

AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 42.

CONTENTS FOR OCTOBER, 1926

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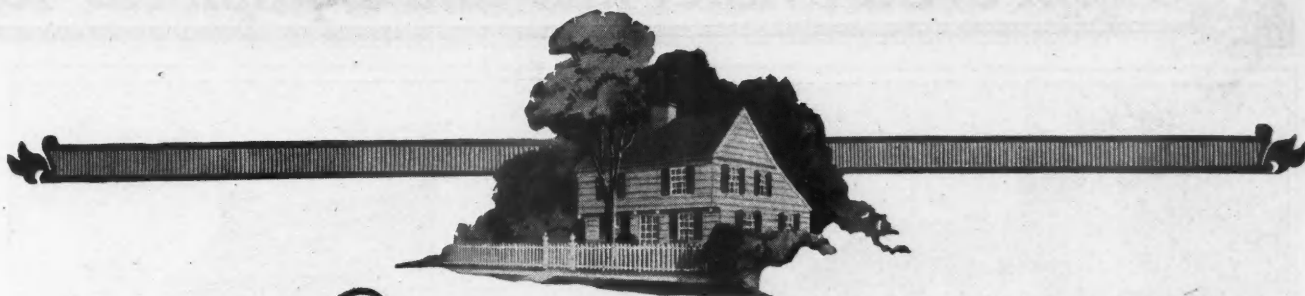
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New Standards of Popularity and Approval

Complete Specifications and Typical Working Plans for the
National Demonstration Model Homes to be
Erected in 28 Important Cities

34 LEADING MANUFACTURERS AND
ASSOCIATIONS CO-OPERATE TO SHOW
HOW BETTER HOMES SHOULD BE BUILT

By L. PORTER MOORE

President Home Owners Service Institute

LAST month I outlined our general arrangements for erecting 360 model Demonstration Homes this fall and winter in 28 key-cities. All of these will be homes of superior materials and construction, yet popular in size and cost. The plans and specifications for these Model

Homes have been worked out with greatest care; and to give all builders everywhere the benefit of these approved standards we are presenting herewith a typical set of the working plans and the specifications for these Model Homes:

EXCAVATION AND GRADING

Scope of Work—This contractor shall provide all necessary materials and labor for the satisfactory performance of his contract. He is to stake out the building, clear the site, do all necessary excavating, subsequent back filling, and rough grade the site.

Layout of Work—Stake out the building in the proper location on the lot and establish first floor level where directed, and proceed only after inspection of lines and levels and acceptance by the owner.

Preparation of Site—Protect by substantial guards all existing trees, shrubbery, etc., which the owner directs are to be saved. Cut down and remove all trees, shrubbery, etc., within the lines of the future excavation after securing specific instructions to do so from owner.

Excavation—Remove all top loam from parts to be excavated, and pile same at location on site where directed, safe from molestation. Excavate for basement, foundation walls and footings, piers, etc., to exact depth required as shown on drawings and to a line eighteen inches outside finished masonry walls. Bottom of all excavations shall be left free from rubbish, reasonably smooth and firm. Excavate for trenches, leader drains, window areas and basement floor drains and for dry wells.

MASON WORK

Scope of Work—This contractor shall provide all necessary materials and labor for the satisfactory performance of his contract. He is to build all footings, foundation walls and reinforced concrete work, lay cement floors and lay up all brickwork for walls, chimney, KERNERATOR (Incinerator), fireplace, steps, walks, etc., and build in all steel, steel sash, and wrought iron work.

Materials—Cement shall be LEHIGH Portland Cement manufactured by the Lehigh Portland Cement Company, Allentown, Pa. Sand shall be clean, coarse, sharp and free from vegetable matter or other impurities. Aggregate shall be clean crushed rock or gravel not less than ¾". Concrete blocks shall be made of LEHIGH Cement according to standard specification of the American Concrete Institute. Hydrated lime shall be TIGER MASONS as made by the Kelley Island Lime & Transport Company, Cleveland, Ohio. Brick shall be hard burned COMMON brick and where used for facing shall be selected for both color and quality. Hollow structural tile shall be NATCO, made by the National Fireproofing Co., Pittsburgh, Pa. Flue linings shall be standard size clay for all flues. KERNERATOR equipment by

Kerner Incinerator Company, Milwaukee, Wis. Steel sash shall be FENESTRA, as manufactured by Detroit Steel Products Company, Detroit, Mich.

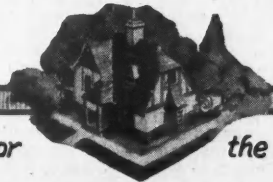
Footings—Required under all walls, piers, columns and chimney, 12" deep to widths shown on plans, to be concrete consisting of 1 part LEHIGH Portland Cement, 2½ parts sand, and 5 parts coarse aggregate. Bed of trench level and firm before concrete is poured.

Foundation Walls—To be poured concrete as specified for footings or hollow concrete block 8" x 12" x 16" laid up accurately to lines in cement mortar of 1 part LEHIGH Portland Cement, 3 parts sand and 10 per cent by volume of lime; hollow spaces in block filled with cement 1:9 mix.

Basement Window Areas—To be built of concrete block, or poured concrete 1:2½:5 mix, carried below frost line, area curbs finished with brick.

Cement Plaster—Exterior face of basement walls from grade down to footings may be finished with cement mortar of 1 part LEHIGH Portland Cement and 2 parts sand.

Chimneys—Build as shown on plans, of hard burned brick laid on full bed of cement mortar, joints not to exceed ¼", all brick thoroughly bonded. Build in all flues with clay flue linings, sises as shown on plans, chimney topped out above roof with brick as shown on plans.

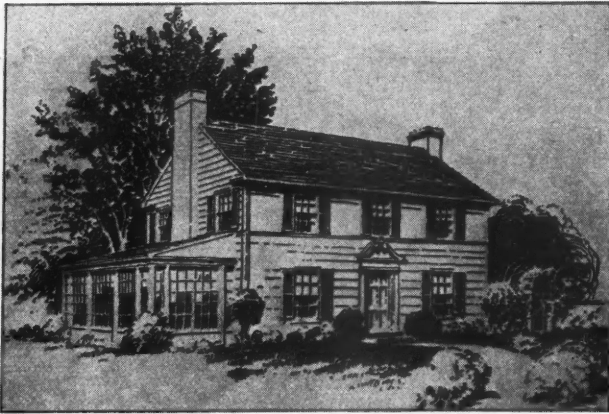


Approved Materials and Equipment for

the National Demonstration Model Homes



Approved Materials and Equipment for



One of the National Demonstration Model Homes in Wood Siding and in Brick. See accompanying working drawings and specifications of this house.

Fireplace—Build of hard burned brick where shown on plans, fireplace, with 4" lining of fire brick, and equipped with approved patent iron throat and damper. Pour concrete bed for fireplace hearth, facing and hearth to be of brick. Provide ash dump with clean out door in cellar.

Brick Work—At entrance doorway lay up in cement mortar, steps of selected brick, as shown on plans.

Cement Floors—All basement floors shall be concrete, 1 part LEHIGH Portland Cement, 2½ parts sand, 5 parts coarse aggregate. Earth bed shall be leveled, soft spots filled and tamped before concrete is poured. Concrete bed to be 3½" thick and overlaid with ¾" top of 1 part LEHIGH Portland Cement to 2 parts sand. Pitch floors to drains. Basement floor shall not be put down until all pipes under floor have been laid, inspected and approved, and the trenches properly filled and tamped.

Walks—From front entrance platform and from service entrance, build walks to street of brick on firm bed of sand thoroughly tamped; or cement finish on 3" concrete bed, as requested by owner.

Incidental Iron—This includes steel beams where marked on drawings, 4" lally coils, cast iron clean out doors at foot of flues, wall sill anchor bolts, joist hangers, ornamental wrought iron, etc., as shown on plans or details; to be furnished and set by this contractor.

Kernerator—The contractor shall furnish all incinerator parts and shall furnish labor and materials necessary to install where shown on plans one KERNERATOR arrangement No. C-7, according to plans and specifications furnished by the Kerner Incinerator Company, Milwaukee, Wis. All work is to be done in a neat and workmanlike manner and all materials must be the best of their respective kinds.

Steel Windows—All windows shall be FENESTRA, manufactured by DETROIT STEEL PRODUCTS COMPANY, Detroit, Mich., from solid rolled steel bars and shall be complete and self contained with necessary hardware included. Windows shall be painted one priming coat to protect them in shipment.

Casement Windows—All windows, except those in the basement, shall be FENESTRA Casements, pivot-ended and welded at all corners and equipped with extension hinges for easy cleaning. The jamb member of the hinge is to be a hot-rolled steel angle and swing leaf member, a steel drop-forging, both members riveted and welded. Hinges to turn on bronze hinge pins set in bronze bushings. Bushings to be eccentric to permit field adjustment. All swing leaves shall open out and shall close with two-point flat contact weathering and be further protected by baffles.

Hardware—All hardware shall be malleable iron finished in dull black (or solid bronze if so specified). Handles to be shipped unattached to prevent injury during shipment and during building operations. Handle bolts to be equipped with spring friction clevises to insure firmness in operation. Handles shall close against bronze strike plates and shall be cam-acting. FENESTRA "Peg and Stay" or "Sliding Stay" Operator shall be shipped unattached. All window openings shall be made plumb and true and casements installed correctly in accordance with manufacturers' details.

Mastic, as supplied by the casement manufacturer, shall be applied at head, jambs and sill to assure a sealed joint between the casement and the building construction.

Basement Windows—All basement windows shall be FENESTRA with jamb and sill formed of one continuous piece. Jamb section shall be constructed with a protruding fin for anchorage and shall have inside and outside legs to guide the workman constructing the wall.

Locks are to be self-centering and equipped with wedge pin locking devices with chain and hanging ring for holding the window open.

ROOFING AND SHEET METAL WORK

Scope of Work—This contractor shall provide all necessary materials and labor for the satisfactory performance of his contract; he shall lay up all finished roofs, and build in all sheet metal work as shown on drawings and as required.

Materials—Insulation shall be CELOTEX Standard Building Board as manufactured by The Celotex Company, Chicago, Ill. Sheet metal shall be 16 oz. ANACONDA Copper 99.9 per cent pure for leaders and gutters, flashings, valleys, etc. Roofing shall be of ASPHALT shingles known as Richardson Multichrome Roofing, built of Richardson Super Giant Shingles weighing approximately 285-290 lbs. per square, size 10" x 14" as manufactured by The Richardson Company, Lockland, Ohio.

Sloping Roofs—To be prepared for roofing finish by layer of CELOTEX board securely nailed over tight sheathing by others, joints between boards butted close. Flashing gutters and valleys shall be built in as specified under sheet metal before finished roofing is laid. Roofing shall be laid up in strict accordance with directions of manufacturer and shall be neatly cut to fit hips and valleys. The color of the roofing shall be as selected after conference between builder and Richardson Company representative to determine best combination.

Sheet Metal—All intersections of roof with vertical sections of every nature shall be flashed and counter flashed with 16-oz. soft copper. Flashings shall be generally full length pieces, locked and soldered. Base flashings shall not be less than 8" high and shall project at least 4" and shall be turned down over base flashing not less than 4", and edge turned back ½", step flashings shall be used where vertical surfaces occur in connection with pitched roofs. Steps shall lay not less than 3". All pipes passing through the roof shall be flashed and counter flashed. Flashing shall extend not less than 4" on the roof and shall be caulked into the hubs of the pipes or embedded in elastic cement and held with brass clamps. All projecting wood members such as window heads, cornices returning against walls, etc., shall be flashed.

All valleys shall be lined with 16-oz. soft copper. Sheets shall have no longitudinal seams and shall be of sufficient width and so cut as to increase in width from top to bottom. They shall extend under roof covering at least 6", and shall have their edges turned back ½", and shall be secured with cleats.

Leaders of 16-oz. hard copper, sizes and location as marked on drawings, shall be held 1" clear of walls by approved fasten-

ers. Laps for leaders shall be at least 1¼" tinned both sides. Slip joints 1½" shall not be driven.

Gutters shall be of 16-oz. hard copper with approved brass hangers built along all eaves to provide complete rain water drainage, of proper size and pitched to leader outlets. Ends of gutters tinned 1½" both sides, lapped 1" and well soldered or have approved type slip joint.

Saddles—Chimney crickets or saddles shall be covered with copper and flashed tightly into brickwork.

Strainers—Leader outlets shall be protected by approved type wire strainers of No. 14 gauge copper wire.

Solder—Shall be best grade composed one half pig lead and one half block tin, new metals. Resin shall be used as flux.

CARPENTRY AND MILL WORK

Scope of Work—This contractor shall provide all necessary materials and labor for the satisfactory performance of his contract; he shall furnish and install all framing lumber, finishing lumber, exterior and interior mill work and cabinet work, lay linoleum floors and set all hardware, install window shades, screens, etc. This contractor shall do all cutting and patching of woodwork necessary for other trades. He shall furnish and maintain ladders, runways, etc., and build store shed and privy.

Sheds—Build store shed for safe keeping of blueprints, etc., and protection of building material, and privy for use of men of all trades.

Materials—Structural lumber and rough sheathing, California White Pine for exterior millwork and interior trim, and finished oak floors, to be LONG-BELL as manufactured by The Long-Bell Lumber Company, Kansas City, Mo., and bearing their name impressed in each piece. Floor joist bridging to be TRU-TYE BRIDGING 2 x 10 x 16 as manufactured by Blaw-Knox Company, Pittsburgh, Pa. Wall sheathing to be CELOTEX Standard Building Board as manufactured by The Celotex Company, Chicago, Ill. All interior doors to be MIRACLE doors as manufactured by The Paine Lumber Company, Ltd., Oshkosh, Wis. Kitchen dressers to be KITCHEN MAID as manufactured by The Wasmuth-Endicott Company, Andrews, Ind. All hardware manufactured by P. & F. Corbin, New Britain, Conn. Linoleum floors to be GOLD SEAL INLAID manufactured by Congoleum-Nairn, Inc., Philadelphia, Pa. Window shades to be TONTINE as manufactured by E. I. du Pont de Nemours & Co., Inc., Newburgh, N. Y. Screens shall be built of ANACONDA Bronze Wire.

Framing Lumber—Shall be well seasoned and free from large loose knots or other imperfections that would impair strength or durability, sawed true to dimension and properly sized. Each piece bearing the trademark of The Long-Bell Lumber Company, Kansas City, Mo. Girders, floor joists, studding, plates, sills and roof rafters shall be Southern Pine or Douglas Fir No. 1 Common of proper size as shown on plans.

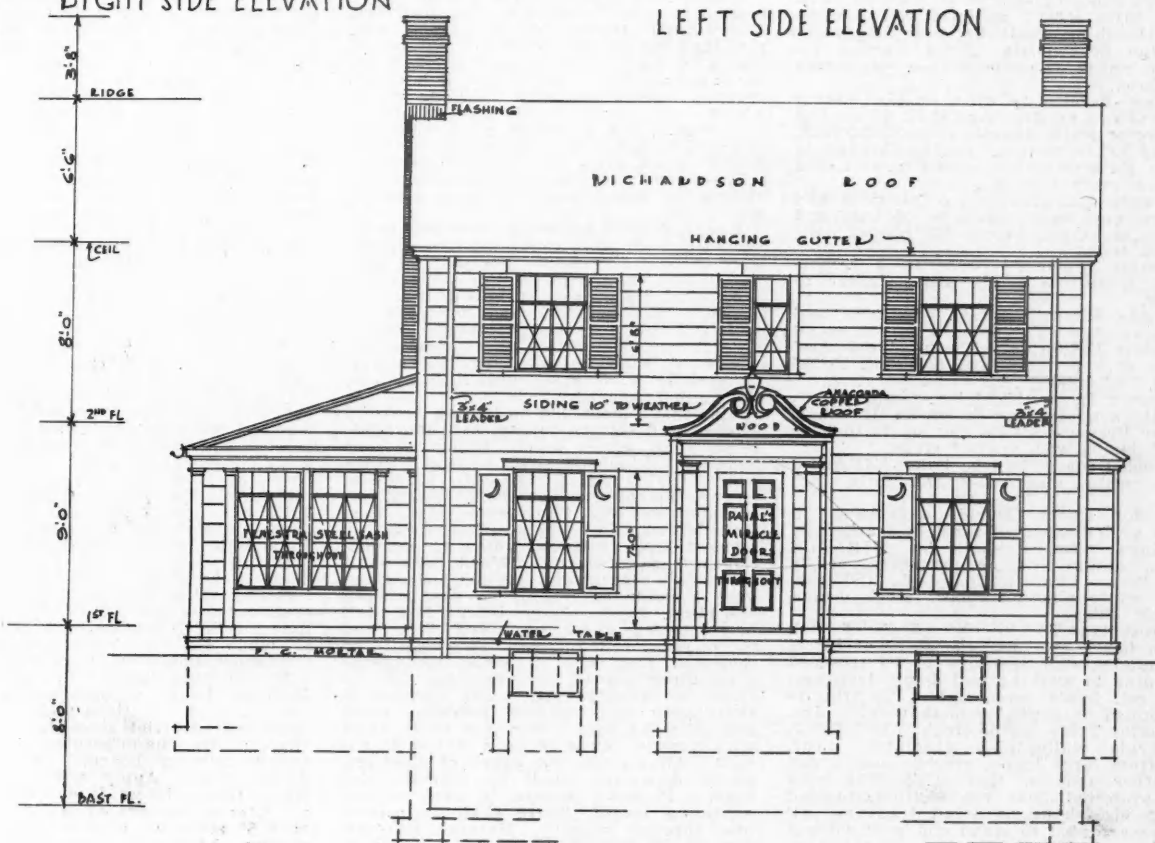
Framing—Sills anchored into foundation wall. Frame walls erected in a substantial manner, level, true and plumb, corner posts securely braced. Joists laid level and true, accurately spaced and securely spiked. Set double joists 4" apart under all parti-

the National Demonstration Model Homes



LIGHT SIDE ELEVATION

LEFT SIDE ELEVATION



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

ARCHITECTS SMALL HOUSE SERVICE
BUREAU - ARCHITECTS
JOHN FLOYD YEWELL
ARTHUR DATES LINCOLN
CONSULTING ARCHITECTS

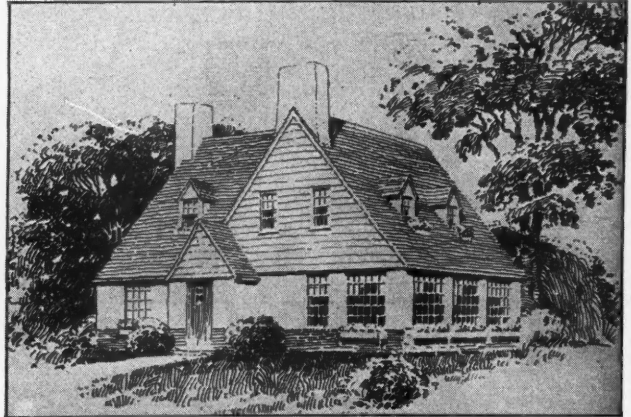
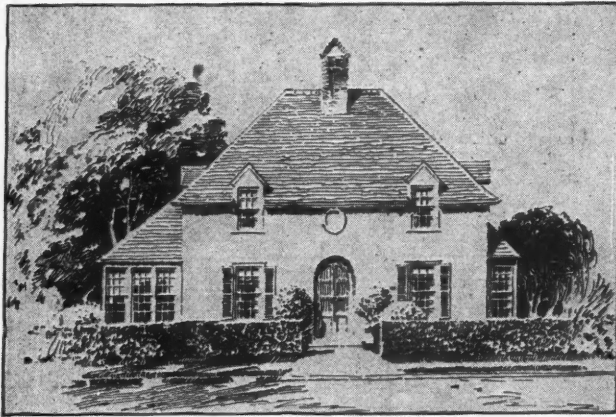
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PLAN NO 901-Z
DRAWING NO 1



