 2nd floor levels. 6"x3" Y.P. girders. 2"x10" 1st and 2nd floor joists double bridged with 1 1/4"x3". 2"x8" second floor ceiling beams 16" centers and bridged. 2"x8" roof rafters 16" centers framed to 2" ridges and collar beamed. All trim throughout grounded.
- EXTERIOR WALLS:** 24" first quality red cedar shingles dipped in creosote stain to paint, laid 10" to weather. Lapped waterproof paper over 7/8"x8" N.C. pine shiplap siding laid diagonally.
- ROOFING:** 18" first quality red cedar shingles dipped in green creosote stain laid 4 1/2" to weather over 1"x2" lath.
- GUTTERS, LEADERS AND FLASHINGS:** Cypress gutters. 16 oz. copper leaders and flashings at chimneys, over louvre frames, valleys, steps, pans at dormer windows and base flashings at overhangs and porch.
- FLOORING:** All rooms and closets 7/8" clear No. 1 oak strip floorings laid over full 7/8"x6" square edged N. C. pine, lining floor laid diagonally. Rosin sized paper between flooring. Kitchen floor "A" grade inlaid linoleum over 7/8" rift pine.
- EXTERIOR TRIM:** Cypress or best quality clear white pine.
- INTERIOR FINISH:** Knotty pine or chestnut trim natural finish, in living room, entrance hall and dining room. Doors to match. White wood trim in all other rooms with birch 6-panel doors stained or painted.
- PLUMBING:** 54" double porcelain wash tray in cellar with connections for water and drainage for washing machine.

Stainless colored plumbing fixtures with chromium plated fittings. Storage gas water heater—30 gallon capacity, connected to indirect heater for winter use. Shut-off valves on all fixtures and risers. Outside hose bibs.

HEATING: Hot water system. Oil burning boiler with oil burner—275-gallon inside tank equipment.

ELECTRIC WORK: Bx armored cable oversized house service, door bells, two radio outlets with built-in aerial.

EXTERIOR PAINTING: Three (3) coats of genuine lead and pure linseed oil. Shingles painted dull white—shutters, dark green.

DECORATING: Woodwork in living room, entrance hall and dining room finished natural and waxed. Three (3) coats oil paint and enamel finish on whitewood trim in other rooms. White coat plaster in all rooms painted 3 coats lead and oil paint stippled or wall papered. Ceilings kalsomined. Oak floors to receive 3 coats floor wax.

LAVATORY: Two-toned colored faience tile floor and base. White coat plastered walls painted or papered in washable fabric.

BATHROOM: Two-toned colored faience tile floor and wainscot 4'0" high—6'6" high over tub. Plastered walls over tile enameled, painted or papered in washable fabric. Ceiling enamel painted.

BASEMENT: Floor and walls and all piping painted.

EQUIPMENT: 1 1/8" cypress screens, bronze copper or aluminum wire for all sash, doors and porch enclosure. All windows and doors weather-stripped. Wide brass saddles for exterior doors.

ALTERNATES: 4" thick asbestos fill insulation in all exterior walls and between attic space and second floor will cost \$300.00 additional to estimates.

Two (2) coats plaster on insulating lath in place of three (3) coats plaster on spruce lath will cost \$100.00 additional to estimates.

SPECIFICATION VARIATION FOR ESTIMATE "B"

(Note: Many savings in Estimate "B" were effected through quantity purchase and reduction in labor costs by large scale operating methods.)

FOUNDATION: 10" poured concrete foundation against natural earth. 8" poured concrete footings. Foundation walls waterproofed on inside only with hydrolithic cement. 4" monolithic concrete cellar floor. Brick edging omitted and flagstone laid full width of porches and hearth.

FRAMING: Firestopping omitted.

FLOORING: No. 3 oak flooring selected for color.

HEATING: One-pipe low pressure steam system with balanced oversized piping with large air vents on headers and wet returns.

ELECTRIC WORK: Based on 47 outlets and fewer fixtures.

EQUIPMENT: Porch enclosure screens omitted. Narrow brass saddles for exterior doors.

SPECIFICATION VARIATION FOR ESTIMATE "C"

(Note: This specification is not recommended. It is shown here to indicate how the variation in cost for estimate "C" was achieved—at the sacrifice of quality in many parts of the house. Many of the items in this specification endanger the basic structure of the house and cannot be justified.)

FOUNDATION: 8" concrete blocks. No footings.

FRAMING: Framing lumber sizes reduced, overspaced, carelessly framed and nailed. No exterior walls or partitions bridged. Second floor ceiling beams not bridged. Roof rafters not collared. Ridges, 1" boards.

EXTERIOR WALLS: Poor quality undipped shingles with cheap building paper over shiplap laid horizontally.

ROOFING: Poor quality undipped shingles, overspaced and poorly nailed.

GUTTERS, LEADERS AND FLASHINGS: Fir gutters, 16 oz. copper leaders and flashings only at chimney, steps and where generally exposed to view.

FLOORING: No. 3 oak strip flooring laid over 7/8" square edge N. C. pine lining. Floor laid horizontally for first floor. Single floor for second floor. No paper between

flooring. Kitchen floor, "B" quality linoleum over single rough flooring.

INTERIOR AND EXTERIOR TRIM: Poor quality and details carelessly carried out. Fir doors. Laid-on 2 coat plaster—poor materials and careless workmanship.

PLUMBING: Small cement wash trays. No floor drains. Cheap flashy chromium plated fittings. Cheap 20-gallon capacity storage hot water heater. No shut-off valves on fixtures or risers. Small size water supply piping.

HEATING: Inadequate and cheap speculative boiler. Inadequate radiation. Small piping, no air vents on headers and no wet returns. Covering omitted on concealed risers.

ELECTRIC WORK: Based on 27 outlets. Inadequate house service. No radio outlets or built-in aerial. Cheap stock fixtures.

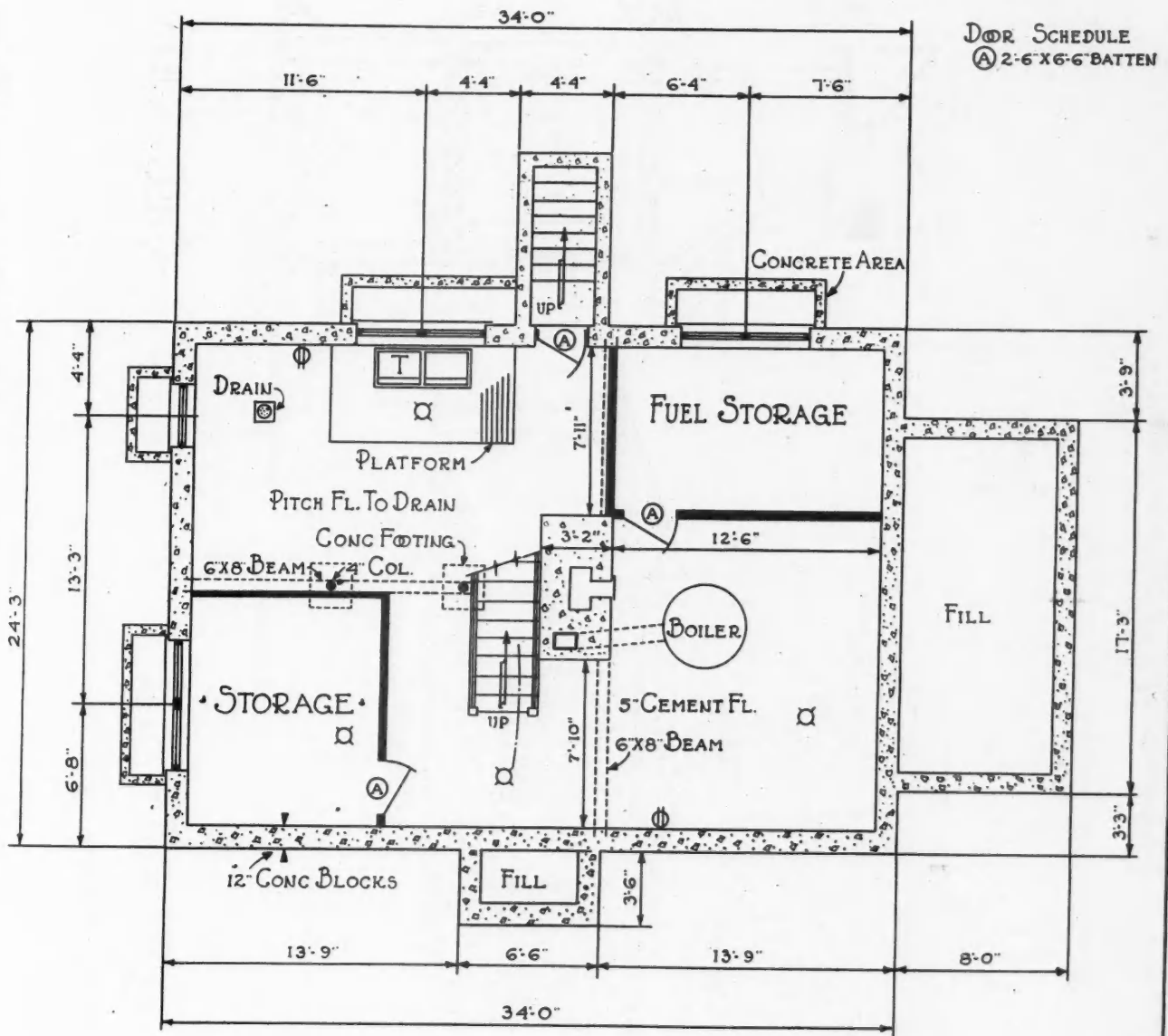
EXTERIOR PAINTING: Two (2) coats of cheap paint.

DECORATING: Two (2) coats of cheap paint and enamel on trim and walls or cheap plastic finish for walls.

LAVATORY AND BATHROOM: Colored tile of inferior quality over wood lath and scratch coat plaster.

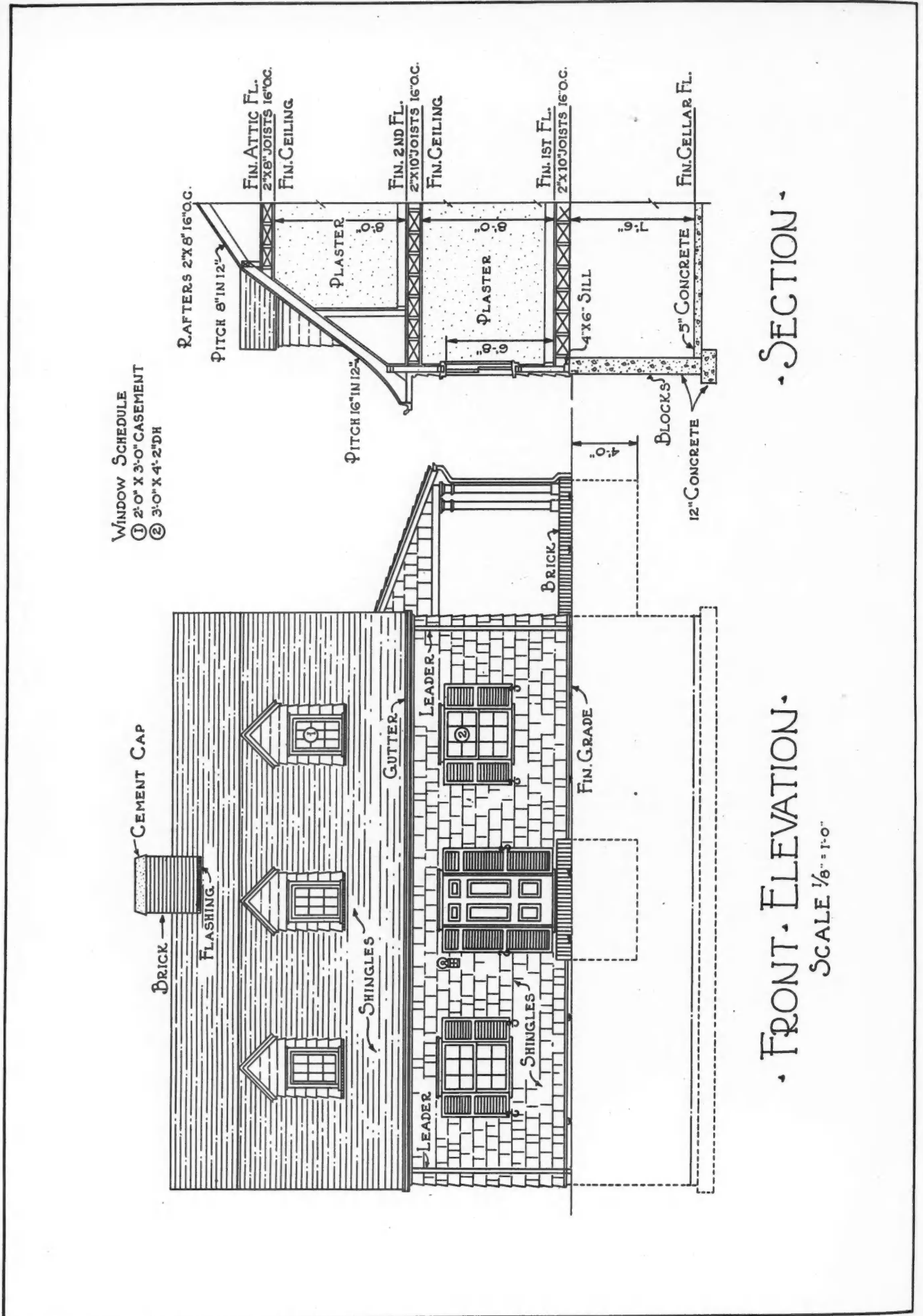
BASEMENT: Floors and walls not painted.

EQUIPMENT: 7/8" white pine screens. Porch not enclosed. Narrow brass saddles for exterior doors.



CELLAR PLAN
 SCALE 1/8" = 1'-0"

Adequate Electric Equipment Has Been Provided All Through This House. Note the washing machine plug near laundry tubs in this basement plan. Drawings by Polak and Sullivan, Architects.



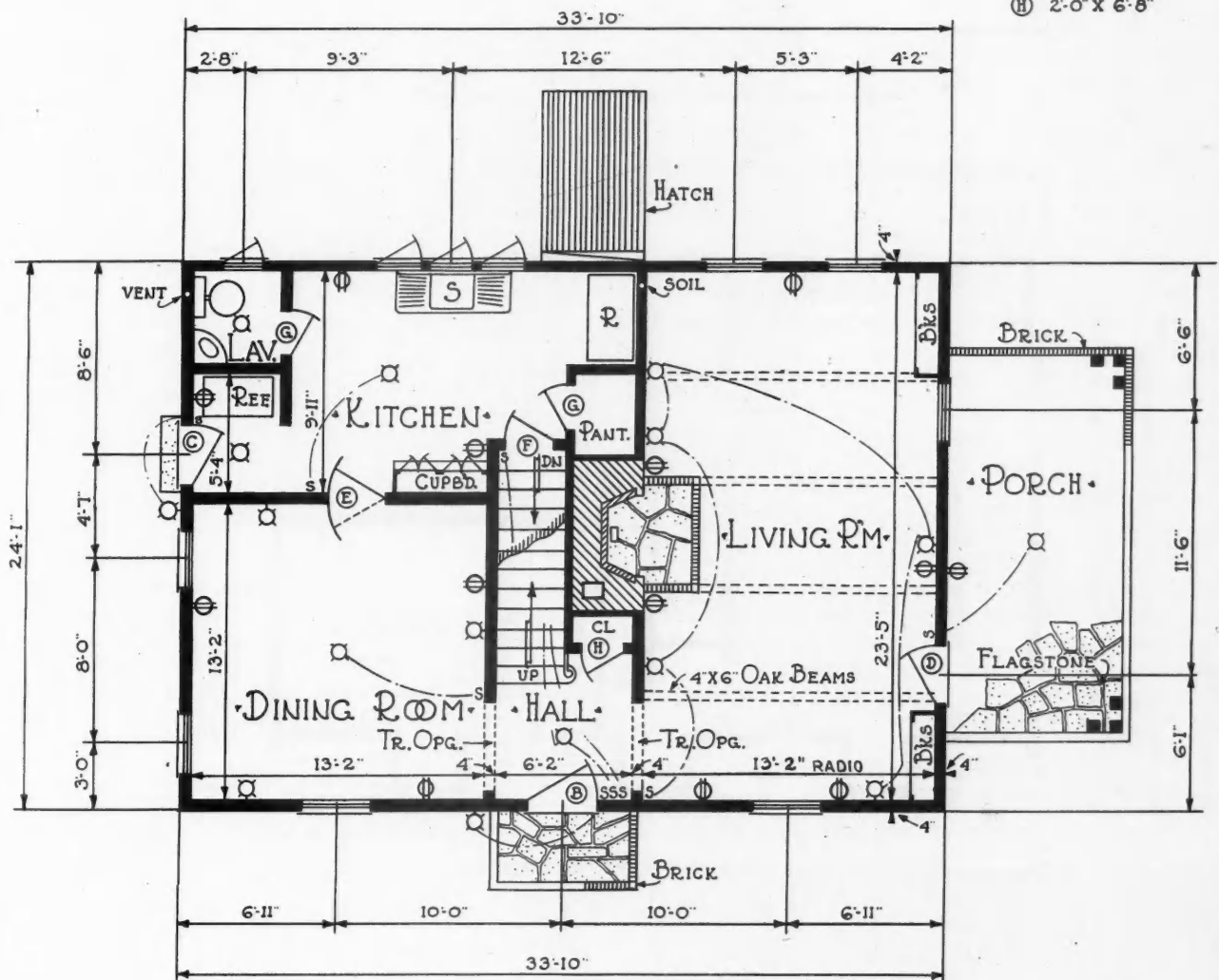
SECTION

FRONT ELEVATION
 SCALE 1/8" = 1'-0"

This Drawing Shows the Dormers and Entrance Detail of the March "House of the Month" and Shows Ceiling Heights in Section Drawings. Drawings by Polak and Sullivan, Architects.