Approved Materials and Equipment for



Two Other Alternate Exteriors for the Model Home Illustrated in the Working Plans Presented on These Pages. Study these plans for the approved standards established by this nation-wide home demonstration.

tions parallel to same. Double all header and trimmer joists and if over 8'0" long hang in iron hangers. Joists to have a row of TRU-TYE diagonal bridging through the center securely nailed. Interior partitions rest on single sill capped with double plates. Double studs at openings, truss all openings over 3'0" in width. Bridge studding of all partitions midway between floor and ceiling. No woodwork shall be placed within 1" of any chimney.

Fire Stops—Fill walls and interior partitions full depth of floor joists with cinder concrete held on wire lath forms.

Sheathing—Roofs to be sheathed with 25/32" x 5 1/4" matched No. 1 common laid up tight. Walls to be enclosed with CELOTEX Standard Building Board Sheathing, nailed solidly to exterior of stud framing, lengthwise on studs in accordance with directions of manufacturer. See CELOTEX detail sheet.

Rough Flooring—Under all finished wood floors 25/32" x 5 1/4" matched No. 1 common sheathing shall be laid diagonally over the floor joists. Drop flooring required under tile floors, top of beams chamfered.

Siding—Beveled redwood or pine siding where shown on drawings shall be applied to exterior walls directly over CELOTEX, spacing 10" to weather, nailing through to studs. Ends of siding boards to butt over studs in every instance.

Grounds—Set grounds around door and window openings, and back of base and picture moulding, to provide proper nailing for trim.

Exterior Millwork—To be stock LONG-BELL California white pine, similar to details.

Outside Plank Frames for Doors and Windows, Etc.—To be built up of sound and clear California white pine delivered to job with priming coat of paint, 25/32" frame, 1 1/4" sills.

Exterior Doors—Shall be of white pine, 1 1/4" thick paneled as shown on drawings.

Door Frames—All interior doors to have 25/32" jambs with applied stops.

French Doors—Shall be Paine MIRACLE doors, white pine stiles and rails, 1 1/4" thick.

Interior Doors—Provide and hang all doors as indicated, of sizes as marked on drawings. Doors shall be MIRACLE Doors, design 700, as manufactured by The Paine Lumber Co., Ltd., Oshkosh, Wis., white pine or veneer stock design 1 5/16" thick.

Thresholds—To be 5/8" x 3 3/8" of oak where floors are oak, elsewhere of birch.

Trimming—All openings to be trimmed according to working and detail drawings, nails set, joints made tight. No trim to be applied until plaster is thoroughly dry.

Interior Trim—To be stock LONG-BELL California white pine absolutely clear, free from large knots, cracks, shakes, sap or other defects, thoroughly kiln-dried and protected from the weather, molded and to size shown on detail drawings. All work warranted to stand one year without opening at joints, warping, cracking or showing other defects.

Base—Stock 6" molded similar to detail.

Picture Moulding—Stock 3/4" x 1 1/4" around walls in the living porch, living room and dining room just below the ceiling.

Bedroom and Coat Closets—To be supplied with shelf, hook strip and pole for clothes hangers.

Finished Floors—Over underflooring lay one thickness of best quality black building paper, joints butted. Floors of halls and all rooms not finished with linoleum to be oak 25/32" x 2" face, each piece bearing trademark of The Long-Bell Lumber Company, Kansas City, Mo. Lay 12" border around main rooms. All finished flooring to be kiln-dried and free from imperfections of any kind, to be laid perfectly level, driven up tight and nailed with steel cut 8d nails, butting joints to come over joists and to be well staggered. Floors after laying to be planed down and made ready for finish and protected by building paper.

Kitchen Dressers—Furnish and install where shown on plans KITCHEN MAID combination as manufactured by The Wasmuth-Endicott Company, Andrews, Ind.

Fireplace Mantel—Stock, white pine, similar to detail.

Stairs—Main stair to second floor to be erected in strict accordance with drawings. Risers and treads cut to exact size, ploughed for tongue of treads and risers. Stairs to be supported on 2" x 12" Y. P. carriages set level and true, wall bearings securely spiked to walls. Treads to be 1 1/16" oak, risers 25/32" pine, hand rail oak, newel and balusters pine, balusters spaced 2 to each tread. Basement stair pine, 1 1/16" tread, open riser, plain handrail.

Basement Partitions—Build sheathed partitions for boiler room, laundry, storage, etc.

Rough Hardware—Bolts, anchors, nails, screws and all other rough hardware necessary for a workmanlike job shall be furnished and erected under this contract.

Finished Hardware—To be selected from P. & F. Corbin stock and erected completely in place by this contractor. Make allowance of \$150.00 for purchase cost. A suggested schedule of hardware recommended by P. & F. Corbin, New Britain, Conn., is appended.

Linoleum Floors—To be laid on floors of kitchen and service pantry, and one additional room, either porch, dining room or bedroom. Linoleum shall be first quality Nairn GOLD SEAL INLAID Linoleum, Heavy Weight or Household Weight, as manufactured by Congoleum-Nairn, Inc., Philadelphia, Pa., color and pattern as selected from samples following suggestions of manufacturer. Wood floor shall be of 7/8" tongue and groove boards not over 4" wide, and shall be dry, smooth and clean. 1 1/2-lb. Congo. Lining Felt shall be cemented down on wood floor and thoroughly rolled. Linoleum shall be cemented over felt in strict accordance with directions of manufacturer. Seams shall be sand-bagged until Cement is thoroughly set. Where linoleum butts against wood base, cover edge of linoleum with quarter round securely nailed to the wall. All unprotected edges of linoleum, as in doorways, shall be covered with brass. If same pattern is used in two adjoining rooms, figure shall be continuous through doorway. Maintain temperature of 70 degrees F. where linoleum is installed.

Refrigerator—SERVEL Electric Refrigerator to be set up by SERVEL distributor in proper location where shown on plans.

Window Shades—Supply and install on all window openings above basement, and on doors where shades are required, win-

dow shades of TONTINE waterproof, washable shade cloth as manufactured by the E. I. du Pont de Nemours & Co., Inc., Newburgh, N. Y. Each shade shall be mounted on an O'Reilly 10-year guaranteed wood roller. Further each shade shall be equipped with a 1 1/2" hem at the bottom, a 1 1/4" wood slat with eyelet through center of same, and crocheted ring pulls, of color to match shade. Color of shades shall be determined after recommendations of manufacturer to carry out the scheme of interior decoration. Shades to be installed by a local shade dealer recommended by the manufacturer. Tassels may be used in place of ring pulls.

Screens—All screen cloth for door and window screens shall be of Antique finish commercial bronze wire woven 16 meshes per inch. This wire shall be what is known as ANACONDA Bronze Wire as manufactured by The American Brass Company, conforming in all particulars to the standards of The American Society for Testing Materials for bronze screen cloth. If rolling screen as ROLSCREEN is to be installed, provide proper pocket in window heads.

PLASTERING

Scope of Work—This contractor shall provide all necessary materials and labor required for the satisfactory performance of his contract, he shall furnish and install all board plaster base and wire lath where necessary, and finish all walls and ceilings above basement with two coats of plaster as specified.

Examination of Premises—This contractor is to examine all walls and parts to be plastered to assure proper nailing for CELOTEX and report any defects for correction before proceeding with work.

Temporary Heat—When necessary contractor shall provide and maintain heat by temporary use of heating system at direction of owner.

Protection of Work—Window and door openings shall be screened against the weather before any plastering is started. Cement and lime to be used for plastering must be stored in a safe place protected from the weather.

Material—Plaster base shall be CELOTEX Standard Building Board manufactured by Celotex Company, Chicago, Ill. Metal lath shall be black painted diamond mesh or equal 3 lbs. to square yard. Sand to be sharp, clean, gritty and well screened. Plaster to be neat GYPSUM for first coat on CELOTEX base; hydrated lime for finish coat to be TIGER FINISH as made by The Kelley Island Lime & Transport Company, Cleveland, Ohio.

Plaster Base—Apply CELOTEX Standard Building Board on interior of all walls, interior stud partitions and ceilings above basement in strict accordance with directions of the manufacturer, leaving 3/16" joints between boards. See CELOTEX detail sheet. Apply wire lath on wall where tile wainscot is specified; reinforce all interior corners of walls and ceilings with 6" strips of wire lath for crack prevention, bent into corners and securely fastened.

Corner Beads—All projecting plaster corners to be protected by galvanized metal corner beads of proper size, set plumb and true and securely fastened before plastering is started.

Plastering—Apply brown coat, thor-



Approved Materials and Equipment for

oughly mixed, put on uniformly, not less than $\frac{3}{8}$ " thick, well keyed into joints between CELOTEX boards and allowed to dry thoroughly before final coat is applied. Finish coat Hydrated lime, to give white smooth finish to be applied in strict accordance with following directions of manufacturer:

1. Use a watertight box in which to soak the lime.
2. See that box is free from all dirt.
3. Use only clean water and fill box about three-fourths full.
4. Sprinkle lime into water, allowing both to thoroughly unite.
5. Don't leave any lime dry or semi-dry on top of water when box is full. Water should slightly cover lime.
6. The best results can be obtained by soaking lime 24 hours.
7. The longer its soaks, the richer it works.

8. Lime half soaked leaves a half plastic putty; but when thoroughly soaked, it forms a smooth, easy working putty.

Place required amount of putty on mortar board. Form ring in same. Pour in water, then sprinkle in plaster paris to form about 25-75 plaster and putty gauging. Mix the two together thoroughly—applying evenly to walls and ceilings. Trowel sufficiently to bring to a smooth surface.

Scratch coat of plaster on metal lath under tile wainscot in bathroom shall be cement plaster containing sufficient hair to insure proper key.

TILE WORK

Scope of Work—This contractor shall provide all necessary materials and labor required for the satisfactory performance of his contract; setting tile floor and wainscot with FAIRFACTS Biltin accessories in bathroom.

Materials—Tile for bathroom floor shall be $\frac{3}{4}$ " square ceramic mosaic with neat border as selected. Tile shall be selected grade, straight, true and impervious. Tile for walls shall be 3" x 6" or 4 $\frac{1}{4}$ " x 4 $\frac{1}{4}$ " glazed enamel, non-crazing, free from blisters and imperfections of any kind, color as selected. Cap shall be of same materials as walls, moulded as selected by owner. All external and internal angles shall be rounded and integral with wall tile.

Built-in Accessories—Furnish and install FAIRFACTS Bathroom Accessories in best approved manner in bathroom where herein mentioned and as directed.

For Lavatory—

- 1—F115 Soap Holder
- 1—F161 Tumbler Holder
- 1—F330 Tooth Brush Holder
- 1—F320 White Glass Shelf
- 1—F301 Towel Bar
- 1—F5001 Medicine Cabinet

For Bath Tub—

- 1—F151 Combined Soap and Grip
- 1—F170 Sponge Holder
- 1—F303 Towel Bar

For W. C.—

- 1—F1 Paper Holder
- 1—F700 Door Stop

Setting of Floor Tile—Mortar for setting bed shall be 1 part LEHIGH Portland cement and 3 parts sand, not less than $\frac{1}{4}$ " thick, laid on 3" concrete bed, over deafening boards with top of floor beams chamfered. Portland Cement shall be uniformly dusted over setting beds preceding setting of tile. As soon as mortar beds have sufficiently set, ceramic tiles shall be washed with 10 per cent solution of muriatic acid.

Setting of Wall Tile—Scratch coat of plaster on metal lath shall be well keyed and scratched. Immediately before setting tile, scratch coat shall be moistened. Tile shall be thoroughly wetted in water, buttered and bedded, set to true lines and surfaces with close and even joints. Accessories shall be built in place with a minimum cutting of the tile to make a neat and workmanlike job. As soon as mortar setting bed has hardened, tiles shall be thoroughly washed down with clean water, and joints grouted with white Portland Cement.

Protection—All tile work shall be protected from damage by this contractor until finish of building.

Guarantee—This contractor shall furnish guarantee of workmanship and material upon completion of work.

PAINTING, DECORATING AND GLAZING

Scope of Work—This contractor shall provide all necessary materials and labor required for the satisfactory performance of his contract. He shall complete in satisfactory manner all painting and enameling on wood and plaster, staining of

woodwork, painting iron work, exposed piping and radiators, and finishing of floors, glaze all sash and reset all glass for doors or windows broken during construction.

Materials—Paint to be DUTCH BOY white-lead thinned with pure linseed oil or DUTCH BOY flattening oil as manufactured by National Lead Company. Enamel, stain and varnish to be VALSPAR as manufactured by Valentine and Company of New York. Use best pure turpentine and drier. Wall paper shall be MURALIA as manufactured and supplied by Baeck Wall Paper Co., Brooklyn, N. Y. All materials delivered to site in original unopened package. All glass for doors and windows to be A or B quality D. S. Window Glass.

Samples of Finished Work—Colors and design to be chosen by Owner in consultation with contractor from samples of adequate size furnished by the manufacturer.

Exterior Finish—All exterior woodwork, brick work where marked to be painted on drawing, steel sash and frames, etc., shall be painted with DUTCH BOY white-lead and pure linseed oil, the paint to be prepared on formulas hereinafter specified.

Interior Finish—Proposition "A"

Wood Trim—All interior doors, trim and woodwork of first floor rooms, and first and second floor stair halls, will be painted with DUTCH BOY white-lead and oil, the paint to be prepared on formulas hereinafter specified. Interior doors, trim and woodwork of second floor, with exception of hall, will be finished with VALSPAR enamel, stain or varnish.

Plaster—All plaster walls and ceilings of first floor rooms, and first and second floor halls and ceilings of bedrooms shall be primed and then painted two coats DUTCH BOY white-lead and oil, the paint to be prepared on formulas hereinafter specified. Size and finish plaster walls and ceiling of bathroom with VALSPAR enamel, as hereinafter specified. Use MURALIA wall paper on walls in all bedrooms in patterns as designated and supplied for each room by the manufacturer.

Interior Finish—Proposition "B"

Wood Trim—All interior doors, trim and woodwork of first floor rooms, and first and second floor halls, will be finished with VALSPAR enamel, stain or varnish. Interior doors, trim and woodwork of second floor, with exception of upstairs hall, will be painted with DUTCH BOY white-lead and oil, the paint to be prepared on formulas hereinafter specified.

Plaster—All plaster walls and ceilings shall be primed, plaster walls and ceilings of kitchen and service entry shall be finished with VALSPAR enamel, plaster walls of other rooms on first floor and first and second floor halls shall be covered with MURALIA wall paper, in patterns as designated and furnished for each room by the manufacturer. All plaster walls of second floor rooms, with the exception of hall, and all ceilings of first and second floor except kitchen and service pantry, shall be painted two coats DUTCH BOY white-lead, the paint to be prepared on formulas hereinafter specified.

Workmanship—Before applying any paint care shall be taken to see that wood surfaces are dry and in proper condition for painting. Apply coat of pure orange shellac to all knots and pitchy places in the wood surfaces to be painted. Do not use shellac under VALSPAR. Prime woodwork, putty all nail holes and other blemishes and sandpaper lightly between each succeeding coat; two finish coats of paint to be applied in strict accordance with the manufacturers' directions. Over woodwork to be enameled apply two coats Valentine's VAL-ENAMEL undercoating allowing 24 hours between coats. Let final coat dry 48 hours. This may be rubbed with powdered pumice for dull finish, or with rottenstone and oil for semi-gloss if preferred.

New Plaster Surfaces—New plaster surfaces shall be permitted to stand as long as possible prior to painting in order to thoroughly age, and then shall be treated with a solution made by dissolving two pounds of zinc sulphate in one gallon of water. After the zinc sulphate solution has been applied, sufficient time shall be allowed for the plaster to dry before priming.

Interior Finish on Floors—Floors shall be dry, smooth and clean. Fill pores of wood with Valentine's VAL-FILLER brushed on. Shortly before Filler sets up wipe off excess with burlap, rubbing the filler well into and across the grain.

Let dry over night. Apply priming coat of VALSPAR varnish thinned 20 per cent with pure turpentine and follow with two full coats of VALSPAR just as it comes from the can, allowing 24 hours between coats. Final coat must be allowed from 48 to 72 hours in which to dry before using floor.

Finish on Interior Doors, Stair Treads and Oak Hand Rails, fill with Valentine VAL-FILLER. Let dry over night. Apply one or two coats VALSPAR varnish stain just as it comes from can, allowing 24 hours between coats. If one coat of VALSPAR stain gives sufficient color, make second coat clear VALSPAR.

Finish on Radiators—To be primed and then finished with two coats DUTCH BOY lead in oil paint, prepared on formulas hereinafter specified, to match trim.

Glazing—All steel sash, and doors where required shall be glazed with best quality glass. Rebates on steel sash to be bed putted and glass held by spring glazing clips furnished by casement manufacturer. FENESTRA casement putty to be used. Swing leaves if removed for glazing shall be replaced in same opening from which taken.

ELECTRIC WORK

Scope of Work—This contractor shall furnish and install GE Wiring System (Group 1—1926) complete from the lighting company service to all outlets, locating outlets as indicated on drawings.

Wiring—The Electrical contractor shall do all necessary cutting for the installation of his work.

The Electrical contractor shall leave his work ready for the lighting company to connect to, doing all work required by their rules.

The work shall conform to the rules of the "National Electrical Code" and the local regulations governing electrical installations.

All necessary certificates shall be obtained by the electrical contractor at his expense and delivered to the architect before work is accepted.

The electrical contractor shall guarantee to make good any defects in his work which shall develop within one year of date of acceptance.

The electrical contractor shall furnish and install a complete bell system locating bells and buzzers as indicated on the drawings. The bell system shall be operated by a bell-ringing transformer feeding from a separate circuit on the lighting distribution panel. All bells, buzzers and push buttons shall be of high grade as approved.

Outlets shall be located as follows:

Wall light outlets—5 feet 6 inches above finished floor to center of outlet.

Wall switches—4 feet above finished floor to center of outlets.

Convenience outlets in kitchen, laundry, basement and garage and in combinations—4 feet above finished floor to center of outlet. Convenience outlets in all other locations—In baseboard, mounted horizontally.

Bids shall be submitted in duplicate on GE Wiring System, proposal forms.

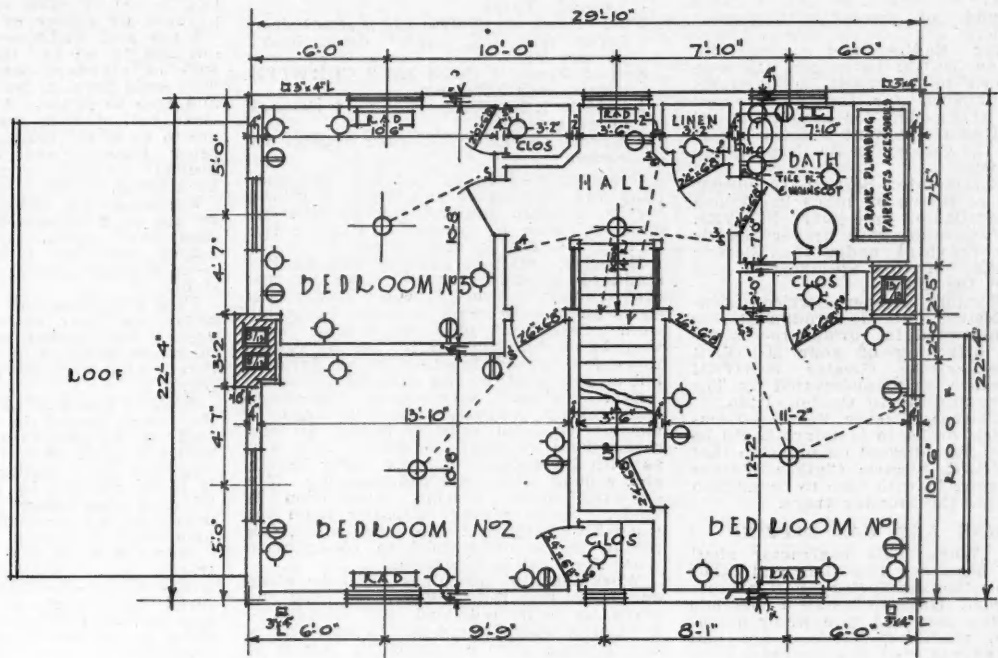
Scope of Work—This contractor shall likewise provide all materials and labor required to furnish and install lighting fixtures, cable for heat regulator and radio aerial.

Material—Lighting fixtures to be RID-DLE manufactured by The Edw. N. Riddle Co., Toledo, O. Heat regulator MINNEAPOLIS as manufactured by The Minneapolis Heat Regulator Company, Minneapolis, Minn. Radio equipment supplied by Crosley Radio Corporation.

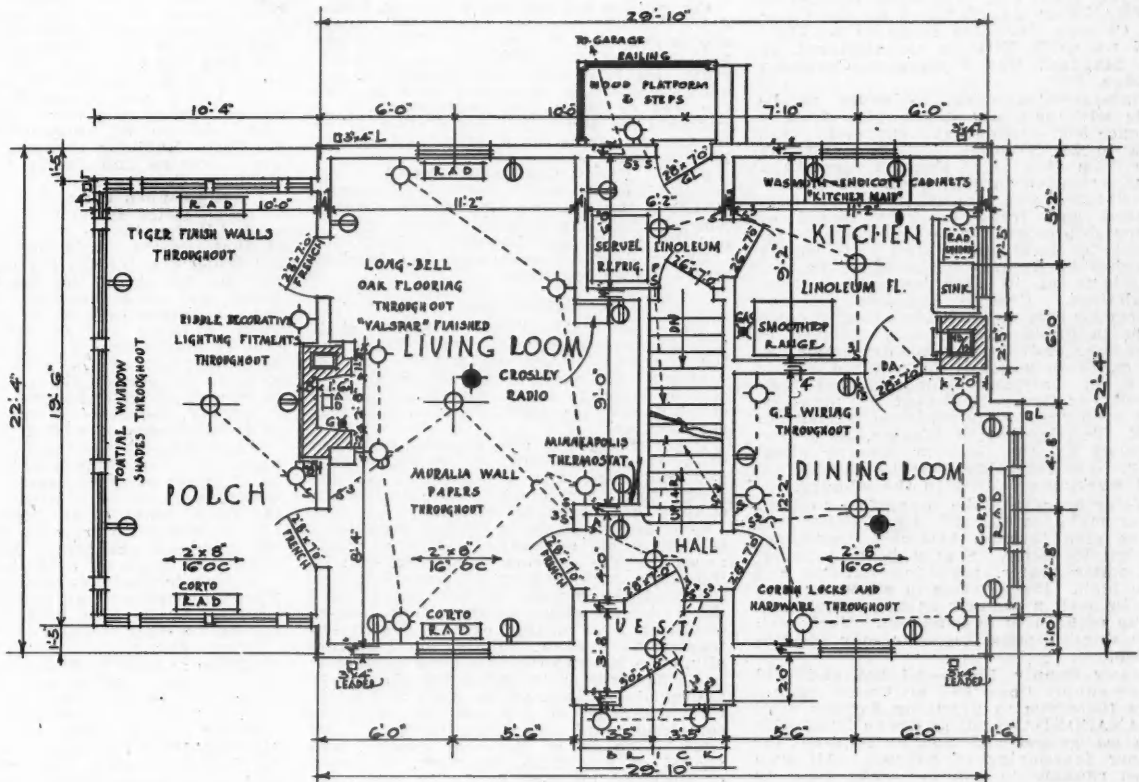
Fixtures—RIDDLE lighting fittings furnished and erected in place by this contractor, with all necessary incidentals in connection with same. The fixture schedule herewith gives catalog number, quantity of each to be taken from plans:

Fixture Schedule—	No.
Porch	Brackets 1005
Entrance Hall	Ceiling 2547
Living Room	Ceiling 2502
Living Room	Bracket 2536
Dining Room	Ceiling 2532
Dining Room	Bracket 2536
Living Room Porch	Ceiling 2548
Living Room Porch	Bracket 2537
Staircase (2d floor)	Ceiling 2546
Bedroom No. 1	Ceiling 2518
Bedroom No. 2	Ceiling 2550
Bedroom No. 3	Ceiling 2551
Bedroom No. 4	Brackets 2539-40
Bathroom, Kitchen and Service Entry	to be selected.

the National Demonstration Model Homes



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



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

ARCHITECTS SMALL HOUSE SERVICE
BUREAU -- ARCHITECTS
JOHN FLOYD VEWELL
ARTHUR DATES LINCOLN
CONSULTING ARCHITECTS

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PLAN No 901-Z
DRAWING No 3



Approved Materials and Equipment for

Wiring and Heat Regulator—Run low voltage cable from location of THERMOSTAT of Minneapolis Heat Regulator Company as shown on plans to location of motor in basement. Provide sufficient slack to leave at least one foot of cable projecting and not covered with plaster at both ends.

Wiring for Radio—Erect appropriate radio antenna 50 feet in length, and run lead in down to basement in partition leaving ample coil for future extension to location of cabinet, for installation of CROSLEY Radio Receiving Set, as manufactured by the Crosley Radio Corporation, Cincinnati, Ohio.

Electric Refrigerator Service—In proper location where shown on plans in kitchen space is available for your SERVEL Electric Refrigerator, with proper electric attachments provided under the Electric Wiring Section of this Specification and indicated on the plans.

Electric Vacuum Cleaner Service—Locations of electric outlets throughout the house are indicated in various rooms for the proper attaching of your HOOVER vacuum cleaner—the Greater HOOVER Suction Sweeper, as manufactured by The Hoover Company, North Canton, Ohio.

Electric Clothes Washer Service—Location of electric outlet in laundry should be made exactly as indicated on plans so that your GRAYBAR Electric Clothes Washer may be plugged in with ease to connection on wall beside the laundry trays.

PLUMBING AND GAS FITTING

Scope of Work—This contractor shall provide all necessary materials and labor required for the satisfactory performance of his contract. He is to install a complete plumbing, sanitary, and rain water drainage system, plumbing fixtures, hot and cold water supply, and gas system.

Materials—Brass pipe to be ANACONDA as manufactured and trademarked by The American Brass Company, Waterbury, Conn., seamless, drawn, semi-annealed pipe. Wrought iron pipe to be genuine wrought iron; water heater to be ARCO TANK as manufactured by The American Radiator Company. Plumbing fixtures to be CRANE as manufactured by the Crane Co., Chicago, Ill. Gas range to be VULCAN SMOOTH TOP as manufactured by The Standard Gas Equipment Company, Chicago, Ill.

Drainage—Connection to sewer to be made with salt glazed tile pipe from a distance 5'0" outside basement walls. Soil lines to be X heavy uncoated cast-iron pipe from this point through house and up to extension through roof. All plumbing fixtures and drains to be properly trapped and traps properly vented or otherwise protected from syphonage as required by local ordinances. All supply branches to fixtures to be of ample size and installed in accordance with local regulations. Provide complete drainage system for rain water, leaders carried down to finish grade line, securely fastened to extension, and flowing to dry wells by others, or to sewer if so required. Floor drain in basement laundry should be placed exactly as indicated on plans so that proper and easy drainage for GRAYBAR Electric Clothes Washer, as manufactured by the Graybar Electric Company, New York City, may be affected for best working efficiency in the laundry.

Water Supply—Make connection to local water main, extend $\frac{3}{4}$ " ANACONDA Red Brass pipe through basement wall, connecting to meter. Supply heating boiler, hot water heater, plumbing fixtures and hose bibb. Place valves in all water piping in such a manner as to control each group of fixtures in basement. Mark each with durable metal tags for easy identification.

Water Supply Lines—All hot and cold water supply lines, and all branch supply lines therefrom to plumbing fixtures shall be ANACONDA seamless drawn brass pipe of sizes, gauges and weights required for proper functioning of fixtures. All such pipes running in exterior walls shall be covered to protect from freezing. Beaded brass fittings of standard weight and proper sizes shall be used of Crane manufacture.

Hot Water—To be supplied to the following fixtures: bath tub, lavatory, sink and wash trays. Hot water to be provided by means of auxiliary, automatic gas storage heater, ARCO TANK as manufactured by American Radiator Co. Make necessary water and flue connections.

Plumbing Fixtures—To be provided and installed in place where shown on draw-

ings and in accordance with following schedule, fixtures manufactured by The Crane Company, Chicago, Ill.:

Schedule—

Basement—1 C21276 2-part Alberene Stone Laundry Trays.

First Floor—1 C19190 LK enamel iron apron sink $22\frac{1}{4}$ " x $52\frac{1}{4}$ " drain board on left side.

Second Floor—1 C3284 LE 2 CORWITH corner bath 5'6" long.

1 C264 M 1 24" Nova twice fired vitreous china lavatory.

1 C10808 SANETO vitroware Syphon jet closet.

Gas Supply—Arrange with local gas company for tapping service main, bringing service through foundation wall and installing meter of proper size for satisfactory functioning of fixtures.

Materials—All pipe shall be best quality standard genuine wrought iron of approved manufacture. Fittings, except stop cocks and valves shall be heavy malleable iron. Cast iron pipe prohibited. Pipe shall be of sufficient size to meet all conditions for proper functioning of fixtures, but no pipe shall be less than $\frac{3}{4}$ " diameter.

System—Cellar mains shall be hung from ceiling, properly pitched to drain to meter, free from sags or traps. In any case where unusual conditions are met, as with installation of large water heater, etc., consult with local gas company. If a gas-fired house heating installation is made, provide piping in boiler room for gas with a minimum size outlet of 2", size piping to be determined in consultation with the local gas company.

Workmanship—All pipes must be clean cut, burrs removed, properly threaded and made up with red lead and linseed oil applied to threads and not to tappings of the fittings. Use of gasfitters cement is prohibited in any part of the work. All runs graded to risers. Tap lines must be taken from sides only. All taps must be secured by straps soldered to the pipe and made extra tight. Unions shall not be used in concealed work. Entire system must be so designed as to empty completely at the lowest point.

Connections to Fixtures—Basement, Laundry: Provide two gas outlets $\frac{3}{4}$ " where shown on plan. Boiler room: Connect gas fired water heater with piping of maximum size to assure adequate service, exact dimensions to be agreed upon between the gas company and contractor. If a gas-fired house-heating installation is to be made, provide outlet of proper size as heretofore specified.

First Floor—Kitchen: Provide $\frac{3}{4}$ " standard outlet and provide and install VULCAN Smooth Top Gas Range, Catalog No. OD.450. SE as manufactured by Standard Gas Equipment Company, Chicago, Ill.

Living Room—Provide outlet in fireplace where shown on plans.

HEATING

Scope of Work—This contractor shall provide all necessary materials and labor for the satisfactory performance of his contract. He shall fully furnish and install a complete steam heating system in strict accordance with the plans and this specification.

Plans—Drawings are intended only to show the location of the boiler, piping and radiators, the arrangement of the piping to be left largely to the contractor, subject to approval by owner.

General Requirements—This contractor is to supply all necessary tools and appliances for the erection and completion of the work, is to remove all apparatus, refuse and debris from the grounds, leaving the work in a clean, uninjured and perfect condition. No cutting of any description tending to weaken the building structurally is to be undertaken. This contractor is to be fully responsible for the safety and good condition of the work and materials embraced in this contract until the completion and acceptance of same. All work is to be of the best quality, and should at any time, improper, imperfect or unsound material or faulty workmanship be observed whether before or after same has been built into the structure, this contractor upon notice from the architect or owner is to remove same and substitute good and proper material and workmanship without delay in place thereof.

Water Supply—Plumber is to bring water supply to within six feet of boiler, but this contractor is to make connection with boiler with $\frac{3}{4}$ " iron pipe with suitable cock, place draw off cock at lowest point of system fitted for hose attachment.

Smoke Pipe—Contractor is to connect the boiler with the chimney with round smoke pipe made of No. 22 galvanized iron with balanced damper of approximately the same diameter as the smoke pipe. Connection to be of same size as left for this purpose by maker of boiler.

Pipes and Fittings—All pipes throughout are to be the best quality wrought iron of standard weight and thickness, with ends reamed, free from imperfections and true to shape. All threads are to be clean cut, straight and true. All fittings are to be of the best heavy gray iron with taper threads and are to be heavily beaded; no inferior pipe or fittings will be allowed.

Supports—All piping is to be supported by approved expansion hangers not to exceed 10'0" apart. Cast iron floor and ceiling plates are to be used where pipes pass through floors, ceilings and partitions.