DOOR SCHEDULE

- (B) 3'-0" X 6'-8"
- (C) 2'-6" X 6'-8" GL.
- (D) 2'-6" X 6'-8" GL.
- (E) 2'-6" X 6'-8" DS.
- (F) 2'-6" X 6'-8"
- (G) 2'-2" X 6'-8"
- (H) 2'-0" X 6'-8"



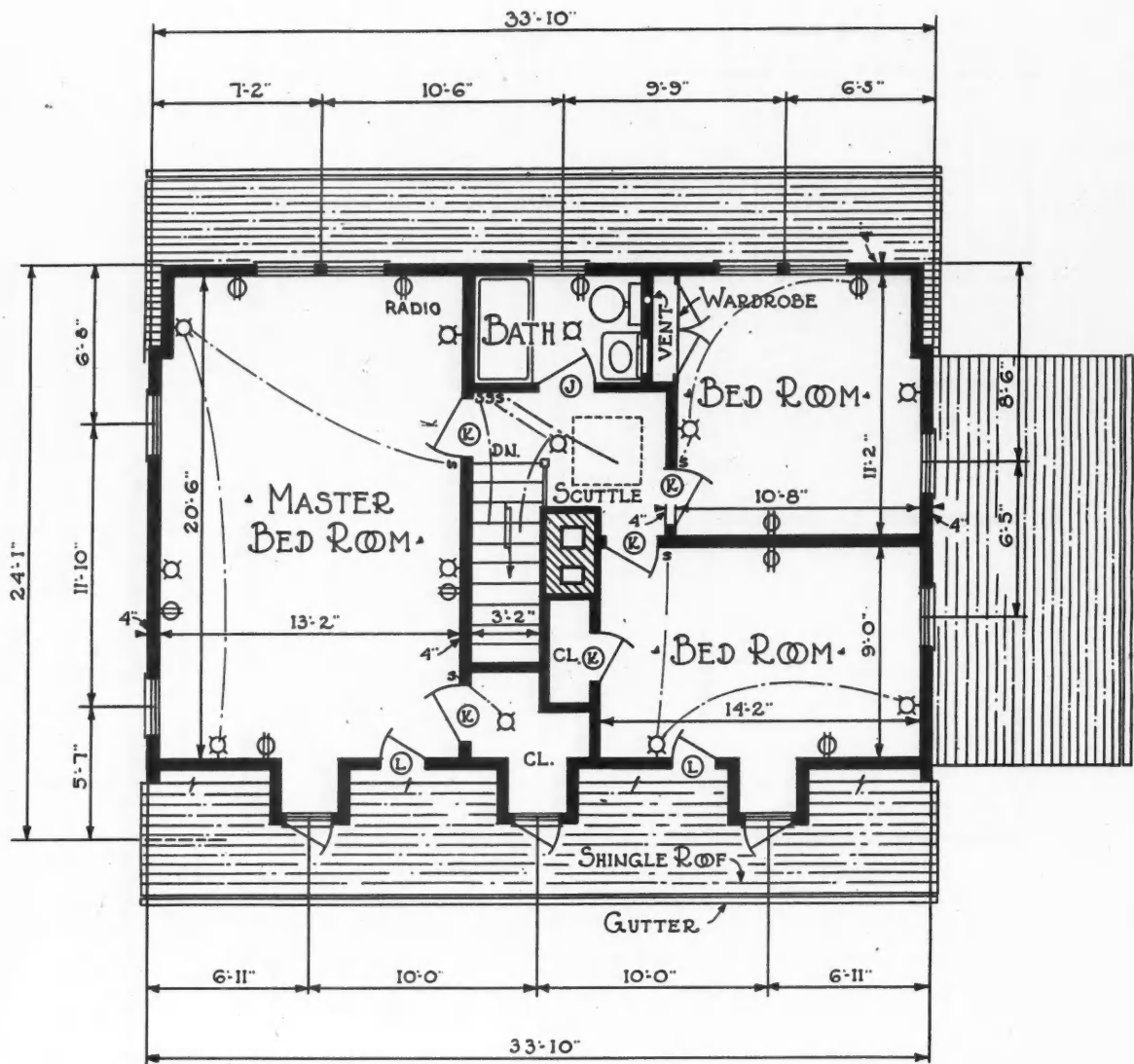
NOTE: ALL FRAME DIMENSIONS FIRST & SECOND FLOORS TAKEN TO STUD LINES

FIRST FLOOR PLAN
SCALE 1/8" = 1'-0"

The First Floor of the March "House of the Month" is cleverly arranged, providing for a large living room and a downstairs lavatory. Drawings by Polak and Sullivan, Architects.

DOOR SCHEDULE

- Ⓝ 2'-4" X 6'-8"
- Ⓚ 2'-6" X 6'-8"
- Ⓛ 2'-0" X 5'-6"



SECOND FLOOR PLAN
SCALE 1/8" = 1'-0"

Three Bedrooms Are Provided on the Second Floor of This Dutch Colonial Cottage, One of Them a Commodious Master's Bedroom. Drawings by Polak and Sullivan, Architects.

Products That Improve Building

New Equipment and Materials Are Designed to Simplify the Builder's Work and Produce Better Buildings at Lower Cost



With This Combination Woodworker Any Woodworking Operation Can Be Performed by Shifting from One Unit to Another, a Simple, Easy Change Which Does Not Interfere with Rapid, Low-Cost Production, as Demonstrated by Martin & Sons, of Wilkes-Barre, Pa., Whose Shop Is Illustrated Here.

TWO things, cost reduction and a means of filling in work during slack times, are of utmost importance to the builder if he is to operate profitably. Many of the more recent developments announced by manufacturers of buildings contribute to these ends and are particularly worthy of note. Outstanding among these is a combination woodworker which has proven its worth in actual use.

Woodworker Is Big Producer

The illustration above shows this combination woodworker in use in the shop of Martin & Sons, Wilkes-Barre, Pa. The cabinet, shown at the left of the machine, was made on it and all of the units of the machine were used in its construction. Because of the simplicity of shifting from one unit to another the work could be done rapidly and economically. Mr. T. L. Martin, of Martin & Sons states:

"We find the woodworker just what we want for our work, so easy to change from one machine to another, and can recommend same to any one in our line of business. If the photograph had been taken about a week before we could have shown a large display of work done on the machine. We just shipped two truck loads of doors, windows, shelving, etc."

With such a woodworker as this, the builder can turn out work for his jobs at a low cost and, when building is slack, he can utilize it to prepare material for jobs ahead, and to make cabinets, screens and similar work which is salable even during slack building seasons. In fact this special work can be developed into quite a sizable business in itself, one which produces a most satisfactory profit on a small investment.

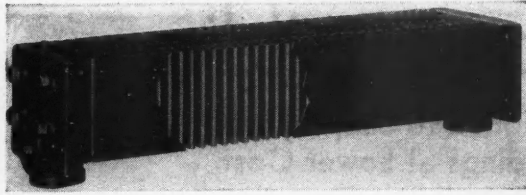
For Vibrating Concrete

Another new piece of equipment, which both cuts labor cost and produces better work, is a portable electric vibrating hammer for vibrating concrete. This tool comes in two models, a light model, weighing 11 pounds for vibrating forms of light planking, and a 16-pound model for vibrating heavy reinforcing bars and form work made of heavy planking.

These hammers are simple in design, consisting of two electro magnets wound around a hollow barrel, reciprocating



This Vibrator, Which Can Be Operated All Day by One Man, Without Fatigue, Is a Valuable Piece of Equipment in Producing High Grade Concrete.



A New Type of Concealed Radiator with Wide Spaced Flue Sections Which Prevent the Accumulation of Dust That Would Reduce Heating Efficiency, Lends Itself to the Inconspicuous Type of Installation Which Is Winning Widespread Favor for Concealed Radiation.



a free-moving piston back and forth. This strikes the vibrating tool directly on the shank and imparts 3,600 vibrations per minute. The operator simply holds the tool against the form where the concrete is being poured and moves it around following the flow of concrete. As shown in the illustration it can also be used for vibrating the reinforcing bars.

Both of these models operate from the ordinary 110-volt lighting circuit and can be used continuously all day, by one man, without fatigue. They represent the height of simplicity in a portable electric tool having only one moving part, and containing no motors, gears, bearings or other parts to wear, break or require special lubrication.

The New Concealed Radiator

Not all of the outstanding new products are in the line of working equipment for the builder. One of the important late announcements comes from one of the largest manufacturers of heating equipment and deals with a new concealed radiation unit.

This company points out that in the field of non-ferrous,

concealed radiation, it is possible to stress and develop the factor of space saving to a point where the fins are so close together that the cleaning of the intervening spaces becomes practically impossible. This results in an accumulation of dust around the fins which impairs the efficiency of the radiator and generates odorous gas which are disagreeable if not actually injurious to health.

Instead of the close fin construction, this new radiator is designed with open flues which lessen the tendency to dirt accumulation and make cleaning more practical. There are three flues per inch of space, and this wider spacing, combined with the new oval shape tubes to which the flues are joined, is said to create a most desirable self-cleaning effect. It is claimed that the heat output, per inch of length, of this radiator is extremely high.

The construction of the new radiator, as well as the complete installation, is illustrated at the top of the page.

Now a Musical Fireplace

The fireplace has long been a recognized symbol of the home, but modern apartment dwellers are, as a rule forced to forego its charms because of the limitations of apartment construction. Of course the fireplace heat is no longer required, with modern heating systems. It is the warm glow which creates a cheery atmosphere that is really wanted these days.

This element of the fireplace is now available to any and all. A portable fireplace has been perfected which can be purchased by anyone and installed by merely placing it against the wall, like any other piece of furniture. It is built entirely of wood and weighs 60 to 70 pounds, making it easy to handle.

Of course, this fireplace does not supply heat but it is highly decorative and with an electric log or coal grate in operation it successfully creates the desired atmosphere and forms a center for the family gathering.

The mantel is finished in antique ivory and the firebox is dull black. The front facing and hearth have a black and gold marbled finish. The shelf is 52 inches wide and 42 inches high, while the body width is 48 inches. The entire fireplace projects only 12½ inches, with an additional 11½ inches for the hearth.

In addition to the electrical element which lights the natural birch logs, producing a perfect simulation of flames, this fireplace is also provided with a radio, concealed within it, so that the owner may sit before his own fireplace and listen to the finest entertainment.



In Reality a Handsome Piece of Furniture, This Portable Fireplace Can Be Placed Even in the Small Apartment to Afford a Real Fireplace Effect.

Ceramic Tile Setting Is Simplified

PERHAPS the most outstanding announcement in regard to building materials and their application, which has been made for some time, relates to the setting of ceramic tile. This method of tile setting is actually revolutionary for the industry and is more than likely to increase the market for ceramic tile many times over, because of the fact that it reduces the cost and places this formerly rather expensive material within the reach of any home owner.

In the past, most of the cost of ceramic tile has been in the labor of setting. This labor cost has been estimated as being as much as three times the price of the materials, tile and cement. Utilizing the new method of tile setting, the labor cost is reduced to a fraction of what it was by the old method.

This method of tile setting involves the use of a specially designed metal lath. The lath, which is in reality simply a sheet of metal, is punched to form fingers which protrude in parallel rows, both vertically and horizontally. These fingers act as clamps into which the tile are snapped by the workman. Placing the tile simply means pushing it into place between the finger-like clamps.

Before placing, each tile is lightly buttered on the back with mortar. After placing, the spaces between the tile are filled with mortar, and when this pointing up is completed the appearance is the same as that of tile set by the old method. The results obtained, however, are not the same but decidedly better.

By referring to the drawing, at the bottom of the page, it will be seen that, in addition to the finger-like clamps, there are also projecting pieces of the metal which serve as cushions. When the tile has been placed it can be trued up perfectly by means of a straight-edge and hammer. This is possible because of the metal cushions and the fact that the excess mortar is squeezed through to take up unevenness in the wall surface.

Because of this it is possible to apply tile by this method to old walls without removing the plaster or other



With a Straight-edge and Hammer It Is a Simple Matter to True up Tile Which Is Set by This New Method.

The Ceramic Tile Industry Gets a New Lease of Life from This Cost Cutting Installation Method.

wall finish. The metal lath is simply nailed to the existing wall and the tile setting proceeds. It can readily be seen that this is particularly advantageous in remodeling work, as the labor cost of removing plaster is eliminated as well as the mess of such work.

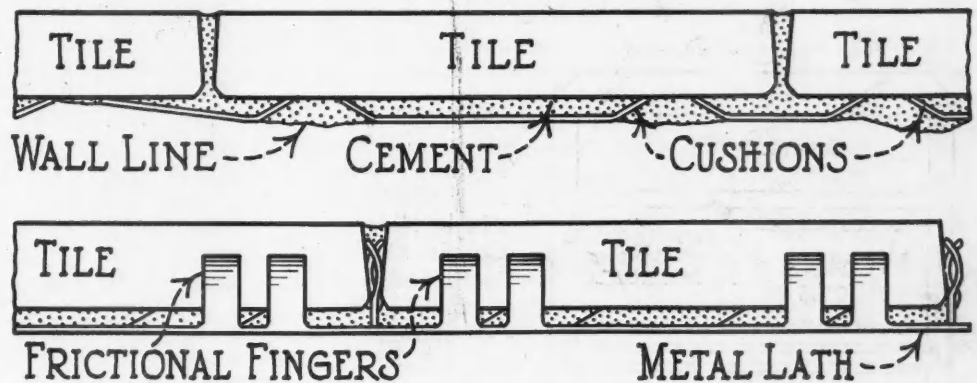
In new construction, the metal lath is nailed directly to the studs, a closer stud spacing than usual being recommended, or to a sheathing which has been placed over the studs.

Where tile floors are desired, the metal lath is nailed to the floor, the cement is applied to the lath and the tile setting proceeds as with the walls. A board is then laid across the floor with a spirit level on it and the floor is leveled by pounding where necessary.

The use of this method of tile setting prevents any moisture in the cement from warping the woodwork of the interior walls, which is one of the things which causes costly damage to tile walls under the old method of setting. In fact, with this method, cracking of tile is

practically eliminated because the metal lath base is sufficiently rigid to prevent shrinkage, swelling, and settling of the building from affecting the tile. Since the finger-like clamps which hold the tile are firmly embedded in the cement, the tile is rigidly secured to the metal lath, and can crack only if the latter is distorted.

For further information on any of the products mentioned on these pages write American Builder and Building Age, Information Exchange, 105 W. Adams St., Chicago.



A Piece of Sheet Metal, Punched to Form Cushions and Frictional Fingers to Hold the Tile, Forms the Basis of This New Method Which Reduces the Labor Cost of Tile Setting and Places Ceramic Tile Within the Reach of All.



Turn on the Heat, or Turn on the Cold! This air conditioning unit does both, and to complete its responsibility of supplying perfect indoor weather the year round, it keeps Old Man Humidity on the run in the hot and sultry seasons.

Indoor Comfort in Any Weather

New Unit Cools, Heats, Dries or Humidifies Air as Desired

ENTRANCE of a pioneer electric refrigeration concern into the air conditioning field was announced at the recent Cleveland convention of the Heating and Ventilating Engineers. A diversified line of individual unit-type conditioners suitable for commercial establishments, offices, restaurants, shops, private residences, apartments and hospitals was displayed.

These air conditioners are small and compact. In them, provision is made to heat, cool and cleanse the air. The equipment will lower the relative humidity on hot, sultry days, and in winter, when the heated air becomes dry, will add moisture. Enclosed in a walnut or mahogany cover adapted to modern home and office furnishings, these units may be installed in place of the conventional hot water, steam or vapor radiator.

The field of air conditioning is one of infinite possibilities for service, in bringing better living and working conditions within the reach of many, E. G. Biechler, president of the company, said.

"In the field of cooling we are introducing a new product

which will replace nothing now in use, but creates a virgin field for employment in manufacture, sales and installation. Air conditioning fills a major desire of humanity—comfort. It makes for increased personal efficiency, adds to home content and physical well-being."

These air conditioners are similar in size to the conventional radiator of modern design and consist of a refrigerant laden cooling coil, fans for deflection and diffusion of the air, moisture controlling features and a heating coil to be connected with the customer's own hot water, steam or vapor heating plant.

In most instances, the compressor unit will be placed in the basement or an adjacent closet.