Pipe Coverings—All mains in the cellar above the floor and all risers in walls are to be covered with 1" asbestos or magnesia sectional covering with canvas cover, and secured by lacquered brass bands.

Boiler Coverings—All exposed parts of the boiler, except the front are to be covered with plastic asbestos $1\frac{1}{2}$ " thick, neatly applied and troweled smooth.

System—The heating under this system is to be affected by direct radiators distributed throughout as shown on the drawings and circulation of steam by one pipe circuit system.

Boiler and Boiler Fittings—This contractor is to furnish and set up ARCO steam boiler of suitable size as manufactured by American Radiator Company, provided with 6" low pressure, brass cast steam gauge, water gauge, and glass gauge cocks, combination column safety valves and blow off valves, and all other usual and necessary trimmings to complete the boiler, and a full set of fire tools. Where house is to be heated by gas from a central heating system, an IDEAL Gas Boiler of suitable size shall be installed in place of ARCO.

Radiators—Direct radiation is to be furnished to the amount required by local heating engineer or architect, radiators to be CORTO as manufactured by the American Radiator Company. Radiators are to be furnished with No. 72 removable disc type Union valves, rough body nickel plated Union non-breaking composition wheel handle as manufactured by The American Radiator Company, and AIRID Air Valves as manufactured by American Radiator Company.

Finally—When completed, the apparatus is to be tested to 10 pounds steam pressure. Boiler blown off and made tight at that pressure, said test to be conducted under the supervision of owner. Fuel for the test is to be furnished by the owner and when accepted, the apparatus is to be turned over to the owner in complete working order. All valves and stuffing boxes are to be properly packed and the plant completed in all its parts, it being understood that the contractor is to furnish all miscellaneous material, tools, labor, etc., necessary to complete the work in a first class and workmanlike manner.

Guarantee—The contractor is to guarantee that the apparatus he installs will be of ample capacity to evenly maintain a temperature of 70 degrees F. in rooms in which radiators are located, when the outside temperature is at zero, and that the apparatus throughout will have a free circulation when in operation.

Automatic Heat Regulation—Installation: The Minneapolis Heat Regulation shall be installed by the local branch office or local authorized distributor.

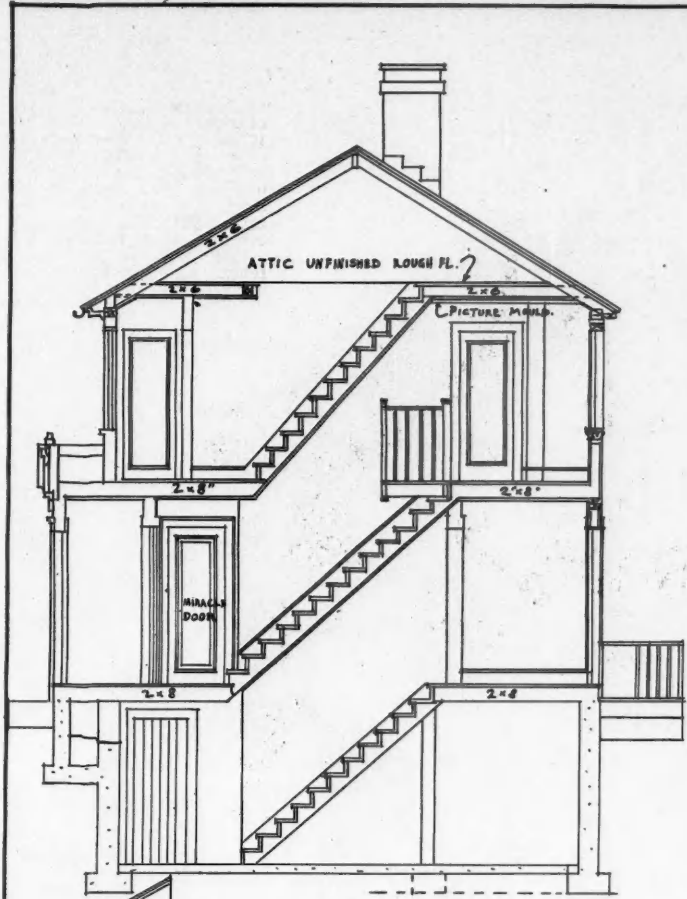
Room Thermostat—Install on an inside partition at least 12'0" distance from radiator, at a point of average temperature a Model No. 77 eight-day, seven-jewel clock MINNEAPOLIS Thermostat.

Boiler Pressurestat—A Model No. 70 MINNEAPOLIS Pressure Regulator shall be installed beside the pressure gauge, and in all cases located above the syphon or pigtail, and set at the maximum pressure necessary to heat all rooms to 70 degrees. Wire in dual control with room thermostat and motor.

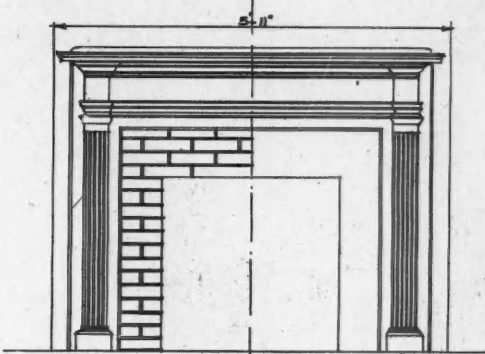
Motor—Install in front of boiler or on nearby partition where motor is visible to attendant of heating plant a MINNEAPOLIS No. 24 A. C. Nestor, connected to draft and check damper.

Installation—The MINNEAPOLIS Heat Regulator shall be installed by the local branch office or the local authorized distributor.

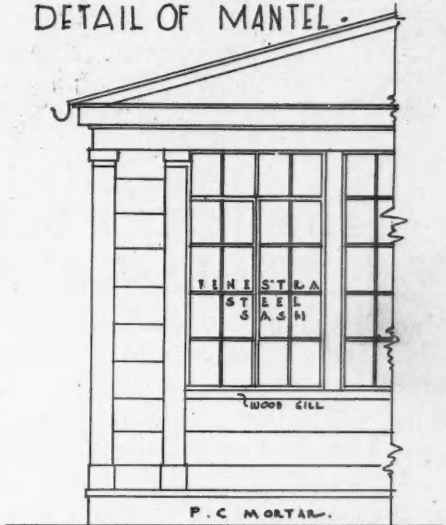
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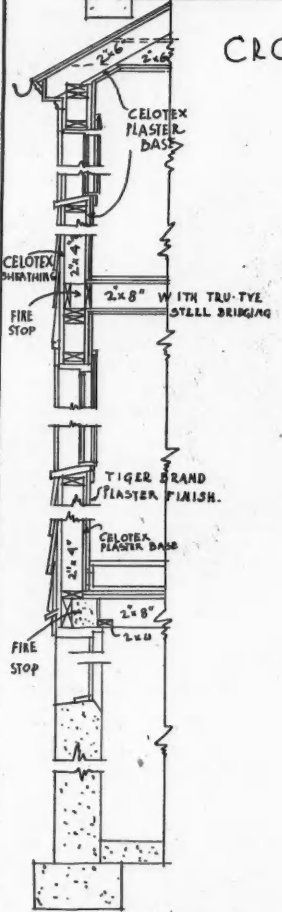
CROSS SECTION
SCALE $\frac{1}{4}'' = 1'-0''$



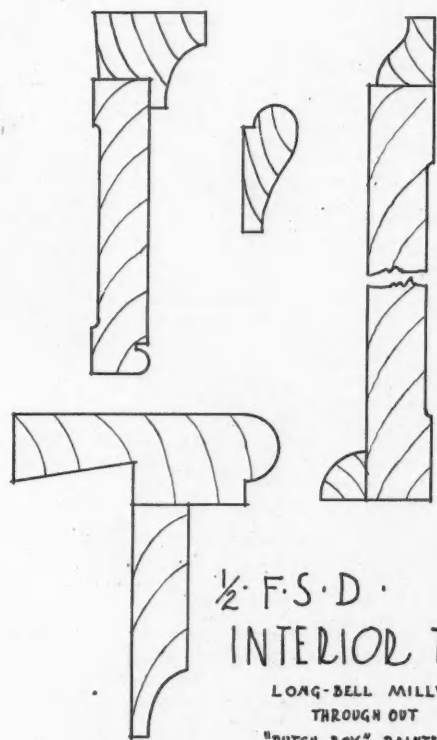
FRONT ELEVATION
SCALE $\frac{3}{4}'' = 1'-0''$
DETAIL OF MANTEL



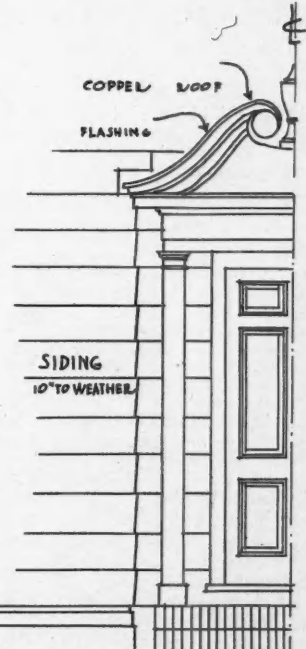
DETAIL OF ENCLOSED PORCH
SCALE $\frac{1}{4}'' = 1'-0''$



DETAIL WALL SEC.
SCALE $\frac{1}{2}'' = 1'-0''$



$\frac{1}{2}$ F.S.D.
INTERIOR TRIM
LONG-BELL MILLWORK
THROUGH OUT
"DUTCH BOY" PAINTED



MAIN ENTRANCE
HALF ELEVATION
SCALE $\frac{1}{4}'' = 1'-0''$

SMALL HOUSE SERVICE BUREAU, ARCHITECTS
JOHN FLOYD YEWELL
ARTHUR BATES LINCOLN
CONSULTING ARCHITECTS

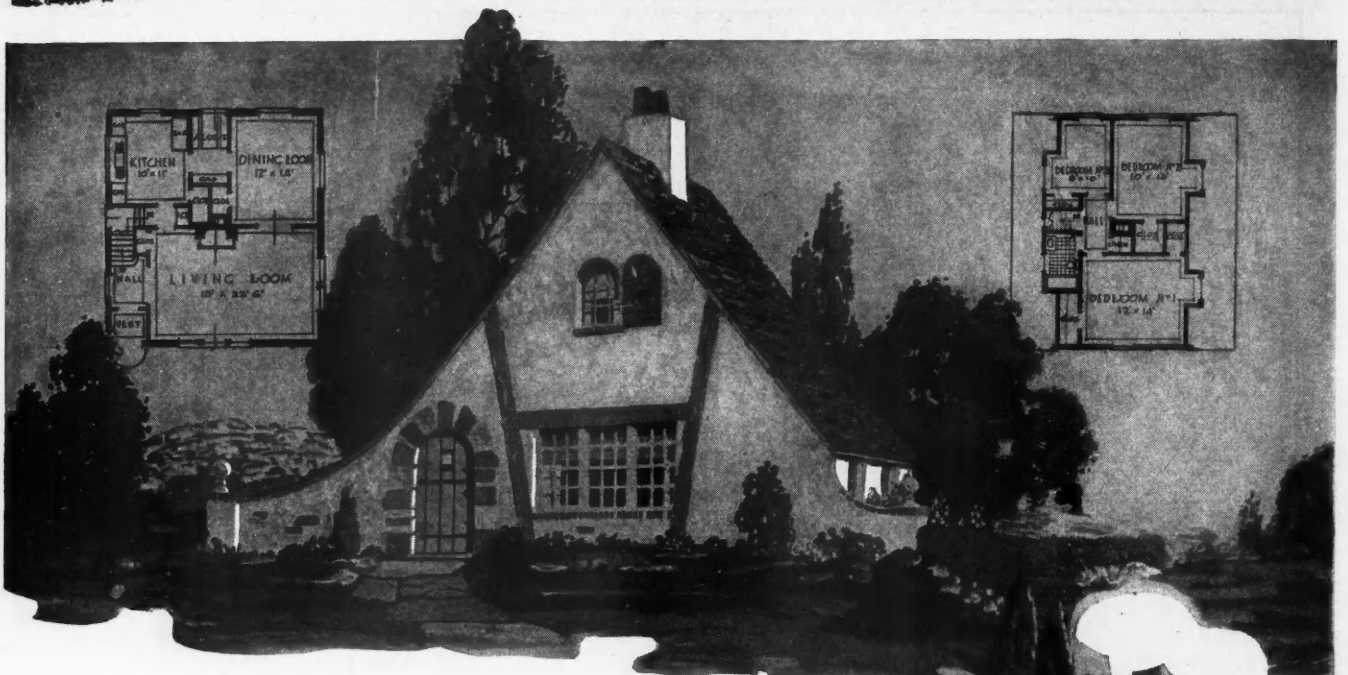
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PLAN NO 901Z
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Approved Materials and Equipment for



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BAECK WALL PAPER COMPANY

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CONGOLEUM-NAIRN, INC.

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Plumbing Materials

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THE CROSLLEY RADIO CORPORATION

Fenestra Casement and Basement Steel Windows

DETROIT STEEL PRODUCTS CO.

Tontine Window Shades, Rug Anchor, Duco Finished Furniture

E. I. DUPONT DE NEMOURS & CO., INC.

Fairfacts China Bathroom Accessories

THE FAIRFACTS COMPANY, INC.

G-E Wiring System

GENERAL ELECTRIC COMPANY

Graybar Clothes Washer

GRAYBAR ELECTRIC COMPANY, INC.

The Greater Hoover Suction Sweeper

THE HOOVER COMPANY

Tiger Finish (Hydrated Lime) Walls

KELLEY ISLAND LIME & TRANSPORT CO.

Kernerator Chimney-Fed Incinerator

KERNER INCINERATOR COMPANY

Lehigh Portland Cement

LEHIGH PORTLAND CEMENT COMPANY

Long-Bell Trade-Marked Lumber and Oak Flooring

THE LONG-BELL LUMBER COMPANY

The Minneapolis Heat Regulator for Coal, Gas, Oil

MINNEAPOLIS HEAT REGULATOR CO.

Natco Hollow Building Tile

NATIONAL FIRE PROOFING COMPANY

Dutch Boy White-Lead for Interior and Exterior Painting

NATIONAL LEAD COMPANY

Miracle Doors

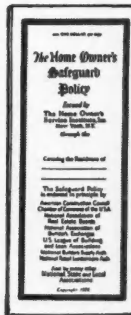
PAINE LUMBER COMPANY, LTD.

Richardson Multicrome Roofs

THE RICHARDSON COMPANY

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AROUND THE FAMILY TABLE

For Those Who Are Looking Southward

As the winter season approaches a good many northern builders will be looking south to Florida and the entire Gulf Coast, as an interesting and attractive place to travel, to build, and perhaps to invest

Last year at this time thousands of carpenters migrated to Florida for the busy winter building season down there. This year perhaps not quite so many will go; and yet working and living conditions there may be more attractive now than last year.

Feeling that information about present conditions in Florida that is unbiased and dependable will be appreciated by many of our readers, we give below some quotations from the September review issued by the National City Bank of New York:

The Florida Situation

While it is only in recent years that the Florida land boom has reached its most exaggerated proportions, the development of the state both as a wintering place and an agricultural producer is by no means new. For many years the region around St. Augustine has been a well known resort, and for a long time Florida fruits, vegetables, lumber, and other products have had an established position in northern markets. Thus, the alluring promises of Florida land developers have been heard before in the North, and while in former years the speculation was largely in agricultural lands, the extension of the railroad down the east coast through Miami and Palm Beach some years ago awakened an interest in the resort possibilities of the state that has been the leading factor.

The following table comparing various measures of growth for Florida and for the United States shows that even before the recent boom the state was growing at a rate faster than that for the country as a whole.

Growth of Florida compared with that of the United States as a whole (increase from 1900 to 1920).

	Population Per cent	Railroad Mileage Per cent	Value of All Farm Property Per cent	Value of All Crops Per cent	Value of Manu- factured Products Per cent
Florida	83	58	512	495	524
United States.....	39	31	281	392	447

It remained, however, for the combination of unusual national prosperity, development of the automobile and building of good roads, extension of railway facilities, effective advertising, and easy credit conditions to develop the excesses now familiar. The boom as usual was over-done, and Florida is now going through its period of readjustment. A very considerable number of small banks have gone under, and deposits of eleven representative banks for which comparative figures are available show a loss of nearly 25 per cent in the six months ended June 30, a decrease which, while no doubt partly seasonal, compares with a gain of 43 per cent during the boom times of the

corresponding period last year. Bank debits in Florida cities, which in January were running as high as 90 per cent above a year previous, had fallen in July to a point where they showed an increase of only 8 per cent, while permit figures also show a tendency recently to slow down from the intense activity that has heretofore prevailed.

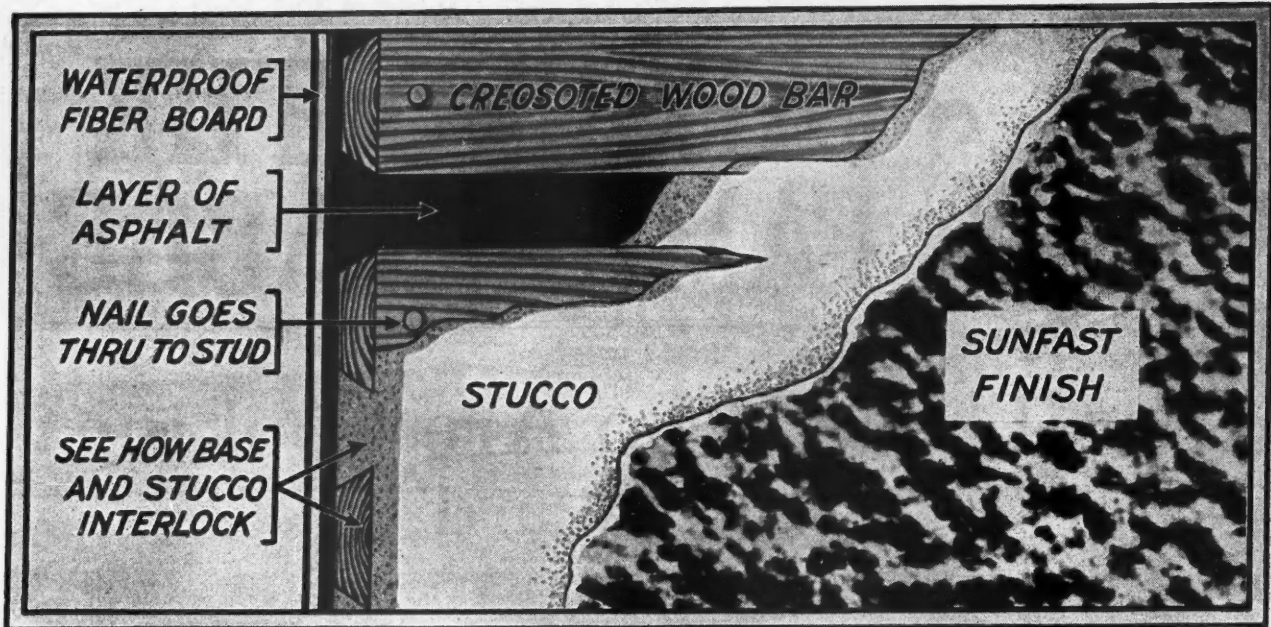
The following table showing percentage changes of various business indices in the first seven months of this year compared with a year ago indicates the extent to which business in the state has been affected by the slump.

PER CENT CHANGE 1925 TO 1926

	Bank Debits (3 Cities) Per cent	Building Permits Per cent
January	+90	+229
February	+73	+33
March	+66	+98
April	+42	+39
May	+22	+4
June	+8	-15
July	+2	-49
Total	+40	+16

All of which constitutes an excellent lesson in the results of excessive speculation and unwise use of credit, though it need occasion no alarm regarding fundamental conditions in Florida. Most of the banks that have failed were very small institutions and belonged to a chain system and reports indicate that their collapse was due in part to the fact that a substantial part of the surplus funds of the Florida members of the chain was loaned outside the state and could not be called back when wanted. So far as the majority of banks in Florida is concerned, there is ample evidence that they have prudently kept their funds in liquid condition. On June 30 the banks in Miami were reported as having a cash reserve of nearly 40 per cent of the total deposits, or considerably above the legal requirements. The ill effects which might have resulted from the boom collapse have been minimized by the wise policy generally pursued by the bankers of the state.

Should the situation follow the usual course it may take some time before readjustment is fully completed, and some further results of over-expansion on the part of individual companies may come to light before conditions become definitely better. The recognized attractions of Florida, however, in the way of climate, soil, and proximity to the great centers of population constitute a substantial basis for further growth, while the large sums invested in railroads, roads, and other sound improvements all represent permanent facilities which will contribute to the advancement of the state. There has been a drastic deflation of fictitious values, but fortunately it has come at a time of easy credit conditions, so that real values have not had to be sacrificed, and what under different circumstances might have precipitated a rather serious credit situation, now promises to pass away with its effects largely confined to those conditions which have been in need of correction.



See how the stucco keys itself into the dove-tail grooves, and is supported between the studs. The result is a solid UNIT WALL.

Over 6 times stronger than lumber sheathing!

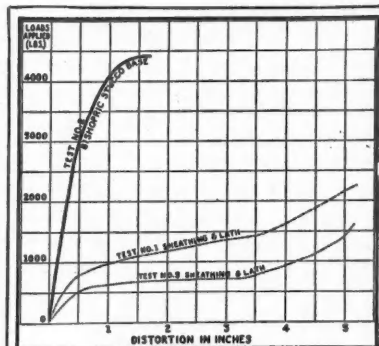
A good stucco job, as every builder knows, depends even more on the strength of the reinforcing base than on the stucco itself.

Actual tests show that Bishopric Reinforcing Base is more than 6 times stronger than lumber sheathing. Thus, this improved reinforcement will stand far greater strains than any stucco base would ever be subjected to!

Bishopric Base is stronger because it is made scientifically. Bone dry creosoted wood bars are embedded under great pressure into finest quality fibre-board heavily coated with asphalt mastic. The result is a sound-deadening, vermin-proof, fire-resisting base of super-strength.

Bishopric Base is economical, too. On both exterior and interior plaster work, it saves one-fourth the usual cost in labor and materials.

Because of its excess strength, Bishopric



Test conducted by Robt. W. Hunt & Co., of Chicago, Illinois—one of America's foremost engineers.

WHAT THE CHART REVEALS

The results graphically portrayed in this Chart show that by actual test Bishopric Stucco Base stands twice as much weight strain as wood sheathing and ordinary lath, with less than one-third the distortion of the base.

Bishopric will thus stand a far greater strain than any stucco base would ever be subjected to!

Base can be laid direct to studs, requiring none of the sheathing used to reinforce ordinary constructions.

In interior plastering, the dove-tail construction of the Base requires less stucco, and the heavy fibre-board prevents any of the stucco from falling down the spacing between the inner and outer walls.

Send for NEW BOOKLET

If you want the most up-to-date information on how to get excellent results with stucco every time, send for our new booklet "Looking Behind the Stucco."

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B I S H O P R I C

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

AMERICAN BUILDER



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August Shows Big Value in Contracts Let

AUGUST construction contracts in 37 states amounted to \$600,808,000, according to F. W. Dodge Corporation. This was the second largest monthly total ever recorded for these states, which is said to include about 91 per cent of the total construction volume of the country. Last month's record was nearly 2 per cent under that of August, 1925, the only month that ever exceeded it. The increase over July was 18 per cent. Increases in the central western states and in the public works and utilities class of construction were largely responsible for this high record.

The most important items in the August contract record were: \$223,292,100, or 37 percent of all construction, for residential buildings; \$125,682,900, or 21 per cent, for public works and utilities; \$81,342,500, or 14 per cent, for commercial buildings; \$68,279,000, or 11 per cent, for industrial plants; and \$42,124,000, or 7 per cent, for education.

New construction started in the 37 eastern states during the past eight months has reached a total of \$4,247,808,400, being an increase of 9 per cent over the corresponding period of last year.



To Train Safety Engineers

FOR a number of years organized efforts have been made to educate industry and the public to the importance of accident prevention. These efforts have resulted in an awakened recognition of the fact that the vast majority of the 84,000 deaths, the 2,000,000 injuries and loss of more than a billion dollars, which was the toll of accidents for 1925, could have been prevented by educating the workers to be careful. A demand has developed for leaders in safety work and a new profession has come into existence, that of the safety engineer, or director of public safety.

To meet the needs of this new profession, New York University, with the co-operation of the American Museum of Safety, has established the first collegiate course in accident prevention. This course will be open to all undergraduate students in the university, to the employes in the industries which are members of the museum of safety, to insurance safety inspectors, government officials and employes, industrial safety committee men and others who, through previous training or present association, are professionally interested in accident prevention.



Use the Short Lengths

EIGHTEEN wood fabricating industries consume 857,900,000 feet of softwood lumber annually. They apply 69.3 per cent of it in lengths under 8 feet but purchase only 13.8 per cent in such lengths.

This is one of the striking facts brought out by the study of Forest Products Laboratory has been making of short lengths in the wood using industries in connection with American Lumber Standards, says the Research Bureau of the National Lumber Manufacturers' Association. The results of the study have been published as Depart-

ment of Agriculture Circular 393, under the title, "Industrial Outlets for Short Length Softwood Yard Lumber."

As stated in the general conclusions arrived at by the study, "In the manufacture of softwood yard lumber large quantities of short length lumber now go to waste outright or are so used as to yield but a fraction of their real value. The purpose of this circular is to discuss the possible development of more adequate outlets for these short lengths."



The Normal Building Rate

FOR more than three years building reports have shown an unprecedented activity in the construction field and building records have been broken from month to month and from year to year. It has been assumed that this enormous activity was merely the natural result of the shortage which developed during and immediately following the war. Reviews have been made for some time which go to show that this shortage has been made up, that many cities are actually overbuilt and that a slump in building activity is in prospect for the immediate future.

Such conclusions are natural, but they are based upon a wrong assumption. In every case the building rate for 1914, or for 1913 is taken as the standard for normal building activity. The building rate for 1914 was normal for 1914, but it cannot be taken as normal for 1926. Every year new and better materials and methods of construction, new and better equipment and appliances, are being developed and the standards of building are being raised.

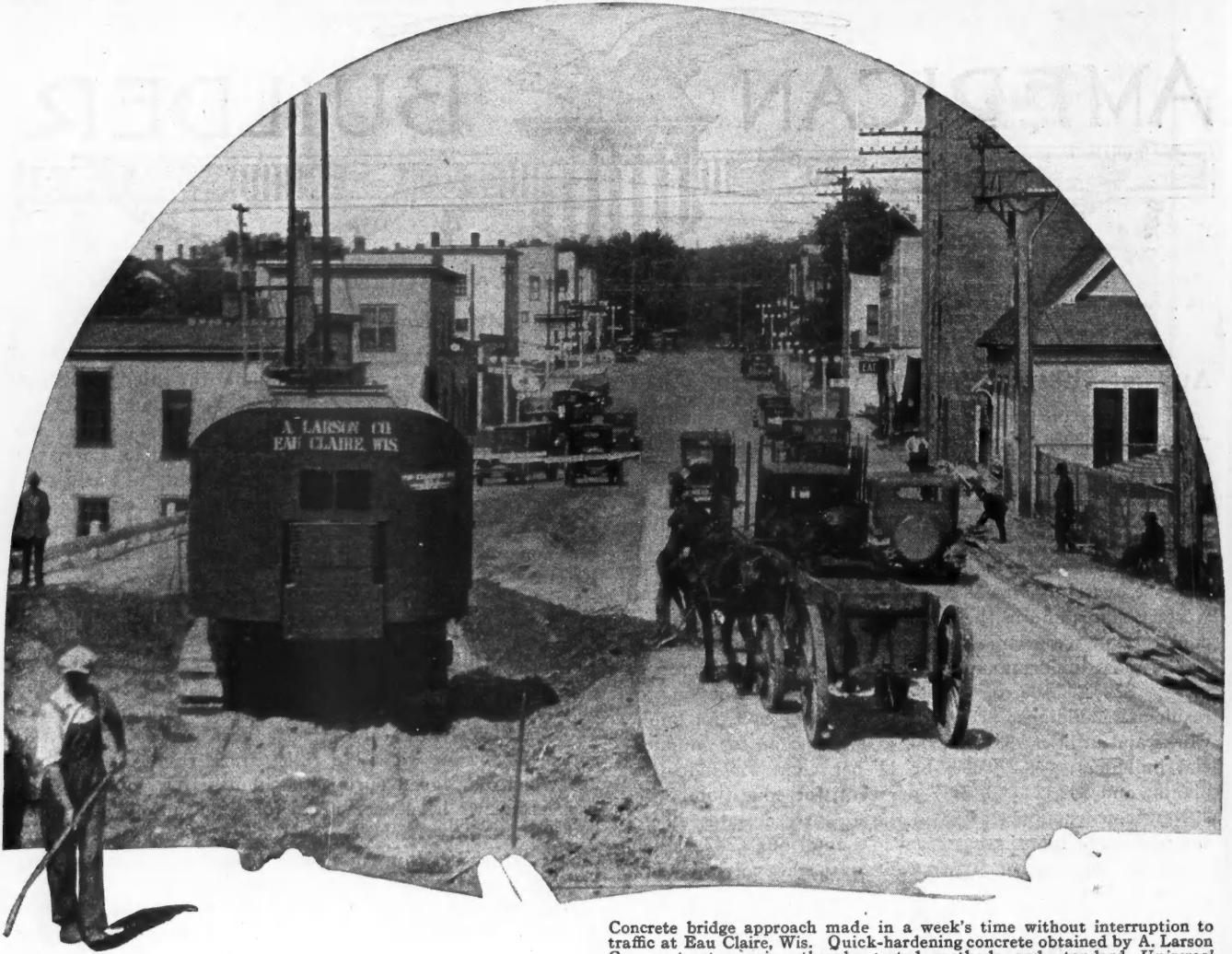
The saturation point for any product, including new buildings, is not determined by the demands of bare necessity, it is determined by mental attitude. So long as it is possible to construct better buildings people will want new buildings to replace the old, even though the old may still be serviceable and entirely adequate according to the by-gone standards of 1914. The demand is not merely for more buildings to meet the requirements of increasing population, nor even for new buildings to replace those which have been destroyed by fire or time, the demand is also for better buildings to fit the constantly rising standards.



The Good Construction Campaign

IN connection with its Good Construction Campaign, the Own Your Home Exposition, Inc., which operates the New York and Chicago Own Your Home Shows, has published a code of ethics and classification of exhibits to protect the buyer and the legitimate trade by determining standards of quality. Only exhibits that full qualify according to the requirements will be accepted.

As a further aid this organization has prepared, with the aid of a committee of architects, a 48-page booklet under the title "Standard Pocket Guide to Good Construction." This booklet, which sells for 10 cents, is illustrated with 30 isometric drawings and is of such a nature that it may be used by the layman, enabling him to see and understand at a glance the principles of good construction.



Concrete bridge approach made in a week's time without interruption to traffic at Eau Claire, Wis. Quick-hardening concrete obtained by A. Larson Co., contractor, using thoroly tested methods and standard *Universal* cement, the same quality *Universal* regularly handled and furnished by Wisconsin Pipe & Fuel Co., Eau Claire, Wis. City Engineer, J. T. Hurd.

Quick-Hardening Concrete Prevents 21-Day Shut-Down of Important Highway

Improvement Completed on State Road at Eau Claire, Wis., Without Closing Road to Traffic

To overcome a traffic delay in building a bridge approach on State Highway No. 12, Eau Claire, Wis., the city engineer and contractor used thoroly tested methods to secure Quick-Hardening *Universal* concrete that is as strong in 3 days as ordinary concrete is in 28 days.

The approach was built in two sections, traffic being permitted on one side of the road while work on the other was in progress. Ordinarily, such an improvement would have closed the road for at least 21 days, but use of these methods completed the job in a week, and without any delay to traffic.

Quick-hardening concrete made with special methods and standard *Universal* cement, the same quality *Universal* regularly used, will help you on many rush jobs. The coupon below will bring you detailed information promptly.

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Of Carpenters

THERE is something about the carpenter's trade that you find nowhere else in all our workaday world, a gentle kindness about the craft. The blacksmith is perhaps more famous, but the trade of the smith is a blustery trade, full of harsh noise and clangor. He works in a gloomy darkness lit up by the dancing flare of his fire. The iron which he works upon must be heated fiercely, and treated with a sort of rude violence. The sounds of the carpenter's trade are nothing rougher than the song of the saw and the purr of the plane. Here, instead of flying sparks to send the watching children scurrying back, are great curly shavings tempting the most timid fingers to catch them as they fall.

The memory of the old carpenter shop of my childhood is still strong enough to tug inwardly whenever I see a carpenter at his bench. It was a long, sunny room with a bench all along one side. Against the other wall were piles of window sash and frames, wheelspokes and sled-runners, and a hundred other things to set children guessing at their uses. Over everything lay a powder of golden dust like the glamour of dreams. It lay thick on the window panes and added more gold to the entering sunlight. It danced in the slanting rays and seemed inextricably mixed with the sweet pungent odor of seasoned wood.

The carpenter was an almost ideal carpenter. His work was truly a labor of love; every movement of his hands upon his work was like a caress. No rough handling of unresponsive iron this, but a mild smoothing of hands over wood that had been shaped quietly and gently, and surely I have never seen a more placid, kindly gaze than his.

I know another carpenter now, too. I visited him the other day, and as I entered his shop and saw the same pall of gold over all, and inhaled the fragrance of the wood, I mentioned something of what it meant to me. He glanced

at me with an understanding light in his eye and went on measuring his material.