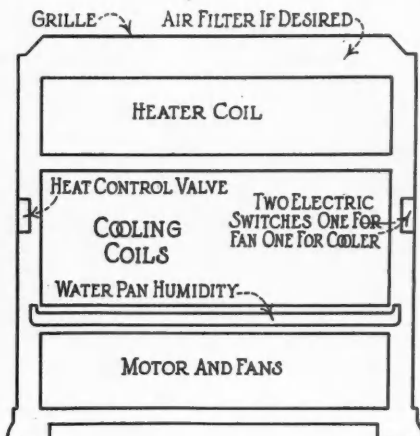
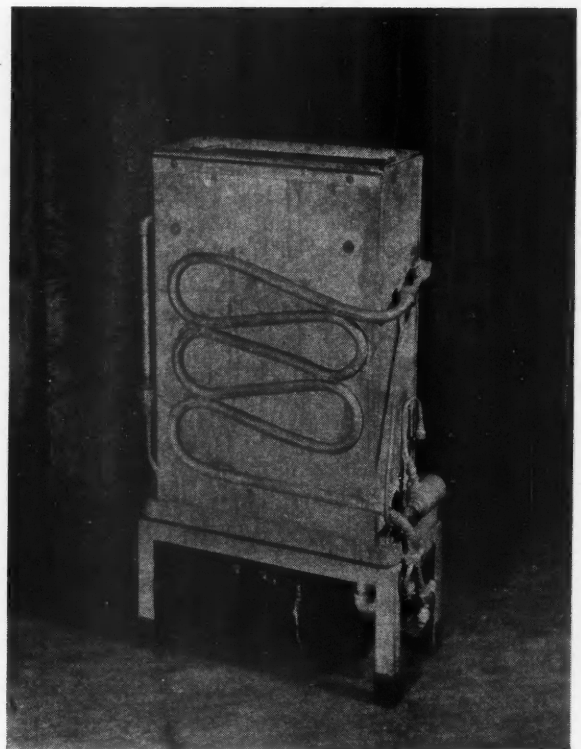


Diagram Shows Arrangements Inside New Air Conditioner, Photographed with Cabinet Removed.



Master Specifications for Good Carpentry Construction*

(concluded)

(Continued from February issue)

(10b) Studding at Stair Wells—Carry all studding for stair wells continuously from First Story to Top Story ceiling. Let in a ribband to support joists at floors and construct as specified for Balloon Outside Wall Construction.

Note: This prevents the bulging and cracking of plaster, usually encountered in open stair wells at the second and third floor levels due to shrinkage of floor joists, plates, etc.

(10c) Framing Around Openings—Framing around all openings shall be as specified for studding in outside walls.

Allow (3 in.) (specify) in width and (2½ in.) (specify) in height over the figured door size for rough framing.

(10d) Sliding Door Partitions—Notch the studs on the inside 1 in. and set in a spreader of size detailed and located to take the door tracks and hangers specified. Furnish 2 in. thick plank to terminate the vertical end of pocket, allowing at least 2 in. clearance at back of door. Line pockets, both sides with (¾ in. ceiling) (specify). Erect in accordance with the manufacturer's details and printed directions, the specified tracks, hangers, etc.

(10e) Miscellaneous—

Note: Here include any special items, such as special partition construction for accordion partitions, etc.

(13) Rafters

(13a) Flat Roofs—All low-pitch flat roofs, decks, etc., shall be constructed and bridged in exact accordance with the specification for floor joists.

(13b) Sloped Roofs—

(13b1) All rafters shall be notched or beveled so as to secure a bearing of not less than 3 in. on the wall plate and shall be toe-nailed securely to the plate with two 10 penny nails on each side. If set against the attic joists, they shall be nailed to the joists with two 16 penny nails in addition to the plate nailing.

(13b2) All rafters shall be cut and beveled so as to fit tightly against all (ride) (hip) (and) (valley) rafters and shall be nailed securely to them with four 8 penny nails.

(13b3) (Except on hipped roofs) collar ties of same size material as the regular rafters shall be nailed to each pair of rafters as near half way up from the plate as is possible.

(13b4) Where due to lack of headroom, collar ties must be omitted, nail 1x4 in. or 1x6 in. ties to the underside of rafters on both slopes extending from the center of the ridge diagonally to the corners of the building.

Note: A portion only of the strengthening effect of collar ties is obtained by this method.

(13b5) Where heavy wind or snow loads are prevalent and when attic is not used for living quarters, the roof shall be strengthened with braces set at an angle to the rafters and about four feet apart extending from top of partitions preferably up to rafters near center of span. Braces shall be notched over a 2x4 in. member set on edge extending the full length of the roof section and nailed against the under side of the rafters.

(13c) Framing Around Openings—Rafters shall be doubled on each side of (dormers) (chimneys) (scuttles) (skylights) (specify) etc., and double headers shall be used around all openings where one or more of the regular rafters have been cut away.

All headers and double trimmers shall be nailed together with 16 penny nails staggered and spaced 20 in. apart along both edges.

(13d) Miscellaneous—

Note: Here include any special structural features not ordinarily encountered, but necessary in the particular work.

(14) Stair Construction

(14a) General—(Strings) (carriages) shall be adequately supported at floors and landings. At all floors provide a 2x4 in. kick-plate at right angles to the stair run to take the thrust of the (strings) (carriages). Notch the (strings) (carriages) over

kick-plates at floors and ledger strips or trimmers at landings and receiving floors and securely toe-nail each to these supports.

Note: See Fig. 30.

(14b) Landings—Landings shall be framed with double trimmers and in all respects as specified for joists. Securely support landings on walls or partitions and brace and bridge against thrust. At the upper ends of stair runs provide a 1x2 in. ledger strip to receive stair strings or carriages.

(14c) Strings—Cut solid strings accurately to the pitch, rise and run of risers and treads. Provide (3) (specify) strings to each run.

Note: Omit (14c) if carriages are used.

(14d) Carriages—Carriages, (3) (specify) to each run, shall be built up of 2 in. thick stock on edge to the required dimension. Members shall be secured together with 16 penny nails staggered and spaced 16 in. apart along both top and bottom edges. Set carriages accurately to the stair run and pitch. Fit 2 in. thick triangular blocks, cut from joist lumber to the rise and tread, on the center of each carriage accurately in line. Toe-nail each block to the carriage.

Note: Omit (14d) if strings are used.

(15) Sub-flooring

(15a) Except as hereinafter noted, all sub-flooring shall be laid diagonally at approximately 45° with the boards of alternate stories run at right angles to those above and below.

(15b) All sub-flooring shall be fitted tightly together and nailed to each bearing with 8 penny nails, two to each board 4 or 6 in. wide, three to each board 8 in. wide and four to each board 10 or 12 in. wide.

(15c) All joints shall be broken and made directly over the center of a joist, unless end matched material is used, when the joint may occur over or between the joists, provided the joints in two adjacent boards do not occur over the same joist or between the same two joists.

(15d) Except as hereinafter noted, the sub-flooring shall be continuous across the building. Where bearing partition studs extend below the top of the floor joist, the sub-flooring shall be cut to fit around each stud with the ends supported on cleats.

(15e) At the outside walls the sub-flooring shall extend to the outside face of studs where box sill or platform frame is used, otherwise the sub-flooring shall extend to the inside face of studs.

(15f) In (bathrooms) (kitchens) (vestibules) (specify) where there is a (tile) (marble) (specify) or similar floor laid over wood joists cut in the rough flooring between the joists and secure to ledger plates to provide for a reinforced concrete bed.

(16) Wall Sheathing

(16a) All sheathing shall be applied diagonally at approximately 45°, with all boards on each side of the building running in the same direction.

Note: Diagonal sheathing is strongly recommended due to its greater bracing strength. See Fig. 32. However, where exterior stucco is applied, horizontal sheathing should always be used.

(16b) All sheathing shall be applied horizontally.

Note: Wherever used, wind bracing as specified in (9c2) and (9c3) should always be included. See Figs. 31 and 33.

(16c) All sheathing shall be tightly fitted together and nailed to each bearing with 8 penny nails, two to each board 6 in. wide, three to each board 8 in. wide and four to each board 10 or 12 in. wide.

(16d) All joints shall be broken and made directly over the center of a stud, unless end matched material is used, when the joint may occur over or between the studs, provided the joints in two adjacent boards do not occur over the same stud or between the same two studs. No joint shall occur directly at the top or bottom of an opening.

(16e) The boards directly at the top and bottom of all openings shall continue to at least the second stud on each side of the opening.

*As developed by architects and engineers for the Weyerhaeuser Forest Products Organization, St. Paul, and published in a new manual entitled "Standard Specifications for House Framing." The first parts of these specifications were presented in our January and February issues. In reproducing these we have omitted the Weyerhaeuser recommendations as to grade, species and qualities of materials.—Editor.

STANDARD DETAILS FOR HOUSE FRAMING

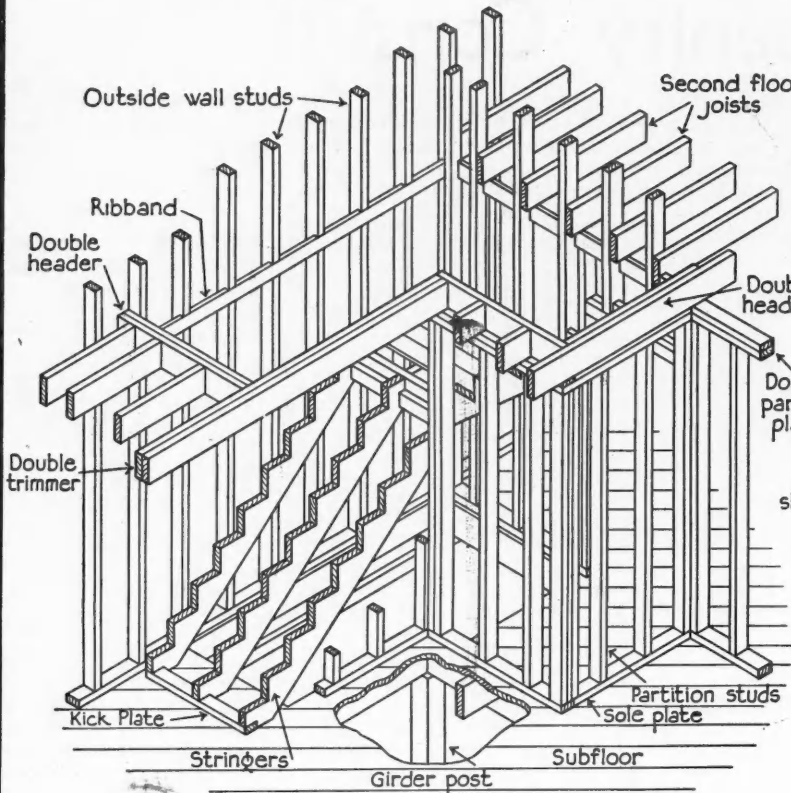


FIG. 30 FRAMING FOR OPEN STAIRWAY

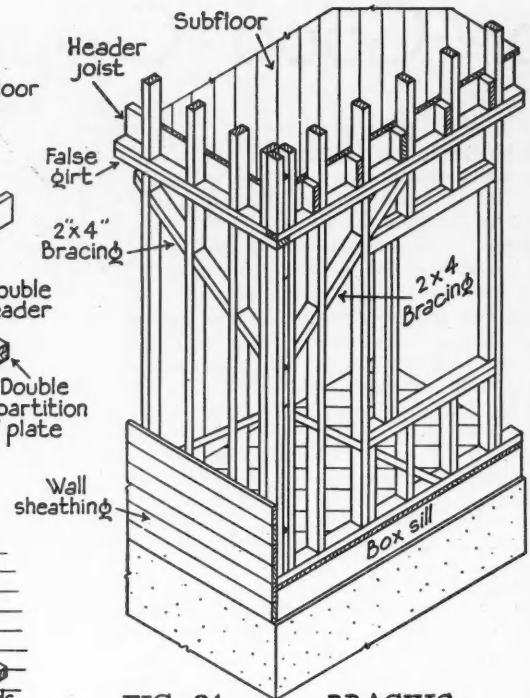


FIG. 31 BRACING
2"x4" Cut between studs
Sheathing applied horizontally

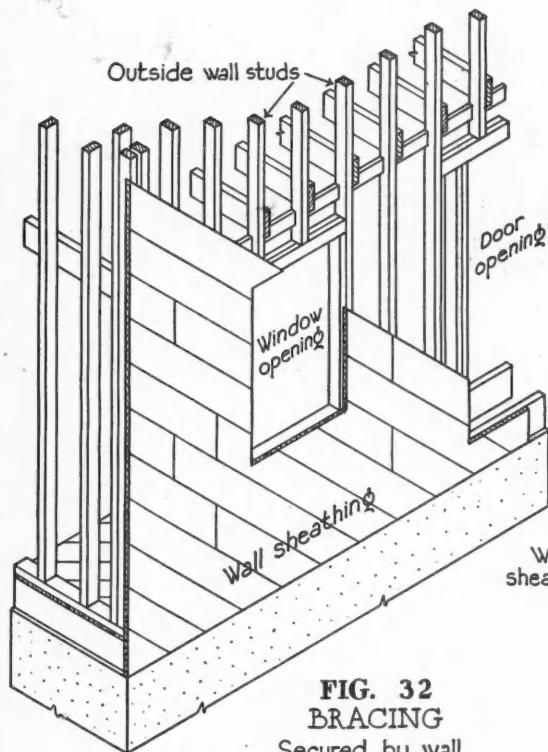


FIG. 32 BRACING
Secured by wall sheathing applied diagonally

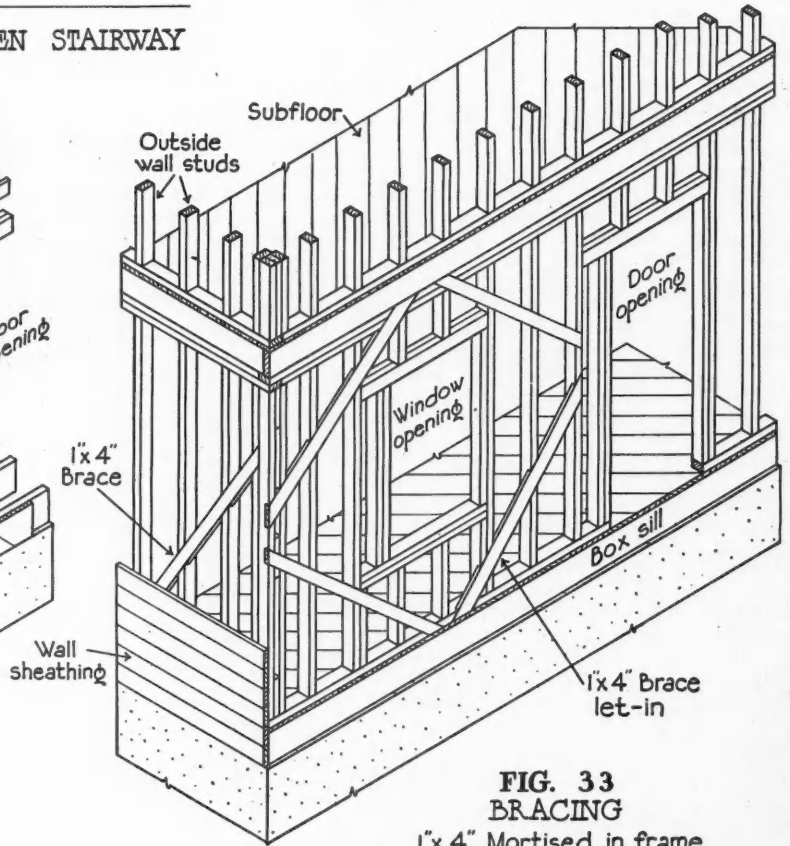
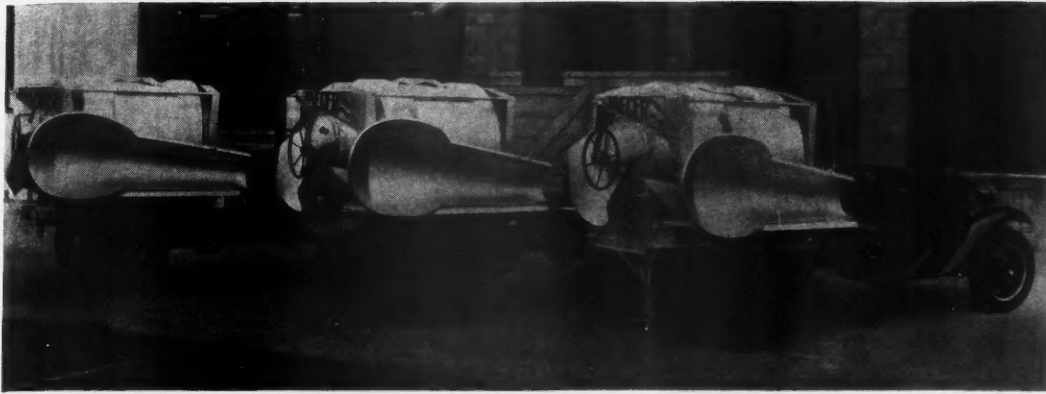


FIG. 33 BRACING
1"x4" Mortised in frame
Sheathing applied horizontally

Advance in House Framing Technique Is Shown in These Recommended Standard Details Which Are Worthy of Study.



Three of a Fleet of 6 One-yard Truck Mixers Operated by Kirkham & Kilmer, Contractors, Topeka, Kans.