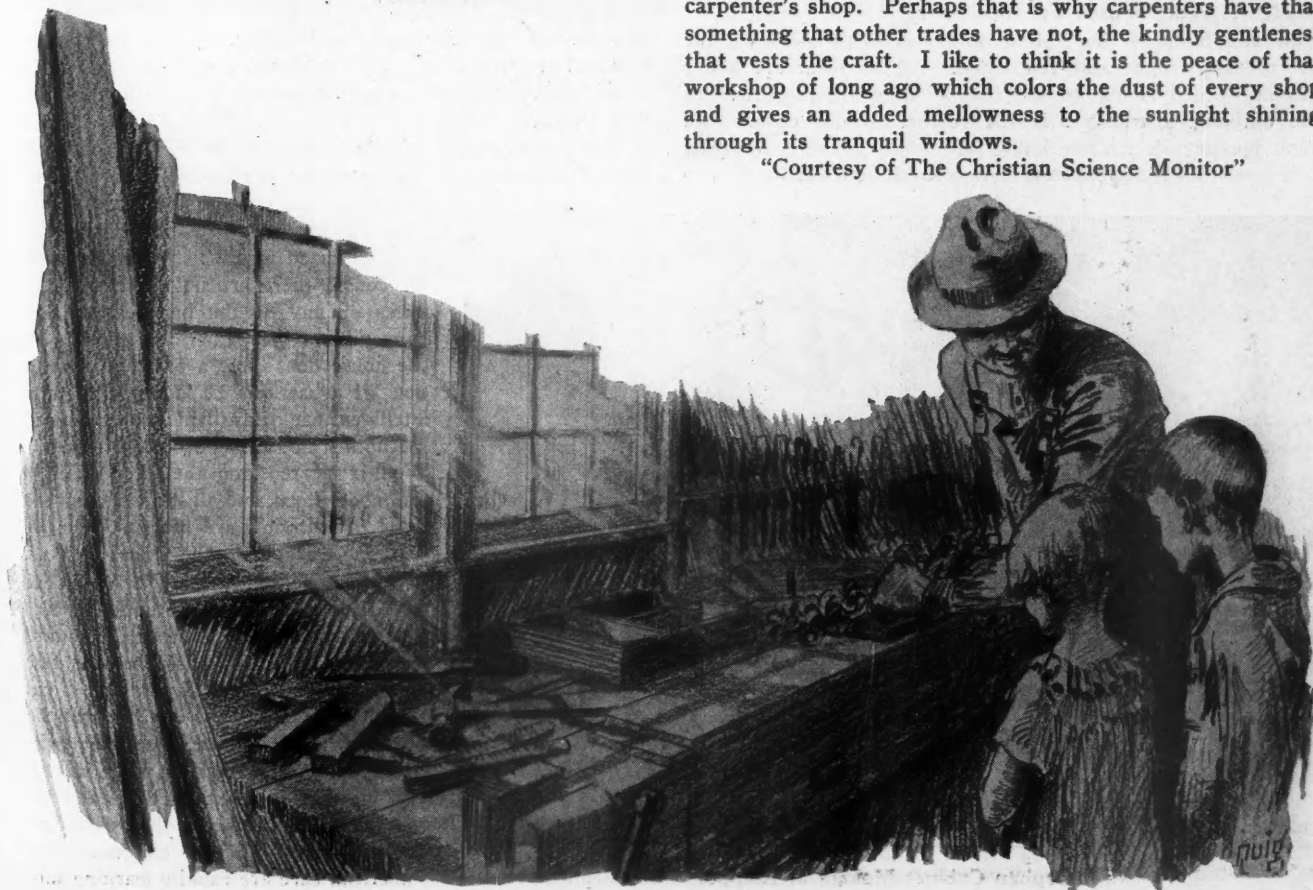
"I remember," he said, "a great many years ago when I was a bit of a boy, five or six years old I'd be then, for I was just starting to school. Every day that our work was well done our teacher gave us a little stamp with 'Reward for Merit' lettered on it. When we had ten of these we received a little card. Ten of these little cards brought us a large card with a colored picture upon it. Whenever possible, the teacher would let us pick out the picture that pleased us most. I remember the first card that I got. I picked out one that had a picture of a carpenter's bench and a chubby little carpenter in a big white apron working at the bench. He was using a plane and a great shaving curled up from it. It must have been that shaving that took my eye."

He thrust the rule he had been using into the pocket of his overall, and gazed out through the dusty window with a faraway look in his eye as he continued. "Then one day someone asked me what I was going to be when I got to be a man, and I said, 'I'm going to be a carpenter. Jesus was a carpenter, and I'm going to be a carpenter, too, when I grow up.' They'd taught me that in Sunday School, and the chubby little fellow with the shaving had done the rest. I've kept that card to this day. It's home in my room now."

He turned to me again with a twinkle in his eye. "It's a great business being a carpenter. Whenever you read about a carpenter you'll find that he is always poor but honest. Poor but honest, that's us." He chuckled as he reached for his saw and filled the room with its cheerful voice.

I came away musing on his words and thinking what a wonderful carpenter's shop that must have been in Nazareth. There must have been little children around the door watching the big shavings go curling down just as in every carpenter's shop. Perhaps that is why carpenters have that something that other trades have not, the kindly gentleness that vests the craft. I like to think it is the peace of that workshop of long ago which colors the dust of every shop and gives an added mellowness to the sunlight shining through its tranquil windows.

"Courtesy of The Christian Science Monitor"



Modern Building in Foreign Lands

By JANE HILL

AMERICANS have a penchant for putting the modern touch to everything they undertake. We have model tenements, model apartments, model dwellings and model communities. Anything that is new must represent the last word in modern improvements, hence it becomes a model. So it is natural for American relief workers, bent on errands of mercy in foreign lands, to inaugurate as many modern improvements as lie within their power even when the necessities of life are often rather meager.

An interesting example is offered by the model village built by the Near East Relief at Alexandropol, the largest orphanage center in the world, where 20,000 children once gathered together in old Russian army barracks under the protection of the Stars and Stripes. Because of lack of funds, the number at this center has been reduced to 14,000, 60 percent of whom are under twelve years of age. These children under American care are all being trained for self-support, and the object of building this model village is to offer a practical lesson in building and a concrete demonstration of household arts under sanitary conditions in dwellings approximating the type of houses in which most of the girls will live.

Orphanage boys were set to work on the erection of six separate dwellings. A two-acre plot of ground was chosen so there would be plenty of room for gardens. The houses are one story high and built of stone, lime and clay with windows for the necessary light and ventilation. All of them are above ground—which is one of the reasons they are modern! In the outlying districts it is the custom to dig cellars and bank up the sides of the house with mud mixed with straw and covered with whitewash with a small vent for light. For

roofs they use wooden logs topped with matting and mud. This type of house requires a mud roller to flatten out the mud on the housetops to prevent leaks after a heavy downpour of rain. So you can see that the orphanage dwellings are really quite modern.

However, the most modern characteristic of all from the standpoint of the natives is that a portion of the house is walled off from the rest for the family cattle, donkey, sheep, goats, pigs and poultry. They were used to all for one, and



Near East Relief Boys Enjoying a Bit of Recreation Beside an Orphanage Built House.

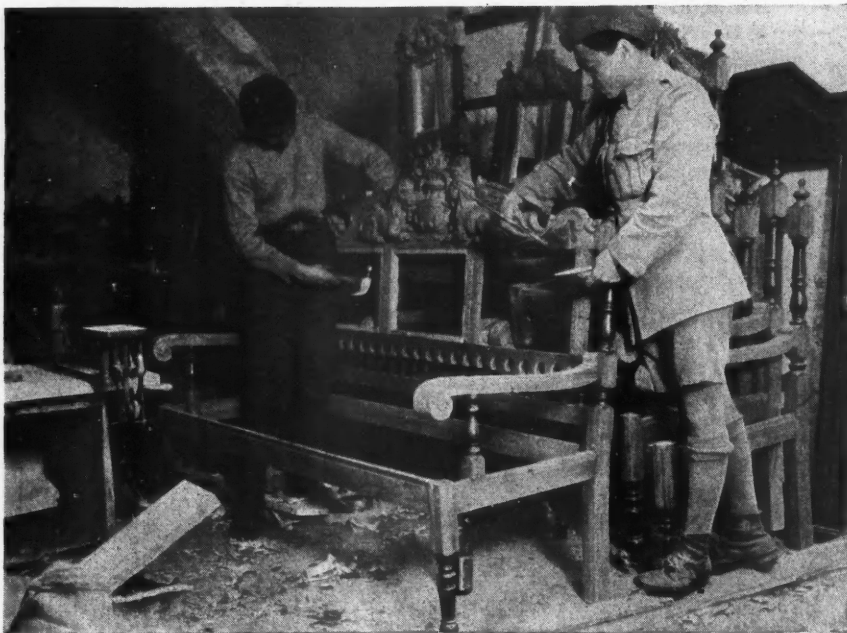
one for all, children and cattle alike. Consequently the removal of the donkey from the family hearth is a good deal of an innovation, and a very important contribution to sanitary living.

The arrangement of the rooms varies in the different houses according to the activities introduced. Each house acts as a demonstration center.

One is given over to housekeeping in as modernized form as conditions permit. Of course there are no electrical appliances or any of the hundred and one conveniences that Americans enjoy. But the house does offer a practical illustration of what can be done with more intelligent use of available materials.

Another house is devoted to spinning. Wool is sheared from the sheep raised on the model farm, and all the various processes of weaving are taught, beginning with the washing of the wool.

It must be remembered that this so-called model village is situated in Russian Armenia, in the heart of the country devastated by wars, massacres and famine. It is only the last year and a half that living conditions have approached normalcy and life there is still very primitive. However, American farm machinery is now supplanting the oxen and the ancient implements that date from Biblical days. Little children under American care are rapidly learning mod-



Orphan Cabinet Makers at Aleppo.

ern methods of accomplishments, and will eventually pave the way for the introduction of American products.

More of the spirit of modernity, as Americans recognize the term, is introduced in the orphanage built community on Syra, one of the islands of the Aegean Sea. It represents the only colony built by orphans for orphans in the Near East, the other dependent children being quartered in all manner of dwellings ranging from palaces to monasteries, depending upon what buildings could best be spared by the governments to meet orphanage needs. Following the burning of Smyrna, and the evacuation of Christians from Turkey, Greece was sorely taxed to furnish accommodations for the hordes of refugees who sought protection under her flag. To provide for the Near East Relief orphans the Greek Government allotted a large plot of ground at Syra, and the Near East Relief with the aid of refugee and orphan labor set about erecting buildings to accommodate 2,500 children.

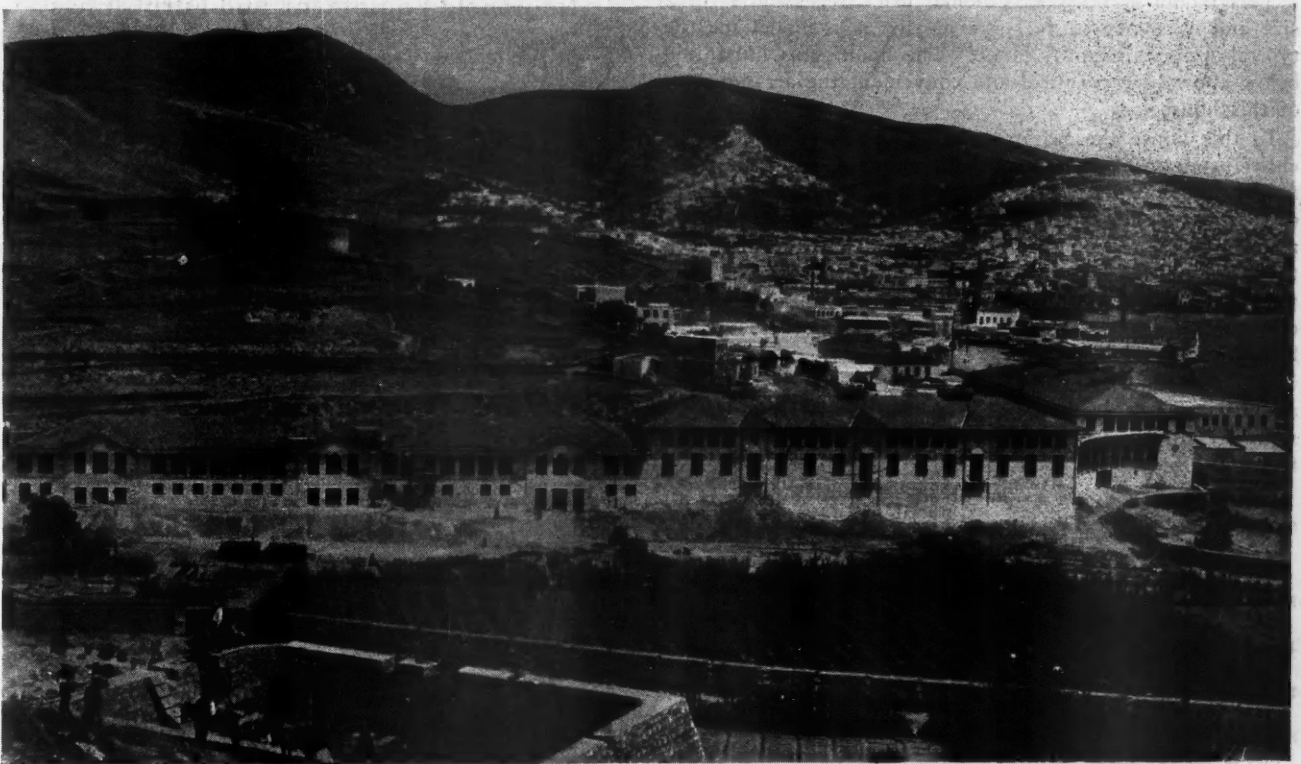
It was here that the boys had their first lessons in concrete construction. Happily a native cement of volcanic

or hastily improvised to meet emergencies, water had to be carried to the buildings and heated in cauldrons.

All the concrete plumbing in the new buildings is reinforced with meshed rods of heavy steel wire. The reinforcement work was done by orphan blacksmiths under the direction of skilled refugee laborers.

For the wearing surface of the latrines and washbasins a native clay is used which gives a waterproof surface almost like procelain. This same material has been used for centuries by the Greeks as a lining for their cisterns and reservoirs. Owing to the scarcity of fresh water at certain seasons of the year, all the wash rooms are equipped with salt water for flushing. The enormous floor space in some of the buildings is arranged so that it may be cleaned by use of a powerful stream of salt water from a fire hose—this is a land where hand scrubbing was formerly the only cleansing process known.

While the few modern touches introduced by Near East Relief workers in foreign lands may not sound very modern to Americans, they do represent the beginning of an im-



Part of the Near East Relief Orphanage Colony at Syra.

origin is found on the island in great abundance. The natives dig it from large rock pockets and careful sifting is all that is necessary to make it immediately available for ordinary construction. This natural cement costs about the same price per cubic foot as ordinary sand and has proven very satisfactory. Ten quarries were operated on the island to supply the required stone and marble. Tiling, wood work and plumbing were all that it was necessary to bring in from the outside. This orphan colony includes six dormitories, a bakery large enough to bake 10,000 loaves of bread a day, a public bath house, and schools with work shops.

The buildings are all lighted by electricity, the wiring forming practical training for the boys who wish to specialize on electrical construction when they are old enough to take care of themselves. Concrete plumbing has been installed with hot and cold running water and showers in the dormitories, all of which represent the last word in modern improvement in that part of the world. Indeed in many of the hospitals taken over by the Near East Relief,

provement in living conditions, which is bound to react to the welfare of the entire world. As thousands of little boys and girls now under American care are trained in American methods of accomplishments to take their places in the economic life, they are bound to raise the standard of living and in time there will no doubt grow up a demand for American building implements, American fixtures and other products for which the self-sacrificing relief workers have paved the way. But probably the most far reaching result gained by the rescue of more than 100,000 children from starvation is the fact that these little orphans of many nationalities and many creeds have learned to live together in peace and harmony, forgetting race hatreds and race antagonism that has made that part of the world the scene of so many horrible conflicts.

In a few years, probably not more than five, the Near East Relief will have finished its job, and when it withdraws it will leave at Alexandropol and Athens and Syra permanent institutions which the native governments are pledged to carry on.

"Better Homes" Exhibit at Sesqui

Prominent Manufacturers Combine to Furnish Materials, Equipment and Furnishings for Girl Scouts Headquarters

ONE of the most popular spots on the Sesqui-Centennial grounds at Philadelphia is the Better Homes in America Model Home which is the center of Girl Scout activity at the Exposition and will be used as their permanent headquarters afterwards.

This house in addition to being the last word in approved materials and up-to-date labor-saving home appliances also has within its walls a feature of unique historical interest. In the living room is a fireplace built of bricks brought from Hayfield Manor, George Washington's Virginia home and the only house which George Washington personally designed and built. These bricks were imported by George Washington from England.

This model home is of Colonial brick style and is of a size and arrangement to serve ideally as a model for the typical American family home. The floor plans illustrated below show how practical and convenient the arrangement of this house is.

In this house the Scouts will reveal to the public their entire program of education, which includes elementary proficiency in cooking, housekeeping, first aid and the rules of healthful living. One-fourth of the badges of achievement given Girl Scouts are for service of the woman in the home as mother, nurse or housekeeper. These Scouts will demonstrate how they are trained to face life as experienced homemakers, and to become the mothers of the future.

With the thousands of visitors going through this house and studying its every detail it is certain that this demonstration will have its effect on home building and home furnishing styles all over the United States.

The following concerns contributed their materials or services to this worthy enterprise:

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Living Room Tables
Kiel Table Co., Milwaukee, Wis.

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The Outdoor Arts Co., Inc.
Flourtown, Pa.

Nursery Decorations by
Miss Anna Hitz
Girl Scout Lieut. and Golden Eaglet.

Ice Box
Servel Electric Refrigerator
The Servel Corporation, N. Y. City

Table Cloths from
Near East Relief, Philadelphia

Kitchen Utensils
"Wear Ever" Aluminum
The Aluminum Cooking Utensil Co.
New Kensington, Pa.

Contractors and Builders

General Contractors
Metzger, Fisher & White
Otis Bldg., Phila., Pa.

Heating Contractors
Hudson & Ives
5813 Market St., Phila.

Roofing Contractors
Thomas S. Gassner Co.
4545 Wayne Ave., Phila.

Brick Mason Contractor
John B. Kelly, 2313 Walnut St., Phila.