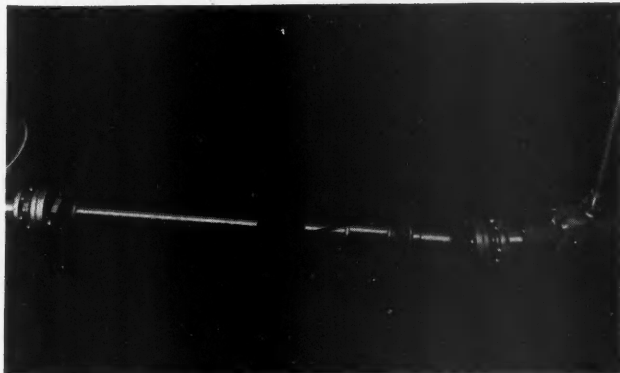
Small Truck Mixers for Builders

CONTRACTORS and builders have been watching with interest certain changes in the concrete business, coming about during the past year. As hand mixing on the shovel-board gave way to gasoline-powered concrete mixers, these in turn have been forced into the discard in many localities by the central mixing plant and the delivery of ready-mixed concrete to the job. A recent survey of the situation shows that there are now about 300 commercial ready-mixed concrete plants in operation, with a total annual capacity approaching 10,000,000 cubic yards. Also, it is evident that central plant mixing and truck mixing are replacing, or at least supplementing, job mixing to a greater extent each year.

Ready-mixed concrete has proved economical for the user, satisfactory to architects and engineers, and profitable for the producer.

Contractors doing an average sized business and located in the smaller centers where the commercial central mixing plants have not yet been established have been interested to break into this business with smaller equipment for the service of their own jobs as well as to supply other contractors and builders.

In line with this demand, a one-yard capacity truck mixer mounted on a light truck of the Ford type has been developed. It makes an ideal unit for the small rush delivery to clean up a big job, as well as being of ideal size for the contractor handling the average sized job. The entire unit costs not to exceed \$2,000 for truck and mixer. The mixer is driven direct from the truck engine by means of a patented power take-off. The mixing drum is properly designed for thorough mixing and fast charging under all conditions. The American Concrete Institute has recommended that, for transit mixing, there should be a ratio of 2 to 1 between



Mixer is Operated by This Patented Power Take-Off from Truck Engine.

total drum volume and mixed concrete per batch. This equipment meets this requirement, as well as that for positive water-cement ratio control.

Judging from the number of general building contractors who have added these small truck mixers to their equipment during the past six months, it is evident that this rig fills a present need. It is being demonstrated that many small plants, set up on a conservative scale, are proportionately as successful and profitable as the larger commercial mixing plants are in the bigger markets.



Truck Mixer Discharging Concrete On Belt Conveyor.

How to Handle Steel Windows

THE contractor and builder who handles steel windows with care is the one who saves money when erecting the windows. Not that steel windows are so fragile that they are easily distorted or broken but rather that the policy, "These windows are steel—bang 'em," leads to trouble.

There is a wrong way and a right way to handle windows, and the following information from a well-known manufacturer of all types of steel windows gives light on the subject.

Steel windows should be handled carefully. They should never be dumped on the ground or piled one on the other. Provide a storage place for them in advance. If there is a wall, a fence, a contractor's shanty or some similar support handy, lay down two timbers and stack the windows on edge leaning the top against this support. Place the timbers close enough together for the shortest unit.

Pick up the units and carry them. Don't drag them along the ground. Set them down easily. Never drop them for dropping the windows on the corner may distort them. Apply pressure carefully to the opposite corners to straighten distorted windows.

NEWS — building activities of the month

Many Cities Announce Wage Reductions

DURING the month of February at least sixteen cities representing important building centers of the country adopted lower wage scales for building trades.

In most cases wage adjustments were accomplished through voluntary action on the part of unions, in co-operation with building employees.

Newspapers of the country gave wide prominence to announcements of reductions and widespread opinion was that the timely announcement would materially help stimulate new construction this year.

At this writing the new wage adjustment scale offered by the Building Trades Employers' Association of New York City and the State Association of Builders had not been accepted by the unions. A 25 per cent reduction is called for.

In Chicago 125,000 workers voluntarily accepted a 20 per cent cut for one year. A similar cut was accepted by Cincinnati unions. Old and new wages follow:

AKRON		
	Old Wage	New Wage
Electricians	1.10	.90
Stone Masons	1.55	1.45
Tile Setters	1.37½	1.25
BALTIMORE		
Bricklayers	1.75	1.25
Hoisting Engineers ..	1.50	1.25
Laborers .....	.35-.50	.35-.40
Plumbers	1.00	1.00
Steamfitters	1.37½	1.25
Stone Masons	1.75	1.25
CHICAGO		
Bricklayers	1.70	1.36
Bricklayer's Helpers ..	.97½	.78
Carpenters	1.62½	1.30
Cement Finishers	1.62½	1.30
Electricians	1.70	1.36
Hoisting Engineers ..	1.62½	1.30
Structural Ironworkers..	1.67½	1.34
Ornamental Ironworkers	1.62½	1.30
Laborers .....	.97½	.78
Lathers	1.70	1.36
Painters	1.75	1.40
Plasterers	1.70	1.36
Plumbers	1.70	1.36
Roofers (composition)..	1.70	1.36
Roofers (slate)	1.75	1.40
Sheet Metal	1.70	1.36
Steamfitters	1.70	1.36
Stone Masons	1.75	1.40
Tile Setters	1.62½	1.30
Tile Setter's Helpers..	1.12½	.90
CINCINNATI		
Bricklayers	1.62½	1.27½
Carpenters	1.40	1.02½
Cement Finishers	1.32½	1.02½
Electricians	1.40	1.20
Hoisting Engineers ..	1.40	1.07½
Iron Workers, Orna...	1.40	1.20
Iron Workers, Struc...	1.40	1.20
Lathers	1.40	1.20
Painters	1.33¾	1.05
Plasterers	1.62½	1.27½
Plumbers	1.40	1.20
Roofers, Composition..	1.15	.92½
Roofers, Slate and Tile	1.40	1.07½
Sheet Metal Workers..	1.25	1.07½
Steamfitters	1.40	1.20
Stone Masons	1.50	1.27½
Tile Setters	1.50	1.02½



Courtesy Chicago Tribune

Coming Down For Dinner

CLEVELAND		
Asbestos Workers	1.42½	1.17½
Painters	1.37½	1.12½
Plumbers	1.50	1.25
Roofers, Composition..	1.40	1.15
Sheet Metal Workers..	1.37½	1.12½
Steamfitters	1.50	1.25
Tile Setters	1.50	1.25
COLUMBUS		
Bricklayers	1.56¼	1.30
Electricians .....	.80-1.25	1.00
Sheet Metal Workers..	.80-1.00	.70-1.00
DULUTH		
Bricklayers	1.30	1.10
Bricklayers' Tenders ..	.60-.65	.45
Carpenters	1.00	.75-.85
Cement Finishers .....	.87½-1.00	.75-.85
Electricians .....	.95-1.12½	.90
Hoisting Engineers ..	.87½-1.00	.80
Iron Workers, Orna...	.95-1.25	.90
Iron Workers, Struc...	1.00-1.25	.90
Laborers .....	.50-.65	.45
Lathers .....	.95-1.12½	.70-.85
Painters	1.00	.80
Plasterers	1.30	1.10
Plasterers' Tenders ...	.80	.70
Plumbers	1.12½-1.25	.95
Roofers, Composition..	.90-.95	.70
Sheet Metal Workers..	1.00	.80
Steamfitters	1.12½-1.25	.95
ERIE		
Asbestos Workers ....	.80-.95	.80-.90
Bricklayers	1.56¼	1.25
Bricklayers' Tenders ..	.60	.50-.60
Carpenters	1.10-1.15	1.00
Cement Finishers	1.25	1.00
Hoisting Engineers ..	1.10	1.00-1.12½
Laborers .....	.45-.55	.35-.40
Lathers	1.25-1.37½	1.00-1.12½
Painters .....	.90-1.10	.75-.90
Plasterers	1.62½	1.31¼
Stone Masons	1.56¼	1.25
Tile Setters	1.25	1.00
LOUISVILLE		
Bricklayers' Tenders ..	.90	.50
Electricians	1.31¼	1.00
Roofers, Slate and Tile	1.10	.85
Sheet Metal Workers..	1.10	.85

Coming Events

- Mar. 10-11, 1932—South Dakota Retail Lumbermen's Association, Annual, Watertown.
- April 11-16, 1932 — American Oil Burner Association, Annual, Mechanics Hall, Boston, Mass.
- April 12-14, 1932—Lumbermen's Association of Texas, Annual, Fort Worth.
- May 12-13, 1932—Florida Lumber & Millwork Association, Annual, Orlando.

MEMPHIS		
Electricians	1.25	1.00
Plasterers	1.56¼	1.25
Tile Setters	1.25	.50-1.25
MINNEAPOLIS		
Bricklayers	1.30	1.10
Carpenters	90-1.00	.75-.85
Cement Finishers	90-1.00	.75-.85
Electricians	90-1.12½	.90
Hoisting Engineers ..	90-1.00	.80
Iron Workers, Struc...	1.00-1.25	.90
Laborers .....	.50-.65	.45
Lathers	90-1.12½	.75-.85
Painters	90-1.00	.80
Plasterers	1.30-1.37½	1.10
Plasterers' Tenders ...	.80	.70
Plumbers	1.12½	.95
Roofers, Composition..	.95	.70
Roofers, Slate and Tile	.95	.70
Sheet Metal Workers..	1.00	.80
Steamfitters	1.12½	.95
Stone Masons	1.30	1.10
Tile Setters	1.37½	1.25
Tile Setters' Helpers..	.75	.65
NEW HAVEN		
Bricklayers' Tenders ..	.60-.75	.55-.65
Laborers .....	.55-.75	.50-.65
Plasterers' Tenders ...	.60-.75	.55-.65
PHILADELPHIA		
Asbestos Workers	1.37½	1.12½
SAN ANTONIO		
Carpenters	3.00-9.00	3.00-7.00

Proposed New York Scale Effective May 1

NEW YORK		
Bricklayers	15.40	12.00
Bricklayers' Helpers ..	9.90	7.00
Carpenters	13.20	10.00
Cement Masons	13.20	10.00
Cement and Concrete Laborers	9.35	6.50
Composition Roofers and Waterproofers	12.10	9.00
Engineers, Hoisting ..	15.40	12.00
Electricians	13.20	10.00
Metallic Lathers	13.20	10.00
Millwrights	13.20	10.00
Mosaic and Terazzo Workers	13.20	10.00
Mosaic and Terazzo Workers' Helpers ..	9.90	7.00
Painters and Decorators	13.20	10.00
Plasterers	15.40	10.00
Plasterers' Helpers ...	10.72	7.00
Plumbers	13.20	10.00
Sheet Metal Workers..	13.20	10.00
Steam and Hot Water Fitters	13.20	10.00
Steam and Hot Water Fitters' Helpers	9.90	7.00
Stone Setters	15.40	12.00
Slate and Tile Roofers	14.85	11.00
Tile Layers	13.50	10.00
Tile Layers' Helpers..	10.00	7.00

New Lead Pipe Standard

THE Lead Industries Association has approved a new standard of lead pipe sizes which is being adopted by the principal manufacturers as an aid to consumers. In addition to eliminating numerous variations in pipe sizes the new standard insures that all sizes of lead pipe in the A, AA and AAA classifications (or "strong," "Extra Strong" and "Double Extra Strong"), will safely withstand constant cold water pressures of 50, 75 and 100 lbs. per square inch, respectively. Heretofore the safe working pressure of these classes of lead pipe has decreased as the diameter of the pipe has increased. The principal changes occur in diameters of 1 in. to 2 in. Alterations made in sizes below 1 in. are of minor importance and small in number but have been made to introduce a uniformity which does not now exist among the lead pipe sizes of various manufacturers.

Survey Shows Finance Bodies Holding Back Building. Homes Not Overbuilt

LACK of money for mortgage loans is the principal factor holding back building today.

A new survey of 318 cities by the National Association of Real Estate Boards shows how great is the demand for funds and reveals there is no general overbuilt condition in the residential field.

Doubling of two or more families in units intended for a single family is practically counterbalancing the effect of non-building. It is thus masking what under other conditions would in many cities be an under-supply of desirable single family dwellings. With this counterbalance, 84 per cent of the cities report the supply normal or short, 71 per cent showing an equilibrium of supply and demand, 13 per cent an actual present shortage, and 16 per cent an over-supply.

Everywhere the money supply for loans is insufficient for the demand, the survey shows. In 70 per cent of the cities loans are seeking capital, in 22 per cent there is a balanced situation as between supply and demand, in only 8 per cent of the cities is there a condition where capital is seeking investment.

Small Cities Have Least Money

Most pronounced shortage of mortgage money is shown in cities under 200,000. Of the smaller cities only 2 per cent show capital seeking loans. But in cities of the largest population group 60 per cent report loans seeking capital, only 20 per cent have capital seeking outlet.

Interest rates are rising in 21 per cent of the cities reporting, steady in 75 per cent, falling in only 4 per cent of the cities.

Financing costs as well as money supply show a decided change from conditions of six months ago, when only 53 per cent of the cities reported

Section and Size of City	Capital Seeking Investment	Equilibrium	Loans Seeking Capital
Total for U. S. and Canada.....	8	22	70
New England.....	6	29	65
Middle Atlantic.....	11	25	64
East North Central....	4	15	81
West North Central....	18	18	64
South Atlantic.....	..	44	56
East South Central....	33	33	34
West South Central....	8	11	81
Mountain.....	5	24	71
Pacific.....	4	16	79
Canada.....	..	29	71
Over 500,000.....	20	20	60
200,000 to 500,000....	19	24	57
100,000 to 200,000....	19	31	50
25,000 to 100,000....	6	22	72
Under 25,000.....	2	20	78
District and County Boards....	8	17	75

a dearth of mortgage funds. In the survey of a year ago 40 per cent of the cities stated that loans were seeking capital. Typical comments are:

"Banks not making loans. Local building and loan associations in good shape but loaning only on new building. Makes it hard to transfer real estate where financing is involved, which is nearly always." "Loaning agencies will loan only when a house is completed and sold." "No sales can be made where it is necessary to secure any loan from the banks." "There is a statistical shortage of 5,000 single family homes in this community and an actual market supply that is daily growing more inadequate. Builders and architects have several million dollars worth of projects awaiting financing."

Very few loans are being made, and it appears that lenders of money are waiting to see what effect the new reconstruction loans and the home loan bank will have in stabilizing values.

Selling prices reflect general business abnormality, and are lower than they were a year ago in 85 per cent

of the cities reporting. While 31 per cent of the cities report market activity approximately the same as a year ago, 57 per cent report a less active market, 12 per cent more active.

Many buildings are now housing two or more families, which, when times get better, will unquestionably need accommodations of their own.

A count by Kansas City mail carriers made Jan. 1 showed 5,059 such excess families. Of all occupied single family homes in the city, 6.2 per cent are now housing one or more excess families. If all these were to move at the same time into individual quarters the percentage of vacancy would be decidedly below normal.

\$6,500 Cash For New Design Ideas

DOUGLAS Fir Plywood Manufacturers are announcing a new "cash for ideas" plan which holds considerable interest for carpenters, builders and cabinetmakers. One division of this plan offers \$1,500 in prizes for the best architectural designs using Douglas fir plywood for home and office interiors. The second division is not a contest but an outright purchase offer. By its terms this association of all United States mills producing Douglas fir plywood will pay \$25 cash for every acceptable "idea sketch" or working plan for the use of Douglas fir plywood in building construction remodeling, cabinetmaking, etc. A total of \$5,000 will be paid for these plans.

The chief requirement is that designs must show practical, desirable uses of Douglas fir plywood. The fullest advantage should be taken of the unusual characteristics of this wood — lightness combined with great strength; extra nail-holding power, resistance to splitting, breaking, shrinking, swelling and warping; wide range of thicknesses, and sizes up to 4 feet by 8 feet; and available with sanded surface.

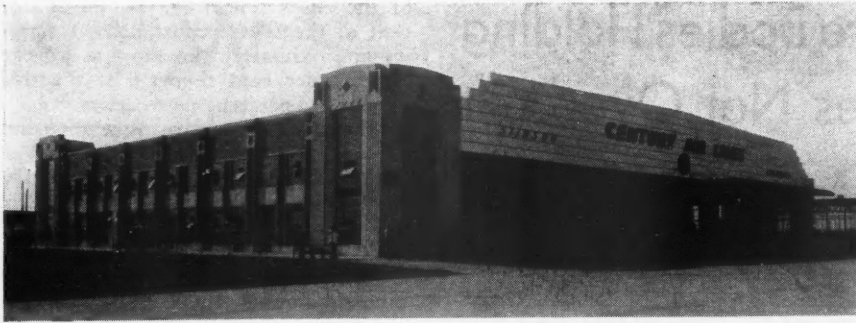
Any wishing to submit designs or ideas should write Douglas Fir Plywood Mfgs., Dept. 332-B, Skinner Bldg., Seattle, Wash.

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 U. S. and Canada.....	16	71	13	23	64	13	36	63	1
New England.....	6	83	11	19	69	12	26	74	..
Middle Atlantic.....	12	74	14	22	63	15	30	70	..
East North Central....	17	76	7	25	62	13	40	60	..
West North Central....	15	85	..	24	67	9	23	77	..
South Atlantic.....	17	58	25	21	58	21	48	52	..
East South Central....	27	64	9	30	60	10	45	55	..
West South Central....	32	68	..	26	65	9	46	54	..
Mountain.....	5	67	28	16	58	26	16	74	10
Pacific.....	15	61	24	20	73	7	45	53	2
Canada.....	14	86	..	43	43	14	..	100	..
Over 500,000.....	..	89	11	33	67	..	44	56	..
200,000 to 500,000....	21	68	11	31	39	..	55	45	..
100,000 to 200,000....	19	75	6	40	60	..	32	68	..
25,000 to 100,000....	23	69	8	23	62	15	37	62	1
Under 25,000.....	8	72	20	14	69	17	34	65	1
District and County Boards....	12	69	19	11	72	17	30	68	2

Percentage of Cities Reporting Upward, Stationary or Downward Movements of Residential Rents as Compared with November, 1930.