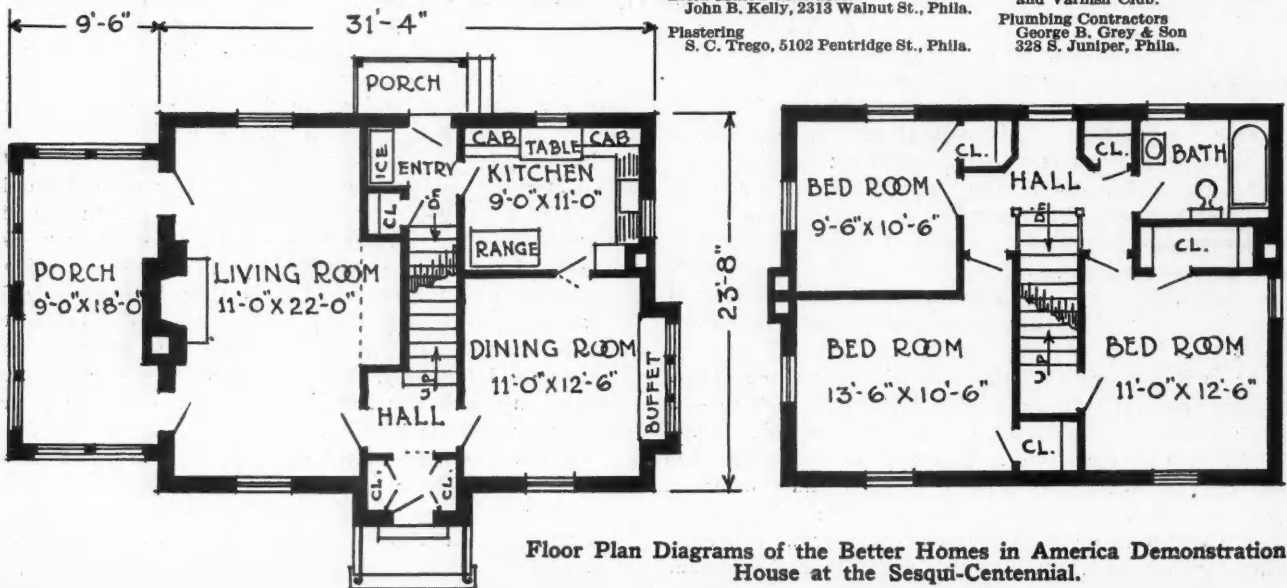
Plastering
S. C. Trego, 5102 Pentridge St., Phila.

Cement Work
Herbert W. Geshwind
761 N. 26th St., Phila.

Electrician
Phillip Jahn
42 Brighton Ave.,
Kirksby, Del. Co., Pa.

Painting and Decorating
The Paint, Oil and Varnish Industries
of the United States, under the auspices of the Philadelphia Paint Oil and Varnish Club.

Plumbing Contractor
George B. Grey & Son
328 S. Juniper, Phila.



Floor Plan Diagrams of the Better Homes in America Demonstration House at the Sesqui-Centennial.



Mrs Herbert Hoover, Wife of the Secretary of Commerce, Laying the Corner Stone of the Girl Scouts Headquarters Home at the Sesqui. A brick brought from England by George Washington was used as the corner stone. Two hundred Girl Scouts of Philadelphia in uniform, together with a large delegation of women prominent in Girl Scout work and the activities of the Better Homes in America Organization assisted at this ceremony, on May 1.

Mrs. W. Free-land Kendrick, Wife of the Mayor of Philadelphia, Officially Opened the House on August 17, Turning It Over to the Girl Scouts.



The Girl Scouts Demonstration Home and Headquarters at the Sesqui-Centennial Designed by the Architects Small House Service Bureau and Built and Furnished by a Selected Group of Manufacturers as an Educational Exhibit. The selection of these materials, equipment and furnishings together with the financing was under the direction of Mr. Henry A. Guthrie, of Chicago.

World's Largest Convention Hall to Be Erected at Atlantic City

Will Seat 40,000 People on Floor and Stage

THE new convention hall at Atlantic City is to be a mammoth among the world's buildings. Its enormous roof trusses will span a width of 350 feet without supporting columns and the building will be 650 feet in depth. Our illustration from the architect's prospective adds a pleasing variety to this month's supplement of notable architecture—an apartment hotel in Detroit, the large auditorium in Atlantic City, an apartment hotel in New York City and an office building in Denver.

Lee Crest Apartment Hotel, Detroit, Mich.

Designed, Built, Owned and Operated
By Ralph T. Lee.

This ultra-modern, million-dollar apartment hotel was planned and built and is now owned and operated by an enthusiastic AMERICAN BUILDER subscriber—Mr. Ralph T. Lee. Its architecture is graceful and its appearance pleasing both inside and out. In fact, the decorations, fittings and equipment are luxurious, especially in the lobby, main dining room and parlor.

The building contains about 100 suites of apartments, served by two high-speed electric elevators. These suites are one, two, three and four rooms. The three-room suites contain living room, dining alcove and kitchenette, with a bed closet, concealed bed, dressing closet and bathroom. A few suites on each floor have bed rooms. The kitchens have the most modern equipment of automatic electric refrigeration, chutes to a central incinerator, gas ranges, cabinets for orderly storage of utensils, dishes, food staples, etc.

The apartments of one, two, three and four rooms are elegantly appointed. The furnished suites are beautifully equipped with luxurious furniture, linens, silverware and every domestic necessity, while the unfurnished suites are richly carpeted and artistically decorated.

All rooms are outside rooms with ample light and air either from the two street frontages or the central light court.

The building is of steel frame construction with exterior walls of masonry and brick trimmed with ornamental terra cotta. Shops on the ground floor provide valet and beauty shop service, and there is a finely appointed dining room.

New Convention Hall, Atlantic City, N. J.

Lockwood, Greene & Company, of Boston, Architects.

The new Convention Hall, at Atlantic City, N. J., will be the largest auditorium or hall in the world and is to be completed in 1927. The building will be located on the Boardwalk and will be 350 feet wide by 650 feet deep.

There will be 168,000 square feet on the main auditorium floor and an additional space of 100,000 square feet on the ground floor. The main auditorium will have a seating capacity of 30,000 on the floor and stage and 10,000 in the balcony, giving a total seating capacity of 40,000.

The main auditorium will be large enough to hold running and athletic games of all descriptions, indoor football and circuses. It is designed so that it can be flooded for skating carnivals. Provisions will be made for large amplifiers so that speakers may be heard in any part. Elaborate lighting effects are provided for evening events.

At the end of the auditorium is a large stage with full property and dressing room equipment. The stage is 100 feet wide and 50 feet back of the proscenium arch, with 180 feet width wings.

The main auditorium has a clear span of 350 feet, which is the largest span in any permanent building in the country. The height from the auditorium floor to the bottom of the trusses is 115 feet clear space.

In addition to the main auditorium, there will be a large hall in front of the building which will be used for art exhibits. It will have a seating capacity of 3,000, including a stage. Committee and retiring rooms surround this hall.

The building will be fireproof throughout. For the front of the building, limestone and marble will be used, and for the balance of the structure a light colored brick to match the stone.

The Warwick Apartment Hotel, New York, N. Y.

George B. Post & Sons, Architects.

Sixth Avenue is to boast of one of the two tallest apartment hotels in the world—The Warwick, No. 65 West 54th Street, on the northeast corner. It will be completed next October, rising thirty-six stories, dominating the neighborhood with its graceful tower of Spanish design, castle-like at a cloud-touching height. From its apartments will spread out a superb panorama of New York—a sweeping vista of all Manhattan from Hudson to East River, the bay to Central Park and thence to the northern boundaries of the city.

Designed by Geo. B. Post & Sons, Architects, with Emory Roth as Associate Architect, built by Dwight P. Robinson & Company, The Warwick is an exceptionally fine example of the adaptation of a style of architecture, too seldom used in New York, to the modern terraced type of tall building. The base is constructed of limestone, the shaft is brick, and the top is trimmed with terra cotta.

The Warwick will be under ownership management—the personal direction of Albert F. Miller. It will have approximately 245 apartments, ranging in size from one to ten rooms. Entire floors will be available if desired. Each apartment will have its own serving pantry, equipped with automatic refrigeration. There will be direct elevator service from the first to thirty-sixth floor. Private ball and banquet rooms for exclusive use of residents, contribute also to the amenities of social life, with a magnificent lobby and dining room decorated in Spanish style.

The Republic Building, Denver, Colo.

G. Meredith Musick, Architect.

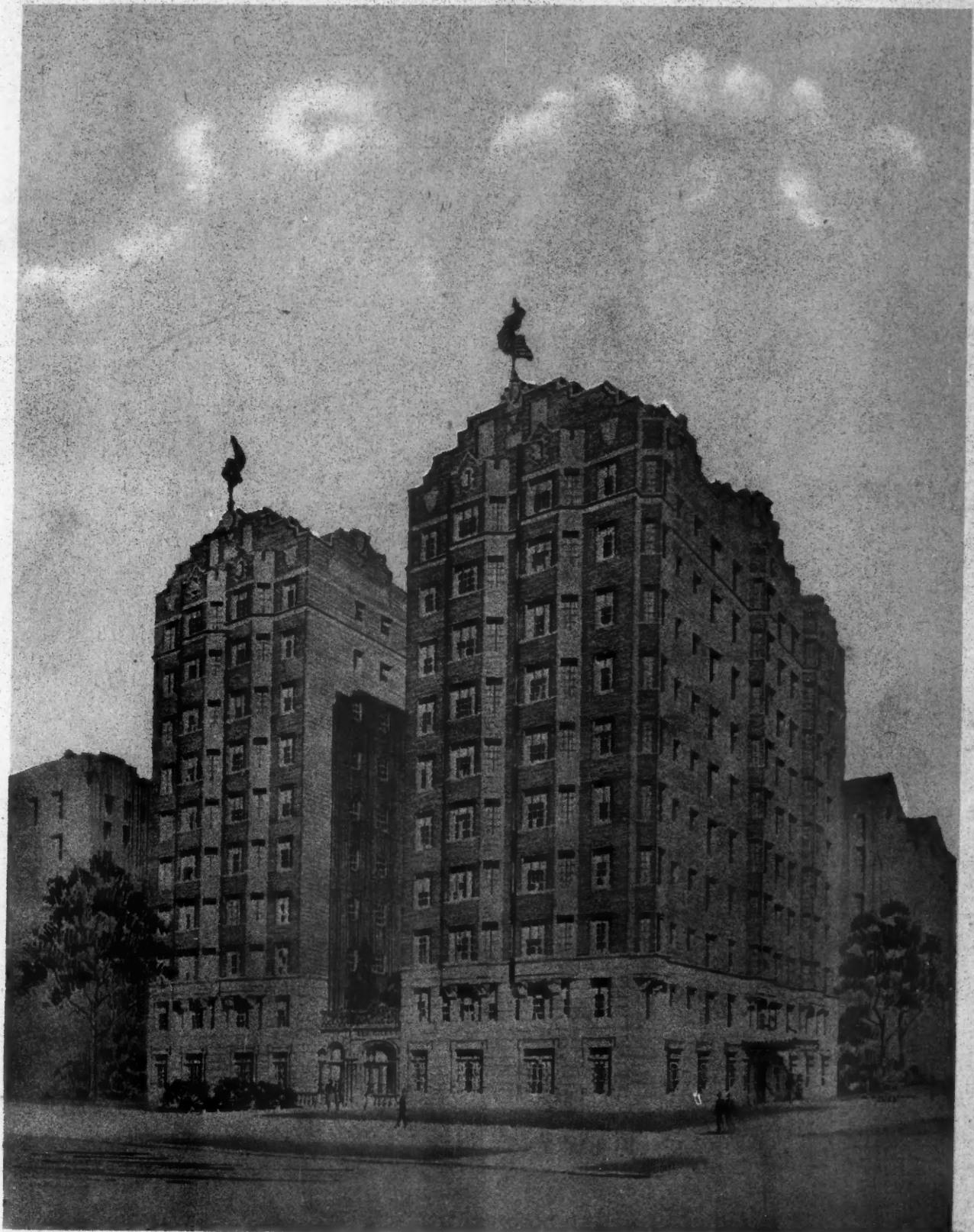
Denver's handsomest office building to date, The Republic Building, is to be exclusively for offices of physicians, surgeons and dentists. It is a twelve-story structure of steel frame with concrete slab floors and facing of pressed brick. It is to have high glaze pulschrome terra cotta on principal exposures which are tan brown in color with decorative terra cotta in pale yellow-green and blue.

One of the features of this building is a six-bed hospital with operating rooms. There are automobile parking facilities for tenants only on the ground floor and two basement floors connected by ramps for a hundred and fifty cars.

There are to be five high-speed passenger elevators of the new automatic signal electric control type, which provide service at minute and a half intervals. There is also a special stretcher elevator.

The entrance lobby is 17 feet in height with vaulted ceiling, plaster ornaments, caen stone walls, marble tile floor and wainscot.

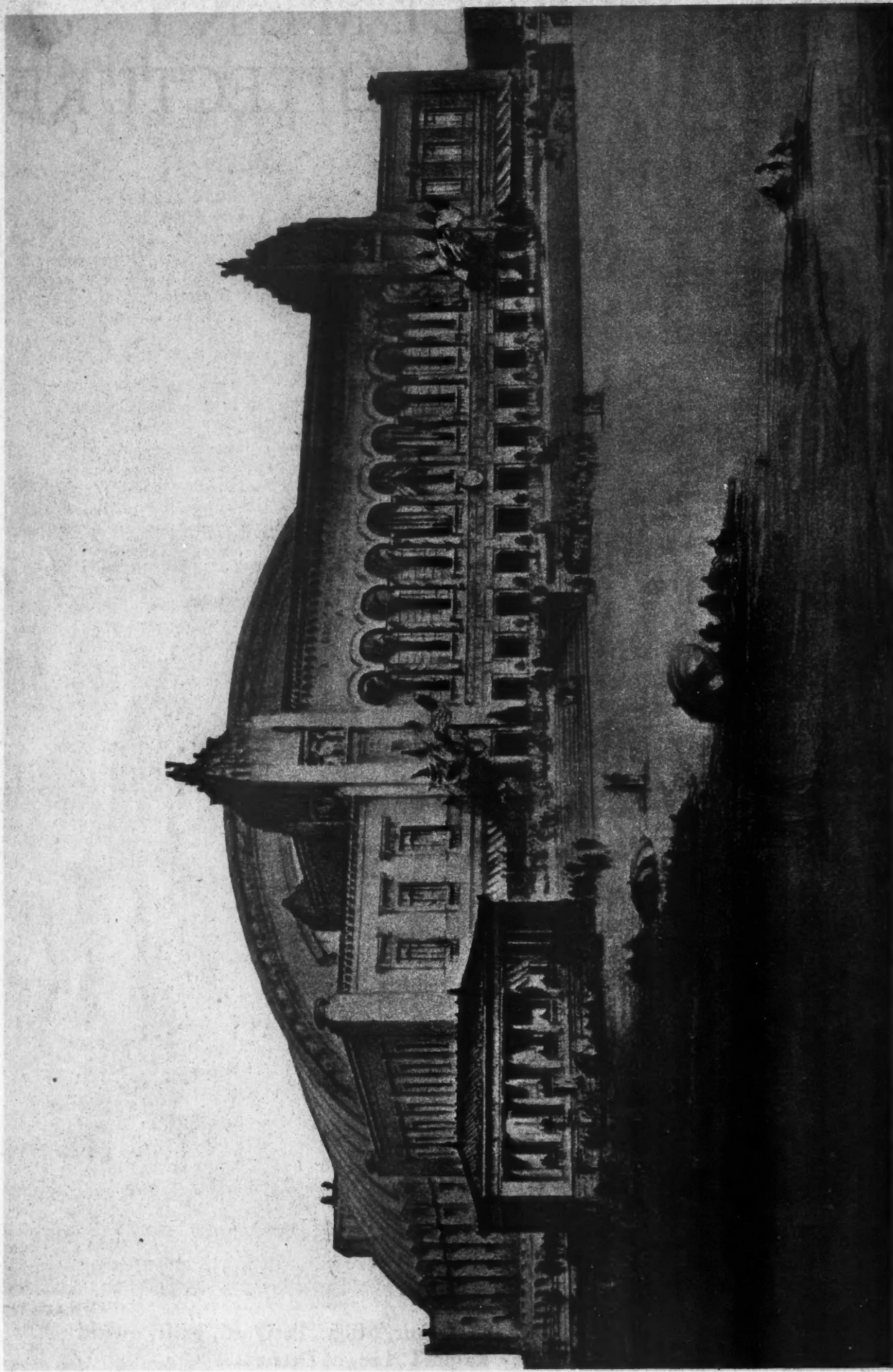
ART SUPPLEMENT *of* NOTABLE ARCHITECTURE



*The LEE CREST APARTMENT HOTEL, Detroit, Mich., designed, built, owned
and operated by Ralph T. Lee, of Detroit.*