Section and Size of City	Single Family Dwellings			Two-Family Dwellings			Apartments		
	Up	Stat.	Down	Up	Stat.	Down	Up	Stat.	Down
Totals for U. S. and Canada.....	1	23	76	..	19	81	3	34	63
New England.....	5	28	67	..	17	83	17	28	55
Middle Atlantic.....	..	17	83	..	12	88	..	30	70
East North Central....	..	19	81	..	15	85	..	28	73
West North Central....	..	30	70	..	22	78	..	52	48
South Atlantic.....	..	45	55	..	43	57	15	54	31
East South Central....	..	18	82	..	10	90	..	30	70
West South Central....	..	12	88	..	8	92	..	17	83
Mountain.....	..	29	71	..	35	65	5	49	47
Pacific.....	5	25	70	2	22	76	2	37	61
Canada.....	..	29	71	..	17	83	..	29	71
Over 100,000.....	..	11	89	..	..	100	..	..	100
200,000 to 500,000....	..	64	36	..	14	86	..	29	71
100,000 to 200,000....	..	33	67	..	19	81	3	21	76
25,000 to 100,000....	1	16	83	..	16	84	3	32	65
Under 25,000.....	1	30	69	1	31	68	4	42	54
District and County Boards....	2	23	75	..	16	84	4	46	50



Central Chicago Terminal in Modern Design Built by Century Air Lines, Inc. embodying many unusual structural features. Huszagh and Hill, Architects.

Lumber Dealers Get Together

LUMBER dealers in many states met during the past few weeks to work out problems of the industry. Sessions were held by:

PENNSYLVANIA Lumbermen's Association, at Philadelphia. Co-operative buying and warehousing without resale control was advocated by H. B. Wilgus, the objective being cutting of distribution costs. Dr. Julius Klein outlined lessons in co-operation that lumbermen may learn from other industries. He stated that 4½¢ of every retail dollar goes to lumber and other building materials.

NORTHEASTERN Association, New York. Attention was given to local financing and marketing methods to help business. A successful modernizing campaign at Pawtucket, R. I., was described by F. P. Brooks, who said that there was hardly a street in town which had not been affected by the campaign. Seriousness of mail order competition was brought out by several speakers. Roland Doane suggested three improvements in dealer practices to be: (1) sell homes as units, (2) better use of plans, (3) improved newspaper publicity. A proven second-mortgage plan was described by S. E. Gilbert, of Utica, who told how such mortgages were handled there at reasonable rates by a company formed among local building interests.

ILLINOIS Association, Chicago. A drive to create more business through putting the "Muncie Plan" into effect in many communities was begun. President G. F. Colton criticized discrimination against lumber dealers by allowing of special discounts or purchasing advantages to mail order companies by manufacturers. This practice is now being curbed through activities of associations, he said. Greater co-operation between dealers and manufacturers was urged by Sewell L. Avery, President, U. S. Gypsum Co. B. F. Springer, of Milwaukee, declared that the greatest need of lumbermen is research and promotion, and advocated a 5 per cent mark-up for that purpose. The "Muncie Plan" was described by W. E. Price, who told how, within three weeks, 80

per cent of all workmen in the building trades in his community were put to work. The plan is being widely adopted elsewhere.

MICHIGAN Association, Grand Rapids. Strong support was given the proposed Federal Home Loan bill by President Cove and all dealers urged to support it. Oscar W. Rosenthal described present building problems and urged individual initiative by dealers. He outlined forms of competition, unfair practices, waivers of liens, unsound practices on parts of architects and owners in letting contracts, and stated that the construction investment trust plan would in his opinion solve many problems "by making money on business, not on money." "Al" Hager, President of the National Retail Lumberdealers' Association, criticised present policies of holding and waiting. He said, "We must do something for ourselves, which means fight.—400,000 homes are needed annually. For five years we have averaged less than 150,000.—We have about 23,000 lumber yards selling in normal times about 1½ to 2

billion dollars' worth of lumber and building materials. There are 254,000 automobile establishments which, with filling stations and garages, have sales of over ten billions a year. Food sales alone exceed it. The normal national income is estimated at 85 billions. We have not landed anywhere near our percentage. Why? The other fellow has been doing a better sales job."

IOWA Association, Des Moines. "We have master farmers, master painters, and master barbers," declared President A. L. Alcorn, of Cedar Rapids. "Why not master lumbermen—lumbermen who know no seasons, but go out and create business instead of waiting for things to get better?" Emphasis was laid on better sales and exhibition methods. A. D. McMullen said that more sales effort should be directed to women.

Discuss Mail Order Competition

Discussion of mail order competition was made by C. D. Mackres, who suggested competitive means. Reduction in number of retail yards was urged. A resolution was adopted to the effect that the "Federal Government should not overlook the plain duty it owes to the public to begin upon retrenchment in all of its branches. It is folly to seek new sources of tax revenue and think that in that way relief is being brought to the taxpayer. The only relief he will appreciate is a drastic cut in taxes."

OHIO Association, Columbus. Discussing mail order competition, Howard Potter stated that lumber business will be handicapped until it quits fighting, species against species. He urged working together and unit selling. C. J. Crehore gave a comparison of local and mail order prices.

CURRENT CONSTRUCTION FIGURES

January Awards Low

A SHARP decline in public works construction brought the total of contracts awarded in the United States in January to a new low.

Budget cutting on the part of public bodies generally was held responsible for the decrease.

AMERICAN BUILDER AND BUILDING AGE estimates for the month, based on F. W. Dodge reports modified to include all states as well as small work of \$5,000 or less, modernizing and repairs, are as follows:

Residential buildings\$ 53,574,290
Non-residential buildings 36,561,470
Public works and utilities. 26,462,040

Total contracts awarded.\$116,597,800

Encouraging conditions were found in ten cities which reported building permits higher than for January, 1931. Seven cities, namely Hartford, West Orange, Stockton, Syracuse, Wichita

Falls, St. Louis, and Albany showed an increase over January, 1930. S. W. Straus reports of the 25 cities reporting largest volume of permits for January are as follows:

	Jan., 1932	Jan., 1931
1. New York, N. Y.	\$15,019,386	\$36,936,140
2. Cleveland, Ohio	2,901,900	1,366,500
3. Los Angeles	1,862,171	3,790,283
4. Seattle, Wash.	1,750,510	906,145
5. Washington, D. C.	1,304,725	1,816,700
6. Boston, Mass.	979,324	977,268
7. Baltimore, Md.	964,200	1,354,920
8. Cincinnati, Ohio	701,460	722,505
9. San Francisco	606,149	1,831,083
10. Hartford, Conn.	592,910	107,090
11. Philadelphia	500,000	1,008,275
12. West Orange, N. J.	499,758	71,160
13. Stockton, Calif.	445,592	139,838
14. Syracuse, N. Y.	441,135	321,125
15. Wichita Falls	434,700	8,710
16. Portland	399,845	628,580
17. St. Louis, Mo.	393,805	1,943,275
18. Newark, N. J.	391,821	428,690
19. Milwaukee	375,978	851,797
20. Houston	359,093	1,026,742
21. Detroit, Mich.	358,806	4,996,059
22. Brookline, Mass.	343,075	70,100
23. Chicago, Ill.	329,800	2,838,400
24. Albany, N. Y.	329,152	215,133
25. Pittsburgh	328,495	581,335
TOTALS	\$32,613,790	\$64,937,853

Home Loan Bill Hearings

Bring Out Good Features

Show Need for Home Funds, Higher Loans, Strong Central Bank, Low Rate

Washington, D. C.—Final Senate subcommittee hearings on the Federal Home Loan Bank Bill were being held the last week of February.

Senator Watson (R) of Indiana, who introduced the bill on January 13, presided at the hearings as chairman of the subcommittee. His fellow committeemen are Senators Couzens (R) of Michigan, Townsend (R) of Delaware, Bulkley (D) of Ohio, and Morrison (D) of North Carolina.

The bill appeared to be gaining strength, according to W. E. Best, president of the U. S. Building & Loan League which is strongly backing the measure.

Concensus of witness' opinion, says Mr. Best, was in favor of passing the bill in its present form, S2959, without delay. Opposition developing at these latest hearings mainly took the form of attempts on the part of banking interests to defeat the leaning of the bill to the amortized long-term mortgage, as opposed to the straight one or two-year mortgage, and efforts of mortgage brokers' organizations to defeat the measure through claims that ample home financing is available now throughout the United States. In contrast witness after witness told the committee that the amortized mortgage is a godsend to the home owner, and that mortgage money is in demand especially for refinancing and remodeling. Points brought out:

Lift Big Burden

1. That it would take the burden of the second mortgage from the home owner. Witnesses told the committee that a home owner with a second mortgage could be relieved of it as soon as the original loan was reduced to 65 or 75 per cent of the home value if additional first mortgage funds were available to local home financing agencies.

2. That it would set up standards of appraising to replace the piecemeal valuations characteristic of the present. This point was brought out by James M. McKay of Ohio who told the committee that a federal system setting up eligibility requirements for mortgages it will accept as loan collateral would inevitably result in a standard of mortgage practices and principles. Each lending institution would hew to these standards to be sure of having sufficient security for loans from the federal system.

3. That the system as proposed in the Watson Bill would reduce the cost of home financing to the small home-



W. G. Stromquist, Who as Eastern Sales Manager Will Direct Popularizing of New Insulation Product.

owner, by making more first mortgage funds available to strengthen the local home financing institutions.

4. That home ownership has been on the decline for the past 80 years in this country, and that some means of financing homes up to 70 per cent of their value, comparable to the ease with which a radio, an automobile or stock in the stock market can be procured, must be set up to preserve the normal home market for commerce and industry from further contraction.

5. That it would open a new and very attractive mortgage investment for holders of large sums seeking an investment based on the soundest of all securities, the owned home.

6. That there are areas of the country where the would-be small home owners have never been able to secure enough first mortgage money and the proposed system would take care of them for the first time in history. Joseph H. Reass, Jr., of Wheeling, W. Va., pointed out this condition in the coal mine and steel mill towns of his state, and A. C. Hunt, of Rapid City, S. D., reported a similar situation in South Dakota west of the Missouri river.

Find Need Is Great

7. That there is a great need for remodeling of old houses. Sufficient financing for these remodeling jobs would put thousands of men to work, give additional freight hauls to the railroads, and would give the small merchant increased business.

8. That the refinancing of straight mortgage loans now being called represents the gravest problem the financial world has to face today and that

the proposed system would meet the need.

9. That the normal borrowing needs of the home financing institutions are adequate to sustain a federal system.

NEW FIRM WILL SELL INSULATION

A NEW company has entered the building material field and will soon place on the market a cane fibre structural insulation under the brand name Canec. This new concern, known as Hawaiian Cane Products, Ltd., has just completed the erection of a plant at Hilo, Hawaii.

Walter G. Stromquist, who has long been identified with the building material industry, has been appointed Eastern Sales Manager.

The new product consists of the usual popular sizes of board from ½ inch to 1 inch thick, as well as insulation lath. It will be distributed solely through a selected list of lumber dealers, sales being made by the company in carload lots directly to the dealers for re-distribution in the respective territories. A staff of salesmen and contact men will be maintained in every section in which the company operates. Advertising of the company's products will be carried on through local trade journals and newspapers. The company will also conduct an intensive direct-by-mail campaign for the assistance of dealers.

Five-Hour Working Day

TO double the number of men employed, a working day of two shifts of five hours each in the construction industry is advocated by the California State Chamber of Commerce through the recently organized California Building Congress. Already inaugurated in San Francisco, the plan, its sponsors hope, will spread to other parts of the country and aid in relieving idleness in the building field.

4,000 New Houses

IN THE belief that 1932 represents a good time for residential building, Louis Gold of New York, a veteran developer who has been out of the market for five years, has announced opening a 15,000 lot community on which 4,000 homes will be erected.

"I am certain that the tide has definitely turned and that we shall witness this year a decided forward move toward prosperity," he says. "I have passed through a number of depression periods since I started in the real estate business in 1889 and the same signs which denoted the end of those periods are showing themselves now in no unmistakable way."

Practical Job Pointers

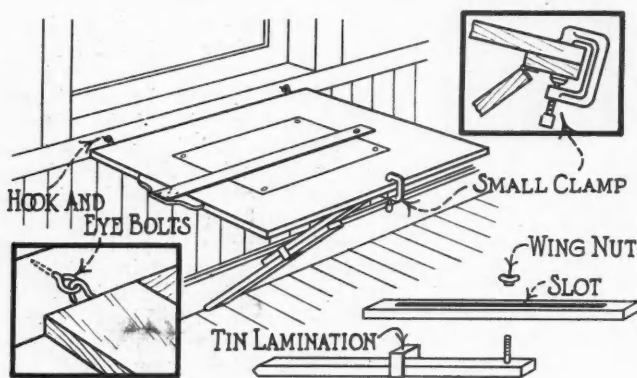
A Readers' Exchange of Tested Ideas and Methods, Taken from Their Own Building Experience.
Two Dollars Will Be Paid for Each Contribution Published in This Department

Handy Drafting Table

OCCASIONALLY a person needs a drafting table at home, or in the shop, but does not have room for a large table which is not in use regularly. A folding table can be made, as shown in the accompanying sketch, which will serve the purpose well and is entirely out of the way when not in use.

The sketch shows the construction of this board, which can be made of any desired dimensions. Both sides of the board can be used without disturbing the plans already on the other side, by simply unhooking it and turning it over.

Otto Fort, 2213 S. Gunderson Ave., Berwyn, Ill.



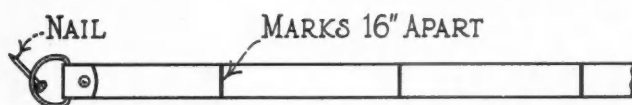
This Folding Drafting Table Is Handy in Either Home or Shop as It Is Out of the Way When Not in Use.

Improving the Steel Tape

HERE is an idea which I have found so useful that I am trying to get some of the manufacturers of steel tapes to adopt it. I have etched a bar mark on the back of my steel tape every 16 inches, to be used in placing studs, joists and rafters.

I drive a nail at the starting point and then mark for the studs as the tape rolls out. It saves time as compared with using a square.

E. J. HUNTER, Tabor, Iowa.



Marks at 16-Inch Intervals on the Back of the Steel Tape Save Time in Marking for Studs.

Walk Board for Shingling

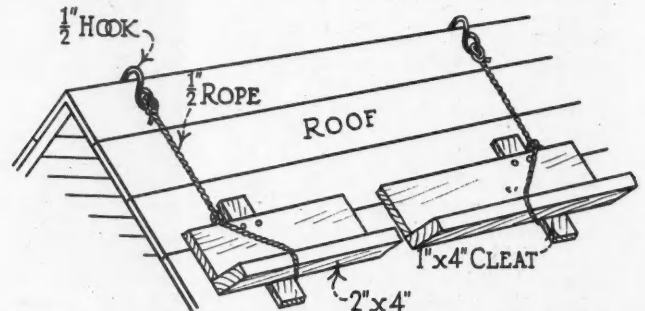
THE sketch shows a walk board which I use either on new work or over old roofs. To make this I use two lengths of 12-foot lumber, which is long enough for most jobs. One of these pieces is a 1-inch board and the other a two by four. I nail the two by four to the other piece, as shown, and then nail on a short piece of one by four close to each end, as a cleat.

I tie two ½-inch ropes around this board and attach hooks at the other ends. With these hooks, hooked over the ridge you have a place to walk and also a place to lay your shingles. It can be moved up the roof as you work. The hooks are ordinary ladder hooks.

This is especially intended for laying asphalt shingles as

you can not walk on them, or nail through them without damaging them.

E. W. CONNER, R. F. D. 3, Lacona, Iowa.



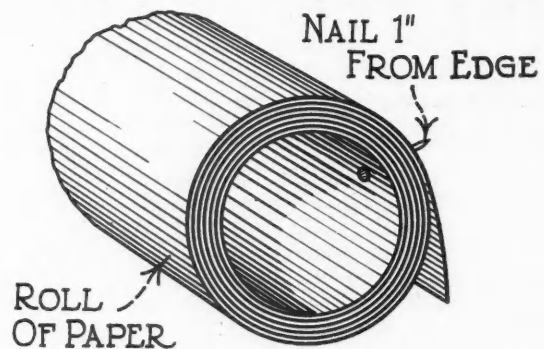
This Is Especially Useful in Laying Asphalt Shingles, Saving Them from Damage and Making the Work Easier.

Easy Handling of Building Paper

NOT long ago I had occasion to use some building paper while working alone. As often happens there was plenty of wind and the weather was cold. Every now and then the roll of paper would slip in my cold hands and sometimes it would go spiraling down the side of the building. I finally thought of a way to stop this difficulty.

I drove a eight-penny nail through the roll of paper about an inch from the end of the roll, with the head of the nail inside. After that the roll handled so much better that I always use this method now. The nail hole, being near the edge of the paper, does no harm as it is covered by the lap. This also saves much paper that is usually torn when the roll gets loose.

EARL R. SPAHR, 31 Chittenden Ave., Columbus, Ohio.



A Nail Driven Near the Edge of a Roll of Building Paper Makes Easier Work and Saves Torn Paper.

Adjustable Support for Lumber

A VERY satisfactory stand for supporting lumber or other light material, at various machines about the shop, is made as follows. Each end of the stand is formed by joining two 30-inch sections of three by four lumber in the shape of an inverted Tee. These are suitably braced. The upright members each have a one by three-inch groove in the inner face, for two 1½ by 3-inch hardwood strips. These strips carry the eight by 16-inch roller of wood or metal. They are cross braced by a two by four near the top, and angle braced from this by a ½ by 1½-inch steel strap.

The roller and inner frame are elevated or lowered to the

(Continued to page 68)



MIXED 1 TO 3 NOTHING ADDED

One bag of Brixment and three full cubic feet of sand—this is the simple Brixment mix. Nothing else is added. Because Brixment combines the characteristics of portland cement and lime, having both strength and plasticity. . . The ease of measuring the sand, either by wheelbarrow or shovels, removes the possibility of incorrect proportions and assures a mortar of uniform strength and color. When Brixment is used, no waterproofing admixture is necessary because an integral waterproofing compound is mixed with Brixment during manufacture.

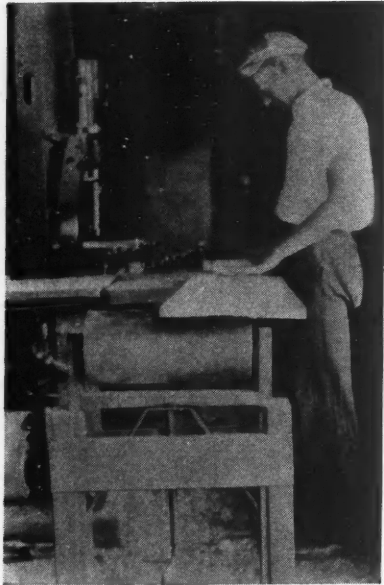
LOUISVILLE CEMENT COMPANY, *Incorporated*, LOUISVILLE, KY.
 District Sales Offices: 1610 Builders Bldg., Chicago; 600 Murphy Bldg., Detroit; 101 Park Ave., New York
 Mills: Brixment, N. Y. and Speed, Ind.

BRIXMENT



A Cement for Masonry and Stucco

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE



This Adjustable, Roller Stand Supports the End of Lumber Being Worked at the Machines.

desired height by a vertical crank or $\frac{3}{4}$ -inch rod, with the upper portion threaded to fit a hole tapped in a 1 by 2-inch steel bar. This bar is between the cross braces of the outer frame and is reduced at the top end to fit into a hole in the middle of the angle brace strap.

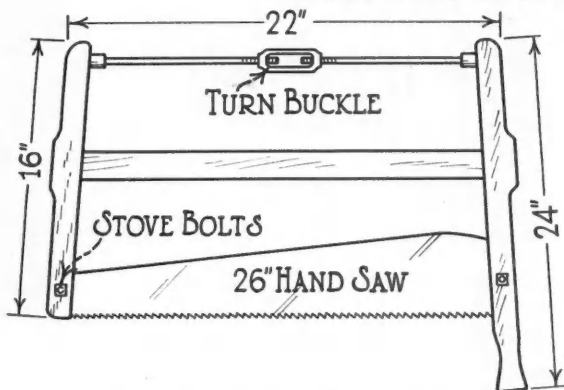
Jos. C. COYLE, Drawer B., Englewood, Colo.

For Squaring Timbers

THE sketch shows a special saw which I use with good results for squaring large timbers such as ten by tens. I take an ordinary five point hand saw and punch a hole about $\frac{3}{16}$ of an inch in diameter in one end. With this hole punched it is a simple matter to place the saw in a wood frame of the buck saw type.

Such a saw eliminates the play and swing and makes a perfect cut. The fact that with this saw both hands can be used makes the work quicker and easier.

E. A. EDELMANN, 1681 Edward St., N. Battleford, Sask., Canada.



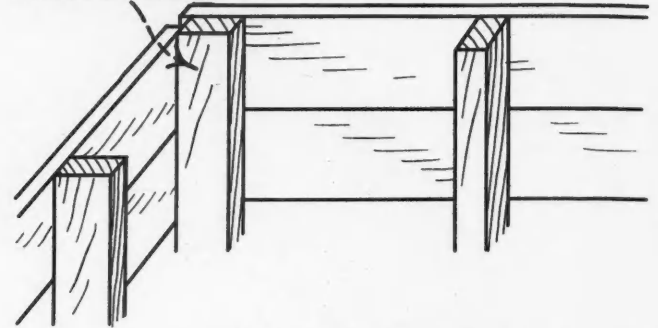
An Ordinary Hand Saw Placed in a Buck Saw Frame Like This Makes a Perfect Cut in Large Timbers More Easily and Quickly.

Forms for Concrete Basements

WHEN making concrete forms for small basements, where the sheathing is used full length, I let the edge of the corner stud extend about $\frac{1}{4}$ of an inch beyond the ends of the sheathing on one side. This side is placed between the other sides and the sheathing of the other sides is cut $\frac{1}{4}$ of an inch short of its surface. The opposite side is set in the same manner. It takes no longer to make such a form and it saves both time and material when removing it.

ELLIS COOK, 234 S. Nickolson Ave., Monterey Park, Cal.

SHEATHING NAILED $\frac{1}{4}$ " BACK FROM EDGE OF THIS STUD



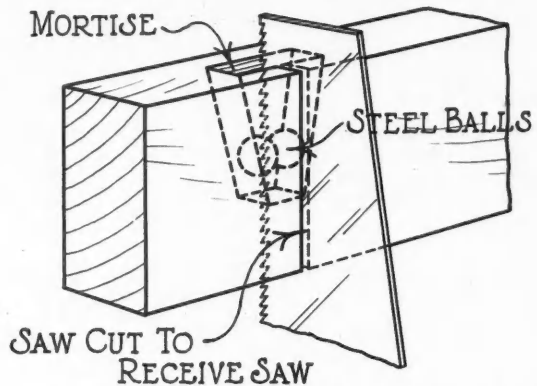
A Basement Form Built in This Manner Can Be Removed with a Minimum of Labor and Wasted Material.

A Convenient Saw Holder

A CONVENIENT arrangement for taking care of hand saws is most important. Such a holder can be made as shown in the accompanying sketch. Take a length of two by four and cut in it as many mortises as you have saws to take care of. These mortises must have the sides beveled to accommodate two steel balls.

A saw cut is then made through the center of the mortise to receive the saw blade. To hang the saw up, it is pushed up in the slot between the two balls. A slight downward pull causes the balls to pinch the blade and hold it securely. An upward push releases the saw when it is wanted.

M. M. STAHL, Raley, Alta., Canada.



Here Is a Simple and Convenient Saw Holder Which Anyone Can Make from a Piece of Two by Four and a Couple of Steel Balls.

"Early-Man" Cuts Costs

THIS summer our firm had a church steeple to repair and the street had to be roped off while the men were working but not at any other time. To have the men all come to work at the usual hour entailed a lot of wasted time so we had one old fellow who had been with us a long time come on the job at 6:30. He roped off, mixed mortar and had all arranged for the men when they arrived one hour later. This man is not particularly valuable to us when on a job with other workers. He is faithful but slow. Since summer, however, we have been using him to come on the job and prepare everything for the regular force. He is faithful, interested and experienced and has been more valuable to us than ever before. It means a lot to have a force start right to work with no hunting for tools or material. No other firm here seems to be doing this little stunt, yet it is a time saver.

E. C. BAGGOTT, 2229 Eutaw Place, Baltimore, Md.



**HOW
WINDOWS
HAVE
CHANGED**



MODERN FENESTRA CASEMENTS

HELP THE BUILDER SELL

... they open at a finger's touch

In 1932, home buyers will not be satisfied with old-fashioned materials — they will demand *modern* windows.

Use Fenestra Steel Casements. Then your windows will offer the prospective buyer: finger-touch opening, outside cleaning from the inside, more daylight, better control of fresh air ventilation, extraordinary weathertightness, fire safety.

And with your houses equipped with Fenestra's famous inside bronze-mesh screens, your prospects will be offered casements which open, close or lock *without touching the screens.*

At the same time, Fenestra Casements will save you money: (a) *Low first cost*, due to large production by America's largest and oldest steel window maker. (b) They come complete, installation costs are reduced to the minimum, less labor on the job. (c) Sash weights and cord, and interior head and jamb casings are eliminated. (d) Weatherstrips are not necessary.

For complete information call "Fenestra Steel Window Company" in your city or write to —

DETROIT STEEL PRODUCTS COMPANY
2281 East Grand Boulevard, Detroit, Michigan
Factories: Detroit, Michigan, and Oakland, Calif.
Convenient Warehouse Stocks

Fenestra

FENWROUGHT CASEMENTS OF STEEL

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

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!

Wage Cuts for Building Boom

Chicago, Ill.

To the Editor:

Through your campaigns to stimulate winter building and in support of the Federal Home Loan Bank you have started something. Now why not go further and inaugurate a movement for the deflation of wages of union building mechanics, for the removal of all restrictions on the output of the same and the removal of discrimination against all goods, equipment or material no matter how nor where produced.

If you can accomplish the foregoing you will start a building boom in this country but until such program is completed wise people will do just as little building as possible. The material manufacturers and dealers have done their part and labor should follow suit.

A. W. GLESSNER, President,
The Excelsior Steel Furnace Co.

Disagrees as to Wage Cuts

Sioux Falls, S. D.

To the Editor:

I have been a subscriber of your magazine for almost four years and have been quite well pleased with each number except for the editorials, in which you have been advocating a slice in wages for the building mechanic.

I agree with you that a moderate reduction of ten per cent is fair but why force or try to force a larger cut of 25 and 30 per cent?

Is it true that everything else has come down 25 and 30 per cent?

How about coal, lights, gas and taxes? Have they come down? No, they have not!

It is true that foodstuffs, clothing and rent have come down some, but not 25 and 30 per cent.

The building mechanic has just gained a place wherein he may enjoy a few comforts of life, namely, a home, radio and automobile and is an asset to a community instead of a fly-by-night floater. He is one that spends liberally and keeps the ball a-rolling.

If we are to have prosperity again good wages must be maintained, every fair thinking American knows that. If we are to maintain the present standard of living, good wages likewise must be maintained and it is the building mechanic that has helped to better the standard of wages and therefore has made better living conditions.

I draw from your editorials one conclusion, that they have been one-sided with but one point of view, and that is, to better the contracting business for the contractor and to destroy the very thing that has made that business what it is today, namely, the spirit and ability of the American building mechanic.

You cannot find better mechanics than we have in our country because they have made a living wage so that they might live decent and have the spirit to push on to better building standards.

Now, let us and you be fair; put yourself in our place, working part time and going for weeks without any work with the bills piling up just the same. It is indeed not a road of sunshine at present, say nothing of decreased wages.

There are two sides to every question so if you cannot say something good for the building mechanic once in a while, please do not knock him all the time.

W. A. BLUE.

Will It Pay to Remodel?

Denver, Colo.

To the Editor:

After all the advertising and hustle in regard to modernizing, repairing, etc., it is probably a good idea to survey the subject in the light of new experiences, that is, new to most of us.

Every builder and mechanic in time gets some old work, but generally in the past the idea has been to get away as soon as possible from a dirty, unhealthy, disagreeable and unappreciated task. But since the general "omission" of work, coupled with the plea to both owners and builders to do modernizing, progressive builders have studied the subject carefully.

Now, the question is, "When does it pay to work over an old building?" The answer to that requires the advice of very well experienced re-builders.

In general, I would say that the office or factory building with substantial foundations, underpinning and walls, gives a fair opportunity to the owner for a profitable renewing. And the same is true of the home, if it is not too old and there is not a great deal of wall and partition changing. But if the floors are uneven, the house has tipped, and the foundation is insecure, my conviction is that in most cases the best interests of both owner and builder are served by a new house. Personally, I will not add on or renew a house where floors and walls are out of level and out of plumb, with doors and windows twisted. Such a job can never be satisfactory and the owner is sure to have a bad word for the builder who does such work. No matter if the builder does advise against it, and tells him it will cost a lot, it is his reputation which will suffer.

My belief is that the industry will be better off to discourage a lot of this remodeling and advise new building. Where an owner spends \$2,000 on repairing an old 6 to 8 room house, he will feel that the job should last ten years, at least. Expert advice, on the other hand, could probably prove to him that a new house will be cheaper in year to year cost.

WAYNE NOBLE.

Likes Cost Estimates

Milford, Mass.

To the Editor:

I want to congratulate you on the "House of the Month" feature in the January issue, especially the concise and itemized account of the costs.

I would suggest that you keep up the good work and give the trade a diversified list of houses from month to month, ranging in price from \$5,000 to \$15,000. Also, I would suggest that you put out a lumber schedule and a more complete set of specifications.

JOHN C. RIPLEY.

Labor-Saving Machinery and Equipment

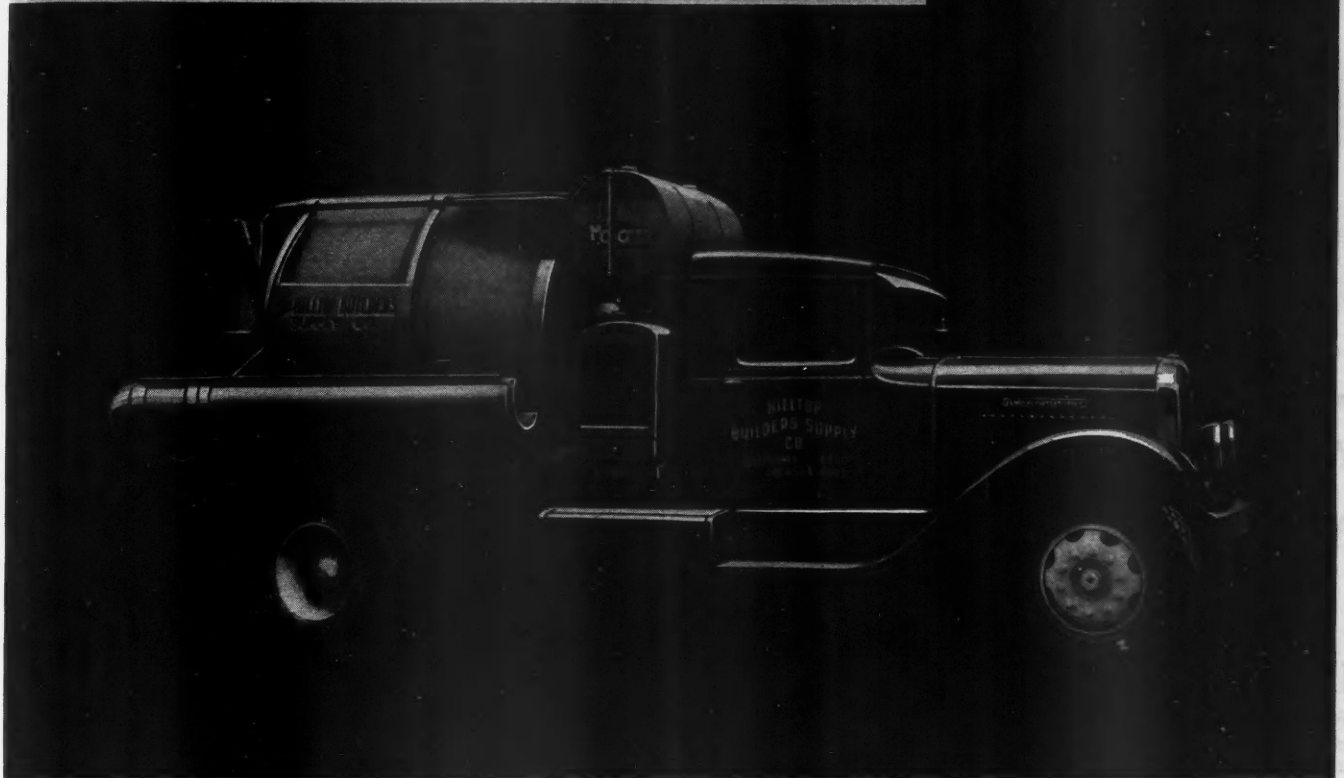
Los Angeles, California.

To the Editor:

I am quite sure that the writer of the editorial entitled "For More Labor Saving Machinery" in the January number of your magazine, will not resent my calling attention to the fact that the article in question is misleading in its implication that the use of labor-saving machinery does not

(Continued to page 72)

**• GENERAL MOTORS TRUCK
ADVISORY SERVICE TAKES THE
GUESS OUT OF TRUCK BUYING**



Has your present hauling equipment reached the point of depreciation where operation costs are eating into profits? Could you use trailers profitably? What is the most economical way to handle peak delivery problems? Are the types and sizes of trucks you now use ideally suited to your requirements? These problems, and dozens of other questions that determine "profit" or "loss" on your distributing operations, will be answered honestly—accurately—scientifically—by General Motors Truck advisory service. This helpful counsel is based on the findings of a two-year study of successful trucking operations in all sections of the country. It is *not* designed to sell you a particular make of truck—it is distinctly an advisory service to help you choose the types of equipment which will be most profitable for you to use. Ask the General Motors Truck dealer in your locality to make an analysis of your

trucking operations, or mail the coupon for our booklet outlining the scope of this service. **GENERAL MOTORS TRUCK CO., PONTIAC, MICH.**
(A subsidiary of Yellow Truck & Coach Mfg. Company)
Time Payments Available Through Our Own Y. M. A. C.

Send booklet, "Cutting Distribution Costs with Motor Trucks"

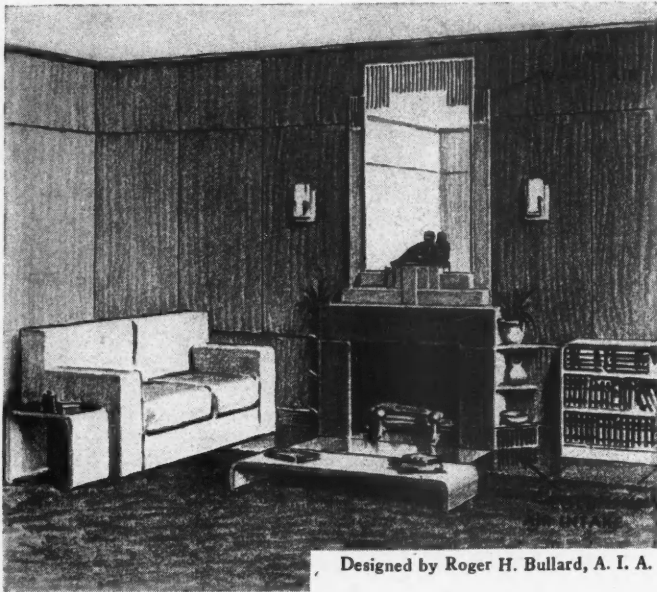
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Address _____

Business _____ 20C

**GENERAL
MOTORS
TRUCKS
AND TRAILERS**

THE RIGHT TRUCK FOR EVERY RUN—1½ TO 20 TON



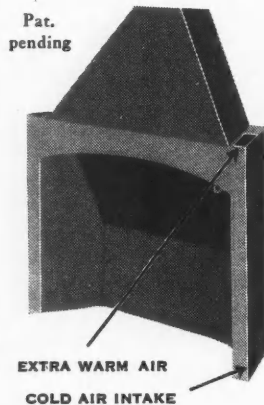
Designed by Roger H. Bullard, A. I. A.

..... A Fireplace that You can Guarantee! Will Not Smoke Circulates Heat

DON'T ask the home owner to take chances on the success of the fireplace in that new home—guarantee its success. For now, at new low prices—you can supply a fireplace that is guaranteed smokeless, that circulates warm, healthful air throughout the living room and connecting rooms—one that architects approve.

These advantages in fireplace construction are made possible by the development of the Heatilator—a double walled metal form, around which any style of fireplace can easily be built. This unit takes cold air from the room, passes it around the fire, and sends it out warm and healthful, to circulate over the entire room. Saves furnace operation during cool spring and fall weather. Only heat required for homes in mild climates. Ideal for summer cottages, cabins and camps.

A perfect fireplace is guaranteed; there will be no disappointments, no smoking with the scientifically constructed Heatilator. The small additional investment is offset by savings in labor, materials, and fuel. We'll gladly send you full details of this modern fireplace. Just fill in and mail the coupon today. **THE HEATILATOR CO., 633 East Brighton Ave., Syracuse, N. Y.**



Heatilator Fireplace

HEATILATOR COMPANY, 633 East Brighton Ave., Syracuse, N. Y.

Send me without obligation full details of Heatilator. Also send me the nearest dealer's name. I plan to build...remodel...(which?). No...fireplaces.

Name..... Position.....

Company.....

Address.....

LETTERS

from Our Readers

(Continued from page 70)

cause unemployment. If in the future we are to make the kind of progress we would like to make, it is imperative that we learn to look at things as they are and not as we would like to have them.

The use of labor-saving machinery DOES cause unemployment; this is a statement of fact, not a fallacy. As the name implies, that is what labor-saving machinery is for. Its prime purpose is to relieve man of drudgery and give him more leisure.

The economists have compiled statistics to show that the men released on account of the introduction of machinery will find employment elsewhere, but they are overlooking the element of equilibrium.

In general this is the way it works—the introduction of labor-saving machinery forces men out of the work of direct production; a few of these men (a very few) will find employment in making the machinery—a few will start the making of some new product—perhaps the larger part of them will turn to marketing and service work. This is quite satisfactory while credit is expanding, but when credit begins to contract we find that our economic system is out of balance. We find too many men engaged in marketing with no method available by which they may be reabsorbed into the work of production. It is easy to overlook the fact that the money to pay the costs of marketing—the costs of all forms of service work, must come from the efforts expended in the production of essentials.

It is comparatively easy to get away with the statement, that the use of machinery does not reduce employment because it is not easy to disprove; new methods and machinery are usually introduced during a time of expansion when it is easy for released labor to find other employment; further, machinery and new methods are not the direct cause of depressions, during which unemployment distress becomes acute. Depressions are caused by a misuse of credit, by a too great expansion in all lines of endeavor.

However, the use of labor-saving machinery is one of the elements that enable us to expand more rapidly than we should: further, these same labor-saving mass production methods coupled with a reluctance to reduce prices to agree with contracting credit during a depression, are the most effectual factors in preventing the unemployed from finding work when they most need it.

This is not an argument in favor of any less use of machinery, nor an attempt to prove that if we had no machinery we would not have unemployment, but it is an effort to encourage a better understanding of our economic process in order that we may know where to look for a remedy.

The use of machinery is not the most important phase of economic life; but it is essential to progress. Our progress, and the future use of labor-saving methods will depend on our ability to maintain a better balance of economic forces.

Thirty years ago, business management recognized the fact that the use of machinery reduced employment and accordingly reduced the standard work day from twelve hours to eight hours. Let us hope that they will again take the initiative and find a way to spread employment during times of depression. A plan for spreading employment in productive work might require a sacrifice on the part of many people for a time through a reduction of wages and dividends, but would in the long run benefit all by hastening the return to normal business activity.

E. A. LUDLAM,
Industrial Engineer.

(Continued to page 74)

For spring building ...remodeling...



GIVE EVERY JOB 2 times the VALUE

of common "insulated" construction

CARPENTERS and contractors are using Balsam-Wool to get more business—more new jobs, more remodeling—right now.

People have put off building new homes for a long time now. Hundreds have got to have more room, more comfort in their present homes.

That's where Balsam-Wool helps you. It gives your customers 2 times the VALUE of common "insulated" construction. Makes an attic, a sun room or a new extension to the house several times as efficient as without insulation against stifling summer heat and winter cold.

It's a double value material. Today people want value.

They want the comfort that only Balsam-Wool can give.

Get this business for yourself. Your lumber dealer can and will help you. Ask him today. Learn how others are making profits, landing jobs, with Balsam-Wool. Fill in, mail the coupon below. Act now.

Wood Conversion Co.
Dept. H-7,
Cloquet, Minn.



Send me facts and figures on how I can land real money-making jobs.

Name.....

Address.....

It tucks in.

Balsam-Wool

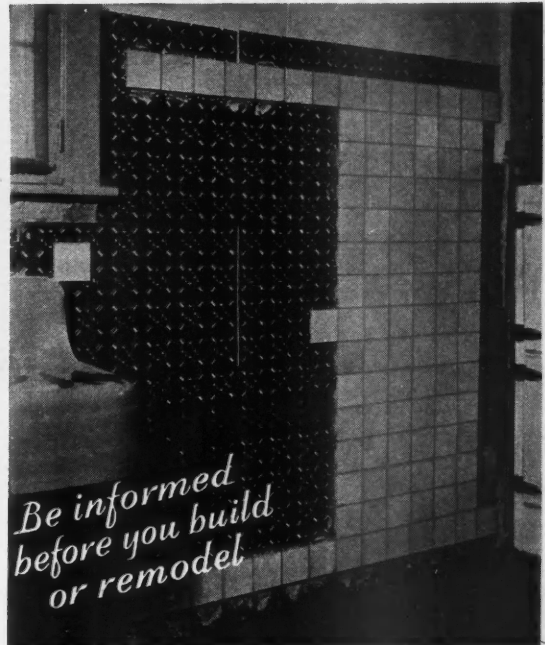
Blanket

THICK... FLEXIBLE INSULATION... EFFICIENT

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

NOW. BATHROOMS and KITCHENS can be walled with GENUINE CLAY TILE

- BETTER, QUICKER
- WITHOUT DISORDER
- LESS EXPENSIVE



*Be informed
before you build
or remodel*

The tile industry is now supplied with "SNAPON" metal lath and tile

Anyone can see the advantages of this grip-lock metal reinforcement for tile in either new buildings or for remodeling.

In remodeling (no disorder is necessary) the "Snapon" lath is simply nailed to the plaster wall and tiles are snapped with equal tension into the metal grips of the lath. Each tile is held true in line and set permanently in cement. Strong structurally — assuring correct alignment "Snapon" offers a lasting and beautiful job of tiling. Use coupon if you are interested.

*Read what Leading Building,
Scientific and Architectural
Magazines say of "SNAPON"
Metal Lath and Tile:*

American Builder and Building Age — "Tile Clipped to Metal Lath is In-expensive to Install, and Does Not Crack."

Popular Mechanics — "Time and labor are saved, and the debris that usually litters the kitchen or bathroom undergoing remodeling is obviated."

American Architect — "...cheaper and faster in applying than the usual method of tile setting."

TRANSCONTINENTAL TILE CORPORATION
2107 Adams Street, Indianapolis, Indiana

I would like to be more fully informed about "Snapon" metal lath and tile.

Name.....

Address.....

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



"ANTI-HYDRO"

We Enter Our 29th Year

Since 1904 "Anti-Hydro" has been performing successfully as the one dependable waterproofer and hardener for concrete. We're back of every supervised job with our experience, reputation and furnish a 25-year guarantee to the owner and builder.

Anti-Hydro Waterproofing Co. A3
295 Badger Avenue, Newark, N. J.
Please tell us more about "Anti-Hydro" and your 25-year guarantee.

Name.....

Address.....



VENTO PREMIERS
One of those desirable features that help sell a home

The housewife is struck with their outstanding convenience. In addition, the home owner recognizes their sturdy construction. Use Premiers—they cost less installed than many other steel basement windows.

Catalog and name of dealer on request.

VENTO STEEL SASH CO.
Puttyless Windows for Basements, Garages, Factories, Barns, etc. MUSKEGON MICHIGAN

LETTERS

from Our Readers

(Continued from page 72)

Financing Help for the Smaller Cities

Menno, South Dakota.

To the Editor:

Just finished reading your editorial, "Hoover Home Loan Bill Needs Your Support," and note what Mr. Cody has to say. He makes a statement that the mortgage bankers are able to take care of all the proper loan requirements. This makes us smile when we think of the financing we tried to get for our customers and could not get as the finance companies would not make loans in towns under 2,500 population.

In the last seven years we had many prospects for homes that needed financing on part of the building and all we received from financing companies were letters saying "we do not loan out of the city" or "we haven't enough money to take care of our city applications."

The home financing towns of this size received was practically nothing and we think the Hoover home bill will do us small town lumbermen more good than any loan company we have been able to find so far.

R. TEMPEL, Manager,
Tempel Lumber Co.

"Why Should They Buy Our Old Junk?"

Moorhead, Minn.

To the Editor:

The address by Samuel O. Dunn, "The Road to Prosperity," published in your January issue, appears so much in accord with my own theme song, that I cannot refrain from writing to you.

The statement, "that the standard of our homes is falling behind our other standards of living," is very pertinent. "Why go star gazing for some new industry to serve these purposes, when home improvement and construction would serve the purpose far better?"

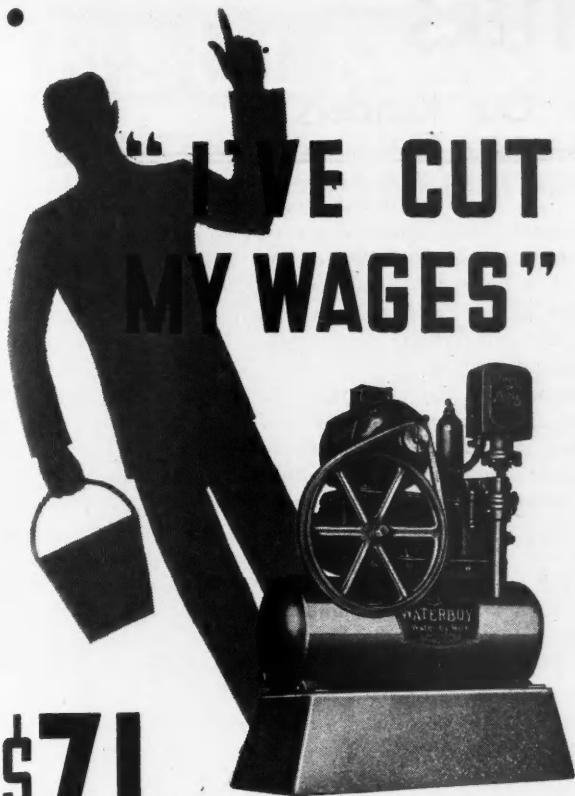
The building industry could turn to no better teacher than the automobile industry, its strongest competitor. I differ with you very strongly, however, on the point of "larger" homes. *Better*, but not larger. We do not have larger automobiles. The one item that costs the most, and returns the least satisfaction, is space. We buy automobiles, aeroplanes and radios, because they eliminate space.

In the building industry we use hot-air furnaces that require a full basement for their accommodation. One floor for the furnace, another for the furniture, and then we spend much of our time on the stairway between them.

Automobiles are made as easy to get into and out of as a rocking chair, but we encumber our houses with dozens of stair steps. The automobile has a heating problem as great as that of heating a house. At full load, it must transmit and dissipate, as many B.T.U.'s as are required to heat a four-room bungalow. The apparatus it uses to accomplish this is about one-tenth the weight and volume of that used in the house and has an efficiency several times as great.

Because of the immense amount of leakage and exposure, it requires as much heat to warm the inside of an automobile as it does to maintain the temperature of a room in a well built house. Yet, the apparatus with which the automobile accomplishes this is a mere toy, and almost as trifling in cost.

(Continued to page 76)



\$71 is all I ask to
 F.O.B. FACTORY
 pump water for life

Yes, you can now put the Delco Waterboy in the homes you build for less than ever before. Only \$71.00 is the new, reduced, f. o. b. factory price.

Talk about value for your money! This is certainly a case where you get it—value that will help you sell or rent your homes at greater profit.

And how your purchasers or tenants are going to appreciate the greater efficiency of the Delco Waterboy! For, as with all Delco Water Systems, it

operates against 30 pounds pressure—three times as much as ordinary pumps. This means plenty of force behind the faucets. And it also means *more water*—fully 20% more per hour.

Besides the Waterboy there's a complete line of Delco Water Systems for deep and shallow wells—all with prices substantially reduced.

Mail the coupon and let us send you full details. Do it today.



A GENERAL MOTORS VALUE

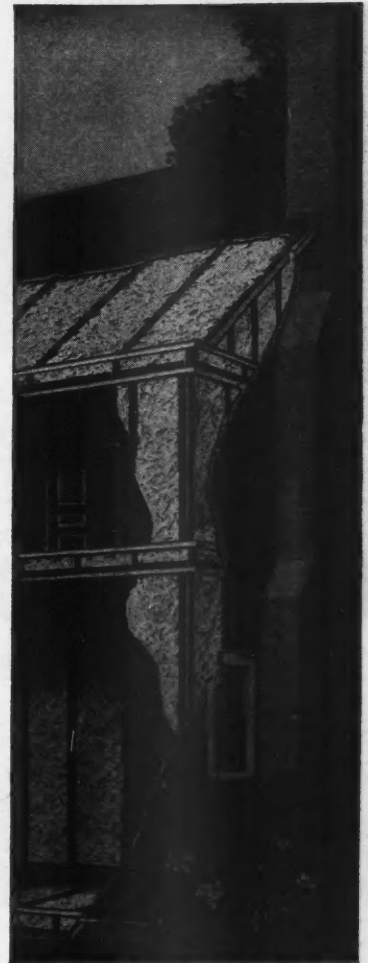
Delco Appliance Corporation,
 Dept. C-17, Rochester, N. Y.
 Please send me, free, illustrated literature on the
 Delco Waterboy and other Delco Water Systems.

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1-181

INSULATE with U. S. MINERAL WOOL

- COLD PROOF
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- HEAT PROOF
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- SOUND PROOF
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- VERMIN PROOF



U. S. Mineral Wool is the most efficient barrier to heat, cold and sound of all insulating materials.

The exceptionally high percentage of encased air is not equaled by any other product.

From a sanitary standpoint, no other material offers a like protection from vermin and disease germs.

U. S. Mineral Wool is indestructible and being entirely mineral resists fire like solid stone.

Sample and descriptive folder on request

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U. S. MINERAL WOOL CO., DEPT. B.
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Send FREE sample and illustrated booklet to

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 Address.....
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Here is an EXTRA MONEY tool!

Now is the time to make EXTRA dollars with SKILSAW SANDER. There are hundreds of small jobs to be done if the price is right. With SKILSAW SANDER you can be the lowest bidder. Weighs only 18 lbs. yet does the work of much larger equipment. Over 3/4 H.P. Surfaces wood, metal or stone perfectly without ripples.

FREE

We will demonstrate SKILSAW SANDER on your own work. Write for details.



SKILSAW, Inc.
3311 Elston Ave.
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Gentlemen:

- Send me information about SKILSAW SANDER.
 I will gladly watch a demonstration.

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SKILSAW SANDER

time-saver!
space-saver!
power-saver!

MONEY MAKER



This remarkable machine cuts costs as quickly and as surely as it cuts wood! Does the work of five ordinary machines—eighteen different everyday jobs—faster and at less cost! Cross-cut saw, rip saw, jointer, shaper and router—five machines in one . . . at the cost of one. Ball-bearing throughout. Write for full particulars.

AMERICAN SAW MILL MACHINERY CO.

61 Main Street

Hackettstown, N. J.

THE 20th CENTURY WOODWORKER

LETTERS

from Our Readers

(Continued from page 74)

I maintain, that what we want most in a home are comfort and convenience, and until we can offer these things, we cannot hope for many buyers. We cannot have convenience if our path is strewn with a multitude of stairs, doors, and unnecessary steps, nor without proper air conditioning and ventilation.

If we were to buy an automobile in the same manner that we buy a house, we would be obliged to deal with a dozen different salesmen, each supplying some particular part of the car, to be assembled by our local contractor. And if the parallel were complete, not one of these items would be manufactured with any regard for its co-ordination with any other. If we look about us, we see a cast-iron sink, a porcelain enameled sheet metal stove, a sheet steel refrigerator with Duco finish, a millwork kitchen cabinet, perhaps a cast-iron furnace, which, while it does not occupy all of the basement, like the dog in manger it prevents anything else from doing so.

Now, honestly, is it fair for a young couple to put themselves in debt for the next ten years, for a mess of pottage like this? They will live to see better things than we ever dreamed of. Why should they buy our old junk that we have not materially improved in the past twenty-five years, and are still dumb enough to think that we can get rid of like we did when it was new?

I am designing a single combination unit, which performs all of these functions and more. It does not require the manufacture of any more items than are now manufactured, but it co-ordinates them into a single combination, independent of the structure it serves, and therefore can be used with any type of construction. When the manufacturers supply such co-ordinated units to the local builders, they will be more nearly on a parity with the automobile industry.

H. E. DUDREY, President,
Dudrey Realty Co.

Will Floors Laid Directly on Ground Be Satisfactory?

Villa Park, Illinois.

To the Editor:

I am planning an English Village with a double row of small cottages without basements and probably with a central heating plant. The places will all be about 22 by 30 feet, will be built of common brick and stone veneer, and will contain a kitchen, dinette, large living room, bedroom and bath, with closet for roll-away bed.

Now I would like to know if there is any way of doing away with floor joist and sub-floor, assuming that linoleum is to be used as a floor covering. Do you know of any construction where this has been done and if so, just what method was used. It has always been a question in my mind whether or not a saving can be effected and if the floor can be kept dry.

I am planning these cottages to rent, and not to sell, figuring on getting school teachers and young couples in the village. Estimated cost \$2,000 without landscaping or heating plant.

I would appreciate any ideas you may have that would help me perfect my idea and make it successful.

ROBERT L. MCKEE.

(Continued to page 78)

INSULMESH

THE PLASTER BASE THAT DEADENS SOUND, INSULATES AND REINFORCES



Quality plaster work can be obtained at low cost where Insulmesh is used. The overlapping steel mesh becomes imbedded in the plaster and prevents cracking. The corrugated board backing provides a perfect 3/8" air-cell insulation. The rigid Insulmesh sheets are easily handled, quickly installed and economically plastered.

Write for sample and price.

TRUSCON STEEL COMPANY
Youngstown, Ohio

Warehouses and Offices in
Principal Cities
Dealers Everywhere



Shipping carton to protect Insulmesh

TRUSCON The Most Complete Line

Save when you Build and Make Houses Easier to Sell



Photo by Leet Bros.

Development of Shannon & Luchs Construction Co., at Washington, D. C. Outside walls of houses finished with shingles stained with Cabot's Creosote Shingle and Wood Stains.

Finish your next development with wood shingles beautified and preserved with the well-known Cabot's Creosote Shingle and Wood Stains. The cost is much less than for painting. Made by an exclusive, patented process, these stains sink into the wood like dyes, instead of covering the surface with a painty film. The pure, refined creosote vehicle *rot-proofs* shingles, making them last for many years, without loss of color.

Then, tell prospective purchasers that the colors are fast and shingles will last because they have been treated with Cabot's Creosote Stains. This is a strong selling point.

Cabot's Creosote Shingle and Wood Stains may be bought anywhere, but if you wish a color card, with more full information, send in the coupon below. No obligation.

Cabot's

Creosote Shingle and Wood

Stains

Made by the makers of Cabot's Home Insulating "Quilt" and Cabot's Collophanes—Modern Scientific Products for all Paint Uses.

Samuel Cabot
Inc.

141 Milk St., Boston, Mass.

Gentlemen:

Please send me color card of Cabot's Creosote Shingle and Wood Stains.

Information on Cabot's Heat Insulating "Quilt."

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Address.....

Am.B. 3-32

TRUDEAU
NOW **DOUBLES CAPACITY**

With orders for nearly 5 million DUNBRIK—its selection by the State of N. J.—Trudeau is compelled to double capacity. Doesn't this prove beyond question its merit and ability to win over all competition? There are hundreds of other localities where the manufacture of Dunbrik offers as good, or better, possibilities for the man with foresight and ambition to start a business of his own.

PRODUCTION COST LESS THAN \$600 Per M

Capacity 24,000 per Day

RECESSED for LIGHTER WEIGHT STRONGER BOND, EASIER TO LAY, BIG SAVING IN CONSTRUCTION

This Dunbrik Line-production Machine makes superior brick at such an amazingly low cost that it gives you the "whiphand" over competition. You supply the entire market—common, tinted, and face brick. Send for complete data. Only modest investment required for this profitable stable enterprise, protected by exclusive franchise.

Seven Other Opportunities for Local Manufacturing

Each one offering substantial earnings. Each a leader in its field. Each one with a stable and growing market and utilizing low-cost local materials. No special building required. Learn all about these 8 exclusive manufacturing opportunities that can be started for as low as \$50. Send for illustrated booklet today. Don't delay. One of these opportunities may mean manufacturing independence for you.



W. E. DUNN MFG. CO., 450 W. 23RD STREET and Affiliated Companies. HOLLAND, MICH.



The AMERICAN METHOD PAYS BIG PROFITS

Hundreds of old floors will be resanded, waxed and polished during Spring house cleaning time. You can easily get a good share of this work with the American Method. This method enables you to do the refinishing complete, so you really make two profits.

We help you get started with FREE advertising matter that brings in the business. Get started NOW so you'll have ample time to pass out this advertising before this refinishing business opens up. Experience unnecessary. Small down payment starts you. Write at once to

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511 South St. Clair St. Toledo, Ohio

**FREE TRIAL
NO RISK
LEVEL & TRANSIT**

**A Fully Equipped
High Grade
Instrument**

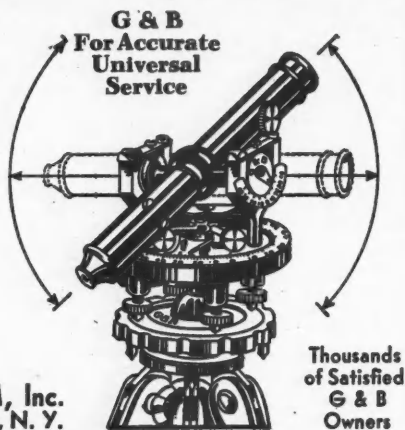
**ACCURATE AND
DURABLE**

Reasonable in Price

**EASY TO HANDLE
1932 MODEL 45**

Ask Your Dealer or

GEIER & BLUHM, Inc.
670 River St., Troy, N. Y.



This attractive interior Spanish stair rail is but one of hundreds of unusual designs we have illustrated. Send measurements—we handle the details.

GUARANTEED Wrought Steel

Buy direct from us. Balconies, Rails, Grilles, Fences, plain and ornamental, with iron clad guarantee of satisfaction or replacement. Extremely low prices now prevail. Designs submitted promptly on receipt of rough sketch; counsel extended on any special problem of design or construction. Wrought steel adds increased value, beauty and distinction to any building. Use more of it.

Estimates . . . Permit us the courtesy.

**CINCINNATI IRON FENCE
COMPANY, INC.**

2033 Spring Grove Ave., Cincinnati, Ohio

LETTERS

from Our Readers

(Continued from page 76)

Farm Homes and Buildings

Bowstring, Minn.

To the Editor:

I have taken your magazine several years; in fact, I think I was one of the first subscribers. In all this time I have found nothing to complain of but I do wonder if architects and builders generally know that farmers live in houses or rather, that they need a special type. Of course, agricultural engineers and architects look to the farmer's interests, but the average farm house plan is either sprawled over a good sized corner of the farm or it looks as if the architect had said, "Anything is good enough for the farmer."

And whoever thinks of financing a farm building program? Yes, I believe if the life insurance companies and the dealers would look into the matter, they would find here a profitable field for investment, though, of course, only the dairy farmer or those in similar occupations could make monthly payments.

I followed carpentering and building for several years and now as a farmer am still in the building game. I know that the farm building, house or barn in the same price class is harder to understand and needs more studying than the city home. Many a farmer could be making twenty-five to fifty per cent more than he is now making if he could put up suitable buildings; for these are the farmer's factories.

L. T. ROBERTS.

Better Chance for Small Concerns

Washington, D. C.

To the Editor:

The long continued business depression, which has resulted in large numbers of mechanics being thrown out of work, is beginning to have some considerable influence in the direction of decentralization of industry.

Mechanics who have lost their jobs in factories of various kinds where they perform one or two operations in a series of divided labor are tending to go into business for themselves as producers of complete articles.

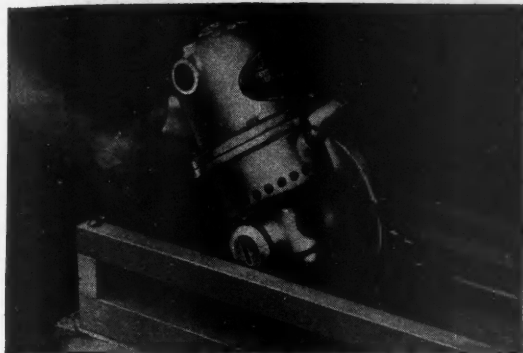
Woodworkers, for instance, who may perhaps for years have performed some mechanical job in woodworking and millworking establishments are now setting up business for themselves. Not only do they turn out a long list of articles of wood but they are competing for job work with, perhaps, the establishments where they were formerly employed. Carpenters, unable to get wage employment are setting up shops and are soliciting piece work. This revival of jobbing and increase of the number of men "on their own" is expected to lead to a considerable expansion of the use of lumber for purposes where it has been more or less displaced by other industries.

These men are claiming that mass production does not have such great cost advantage over unit production as has been supposed. In fact, they maintain that they can supply some sorts of articles at a lower price to the merchants and at a higher profit to themselves than the mass manufacturer can.

THEODORE KNAPPEN.

National Lumber Manufacturers Association.

Readers are invited to write this department their views on any subject pertaining to the building industry. Letters should not exceed 300 words.—Editor, AMERICAN BUILDER AND BUILDING AGE.



Carter Electric Stone Saw No. W306

Fast, Smooth, Clean Cuts in Tile with a Carter Electric Stone Saw

THIS compact Stone Saw driving the abrasive wheel at the high speed of 2000 R. P. M. cuts tile cleanly and quickly. By using one of these Saws you are assured of smooth ends and perfect corners—no ragged, chipped edges, no waste when it is necessary to split tile in order to break joints.

Put one of these Stone Saws to

work on your next job, you'll find it does away with hours of slow, tedious, material wasting hand work.

We will be glad to demonstrate how easily the Carter Stone Saw works.

Drop us a line telling where you would like to see it tried or if you would prefer, we will send complete description of this convenient tool.



THE R. L. CARTER COMPANY

116 Elm Street :: :: New Britain, Connecticut

DAHLQUIST COPPER BOILERS

For AUTHENTIC Performance and Low Cost

When specifying new hot water service equipment, whether for large industrial boilers or household units—the greatest satisfaction and lowest ultimate cost is obtainable only by securing a Dahlquist-made boiler.

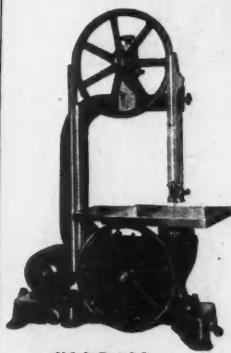
Dahlquist Copper Boilers are the finest on the market and offer patented features found in no other boiler.

Dahlquist Patented Super-Aquatherm which cuts the cost of fuel and Dahlquist Turbo which stops "Mud" accumulation in the boiler revolutionize the home hot water service.

Architects and heating engineers may rely entirely on Dahlquist workmanship and experience, whether for range boilers, automatic storage boilers or heavy pressure boilers.

Write for full particulars.

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



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Add Novelty to YOUR WORK

Use this sturdy, dependable Band Saw on your building jobs. Add that touch of novelty and originality which intrigues the buyer. A portable unit you can take to the job. Operates from any lampsocket. Fast and accurate. Extra large capacity. Saws 12 inch material. Ball bearing thruout. Reasonably priced. Send at once for complete catalog of Portable Electric Woodworking Machines, that will help you show a profit on your building jobs.

Heston & Anderson
203 Park Ave., Fairfield, Iowa

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ALL SILVER LAKE
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SILVER LAKE COMPANY
NEWTONVILLE, MASSACHUSETTS

MAKES ITS OWN DISPLAY

GUARANTEED
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LOOK FOR THE
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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.

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World's leading manufacturer of sheet metal building materials.

SAWS THAT SAVE

Speedmatic Saws

Types K-8 and K-9

You'll never know what a hand power saw really can do until you've owned a SPEEDMATIC. Put one on your next job—and further reduce your costs. Type K-8 cuts 2 1/4", weighs only 12 lbs., and has finger tip depth and angle adjustments—only \$35.00. Type K-9 is a sturdy tool for heavier work up to 3 1/2". Think of ripping 3" stock at rate of 14 ft. per min. or cross cutting a 2" x 12" in two seconds! Guaranteed to cut that fast! Other features you will want to know about so ask for a demonstration or free bulletin—no obligation. Also manufacturers of Take-About Sanders, Speedmatic Floor Surfacers, Beaver and Ever-Ready Woodworkers.

PORTER-CABLE-HUTCHINSON CORPORATION
1721 N. Salina St., Syracuse, N. Y.



Type K-9

More MIXER for Your MONEY

\$169.00

F. O. B. Columbus
On Steel
Wheels

Get latest catalog on Jaeger all-steel, roller-bearing 3 1/2 S trailers with "Dual-Mix" high speed drum.

POWER LOADER FILTERS:
3 1/2, 7, 10S sizes.

NON-FILTERS: 7S to 56S sizes.

Write for prices and details.

**THE JAEGER
MACHINE COMPANY**

521 Dublin Avenue, Columbus, Ohio



On Rubber
Tires \$179.50

A Housing Leader Talks to the Point

(Continued from page 32)

withholding state aid unless the local financial situation is kept in good shape. Only in this way can local governments be restrained in their financial operations so that assessed valuations of real estate will not have to be blown up like balloons and excessive real estate taxes placed on these valuations in order to pay wasteful governmental expenditures.

"Another thing we are working on now," said Mr. MacDougall, "is the Building Code. For three years we have been preparing a revised code. Finally the code has been completed and presented for city approval. In spite of the fact that the code is a vast improvement over the old and provides an excellent basis for going ahead with new construction there is still a disposition to make changes in it.

"One of the most valuable provisions in this code is one which permits us to erect 'fire-protected' construction in nine-story apartment buildings at a lower cost than fireproof construction. This enables us to build apartment houses much more economically and at a sufficiently lower cost per room to bring room rent down to a figure that families can now afford to pay."

"But it is not an easy job these days to produce needed structures with good value at a cost the public can stand," he declared. "Everywhere you turn, obstacles are put in your path to prevent the smooth combination of factors that go to make up a successful operation."

"Coming back to the housing situation, Mr. MacDougall, what do you think of the new metal houses that are being heralded this spring?"

"I can answer that question in this way," he replied. "We have a strict rule in our office not to discuss or debate building construction ideas that are merely in the blue print stage. Until somebody has the courage and the money to actually try the idea out in practice and proves it to be feasible in a practical way, the idea means nothing to us. Maybe some of these radical houses will work out but somebody with money is going to have to prove it."

What's New in House Construction

(Continued from page 30)

crete slabs, the report declares, and floors of sheet steel panels have been developed. Cork, rubber, and compositions are coming into use and if these floor surfaces can be made satisfactory without the use of rugs, they offer decided advantages from the sanitary, labor-saving and economic standpoints. Floor surfaces may be made of plastic in the future, the committee suggests.

On the subject of roofs, the committee points out the advantages of flat roofs as opposed to sloping roofs. Flat roofs can be used for sun baths, sleeping quarters, for recreation and social intercourse, the report says.

The committee believes that certain rooms of the house can be fabricated complete, such as the kitchen or the bathroom, and be set in place as the building is erected.

With regard to insulation, the committee emphasized its benefits and declares that "future developments in house refrigeration, already on the way, will necessarily call for insulation. It appears likely that the dwelling of the future will be well insulated, of very tight construction and have controlled ventilation."

The labor-saving devices that have been extensively developed for the use of the housewife are mentioned by the committee and also various labor-saving devices now available commercially for the use of workmen on houses, such as: electric hand saws, hole saws, nailers, hammers, machines for installing weatherstrip, planes, mortisers, shapers, stair sets, screw-drivers, drills, and grinders, polishers, air-driven plastering machines, electric pumps, work benches, tool boxes, etc.

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