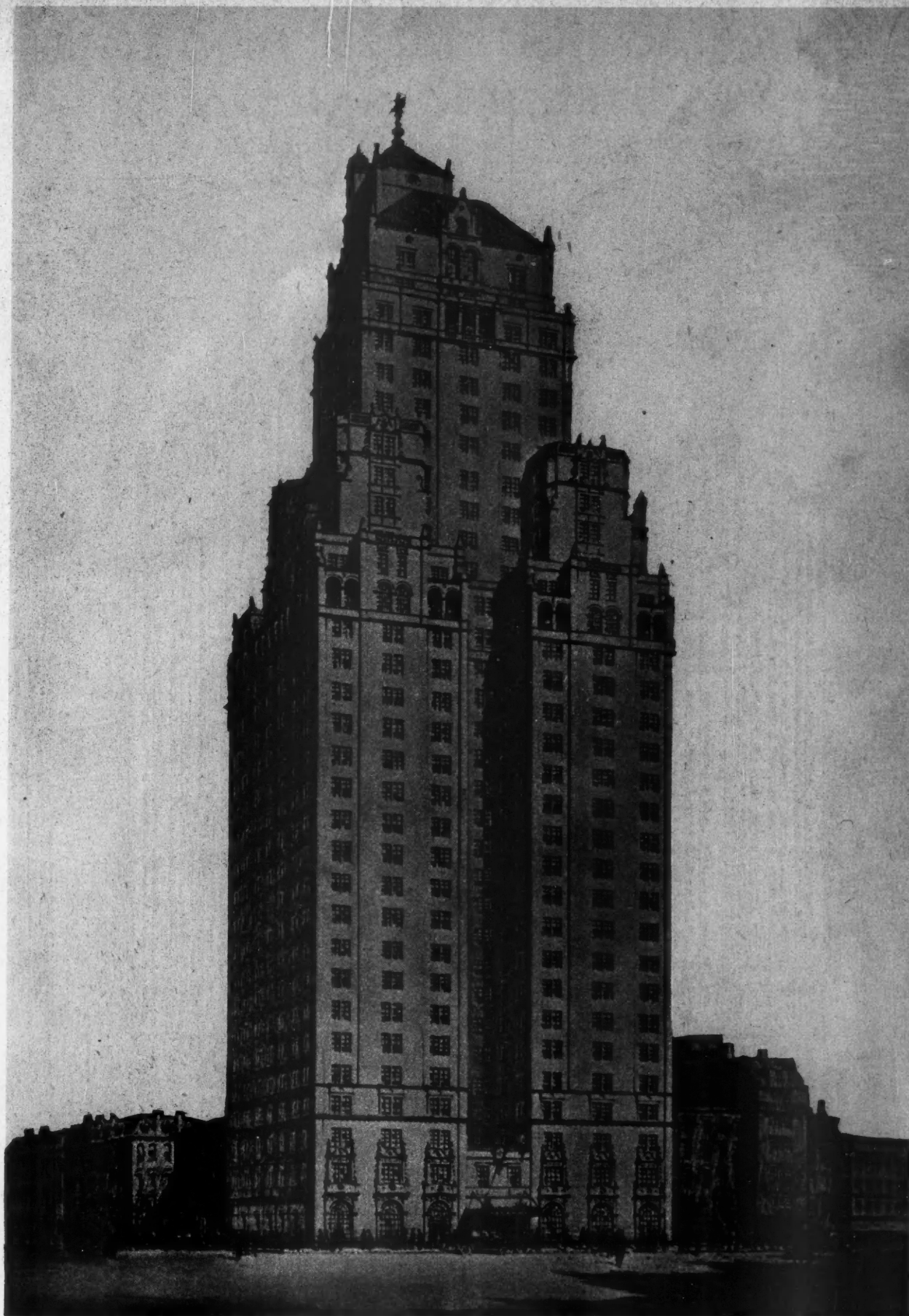
PLATE 105

The AMERICAN BUILDER, October, 1926



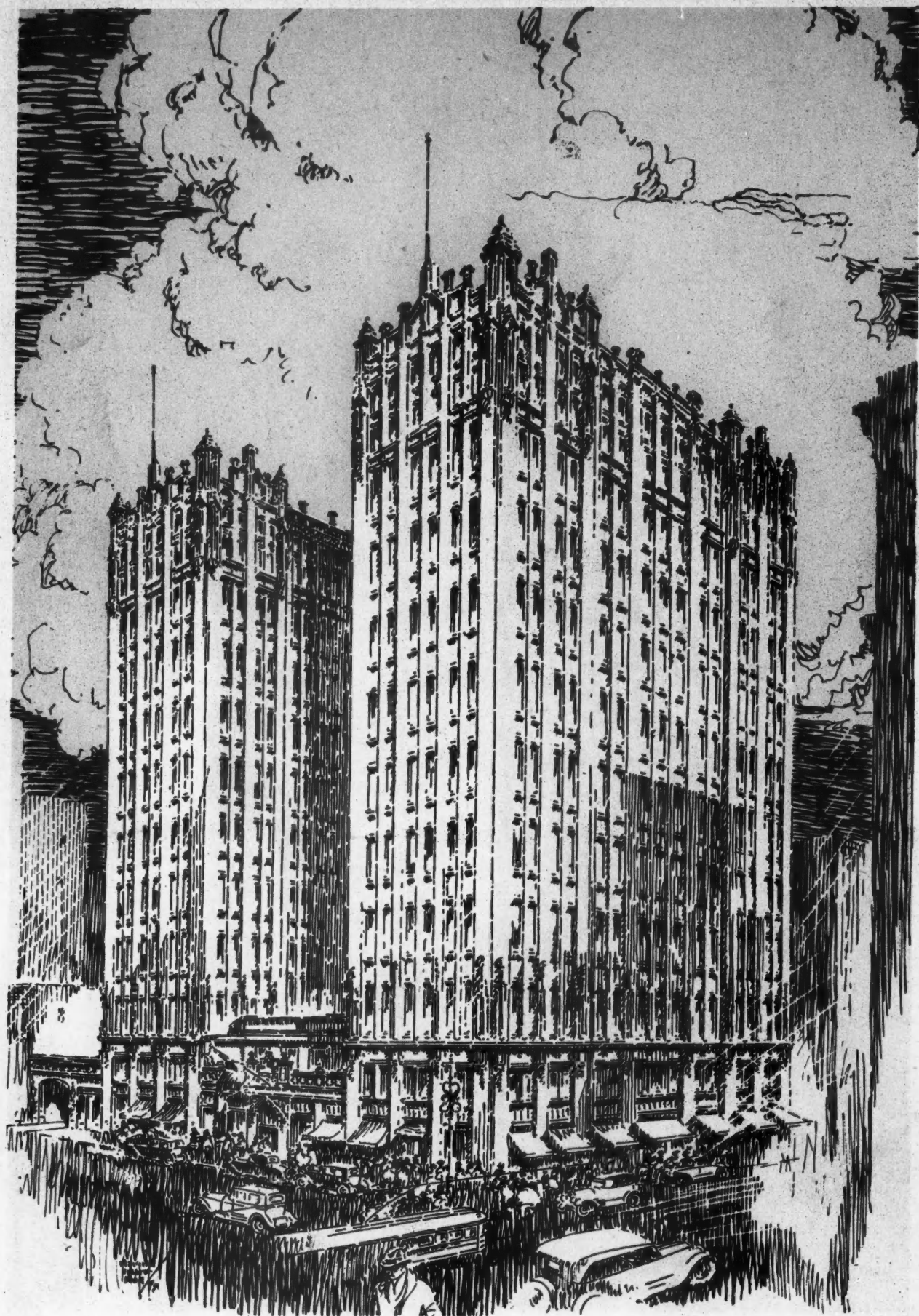
The NEW CONVENTION HALL, ON THE BOARD WALK, ATLANTIC CITY, N. J.; Lockwood, Green & Co., of Boston, Mass. Architects; will seat 40,000 people.

PLATE 107
The NEW CONVENTION HALL, ON THE BOARD WALK, ATLANTIC CITY, N. J.; Lockwood, Green & Co.,
of Boston, Mass., Architects; will seat 40,000 people.



The WARWICK APARTMENT HOTEL, 65 West 54th Street, New York City;
Geo. B. Post & Sons and Emory Roth, Associate Architects.

PLATE 107

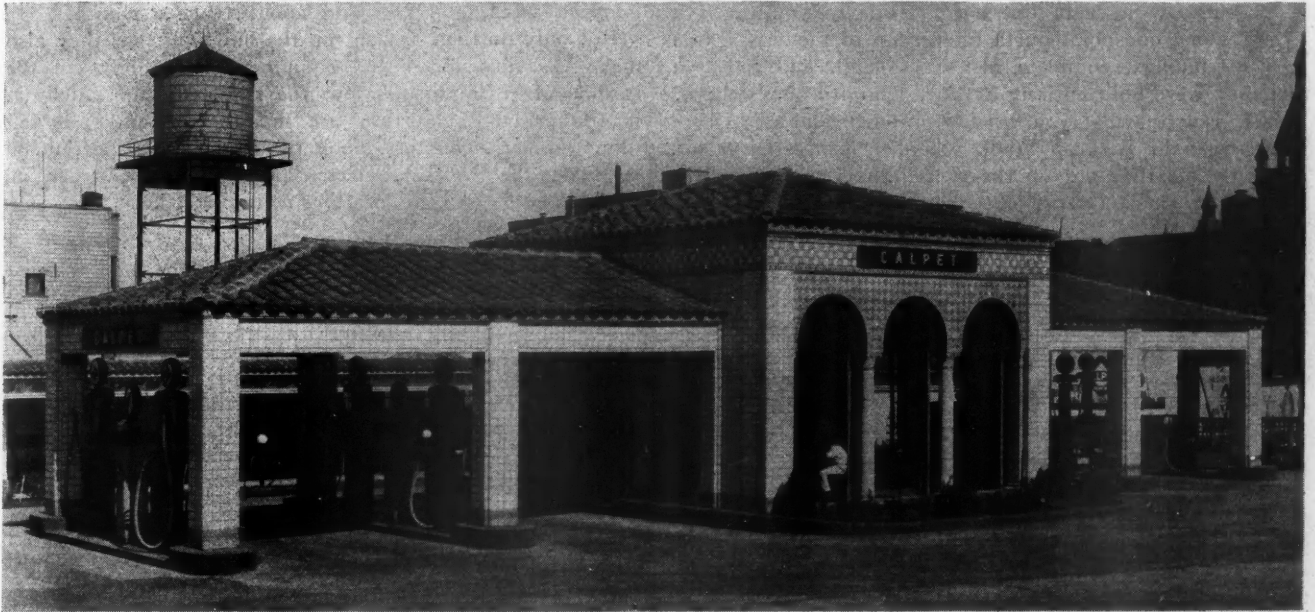


The REPUBLIC BUILDING, Denver's new center for doctors;
G. Meredith Musick, of Denver, Architect.

PLATE 108

Calpet Service Station Sets a New High Standard

WILLIS POLK & COMPANY, Architects



This Close-Up View of the Calpet Service Station, in San Francisco, California, Shows the Offices Through the Arches. The full length plate glass windows can be swung open when desired. Entrances to the rest rooms are on the opposite side.

THERE was opened, recently, in San Francisco, California, by the California Petroleum Company, a service station that is generally ranked as the most striking structure of its kind on the Pacific Coast, from an architectural, structural and service viewpoint.

The station itself is 30 feet wide by 80 feet long, over all, and is of concrete with a glazed tile finish. The tiles are white, but dull in finish, thus avoiding the highly glistening effect that is often so annoying in large white buildings. The red tile roof and band of colored tile, lend a contrasting

touch of color. The three arches form a pleasing feature for two sides of the station and, on the side on which the office is located, the effectiveness is further increased by the full length plate glass windows.

Twelve service pumps for gas and oil are provided and all tanks are underground. To the rear of the lot is located a shop, equipped with very modern mechanical device for conveniently washing and cleaning the bodies and motors of cars, changing tires, and similar servicing work.

ZOE A. BATTU.



A Bird's-Eye View of the Calpet Service Station Shows the Ample Room Available for All Kinds of Service, Washing, Battery Service, Tire Changing, Gas and Oil, with Wide Approaches to Each.

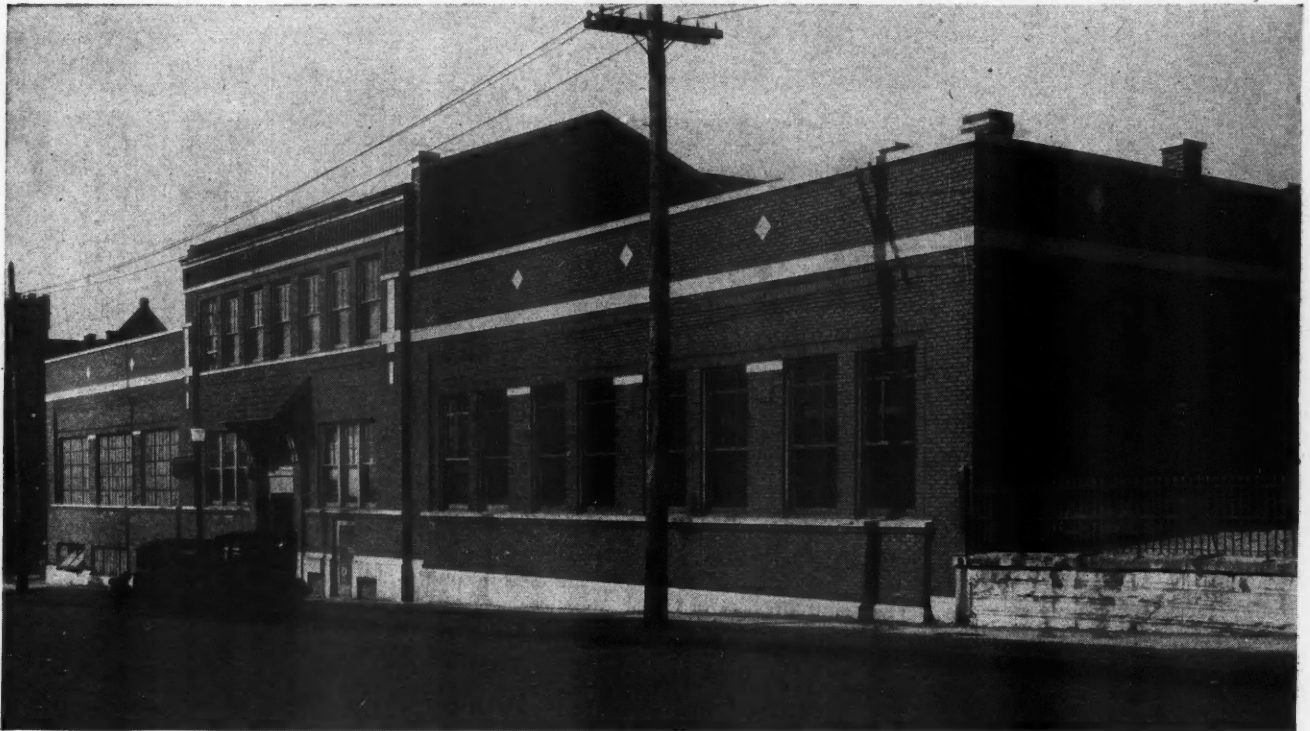
Lathrop Trade School Buildings Erected Entirely by Students

Kansas City Boys Build School Building

WOULD it seem like a fairy tale to you to have some one point out a fine group of modern school buildings, complete in every detail, and tell you that they were built entirely by boys who are pupils there? This is exactly what you would be shown and told, were you to visit the Lathrop Trade School in Kansas City, Mo. Not only did they put up the present buildings, including an 80-foot smoke stack, but they are now engaged in

hours a week, and are paid about twice a month.

Not only do the boys put up the buildings, but they also make the furnishings and equipment. The boys in the turning shop are turning out the stools for the cafeteria; in the cabinet shop they are making the desks, tables, filing cabinets, counters, book racks, etc.; the sheet metal workers, the welders, electricians and painters are all busy. The boys in the drafting department keep them sup-

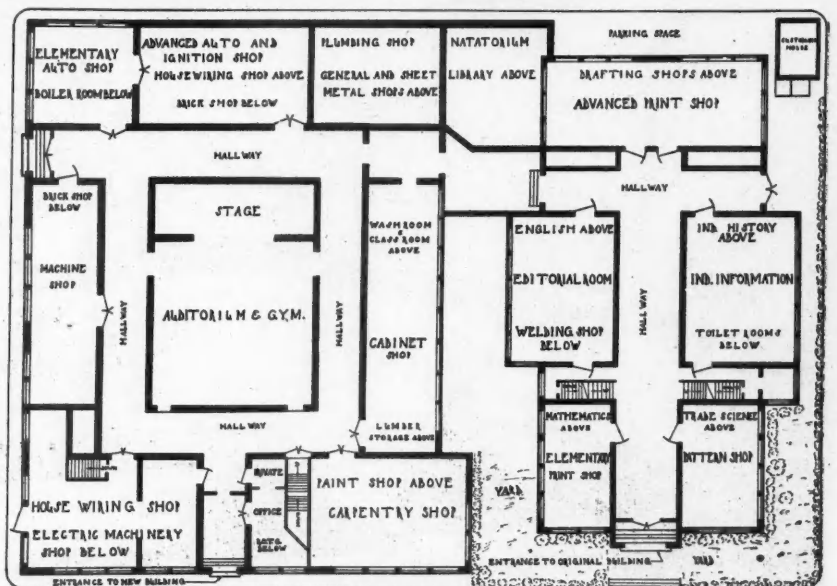


The Present Building of the Lathrop Trade School, in Kansas City, Mo., Was Built Entirely by the Boy Students in the School and a New \$60,000 Unit Is Now Being Added in the Same Way.

adding another \$60,000 unit to the group.

More than 20 trades are taught in this school, so everything about the new building is being done by the boys. And "boys" is the correct word, too, for these youngsters range from 14 to 16 years of age. The school is a free institution maintained by the Board of Education as a part of the public school system. Night classes are conducted during the winter months for apprentices in the trades who are employed during the day.

Work on the new building is organized in very much the same way as that on any other construction job. The superintendent of construction is an experienced contractor and builder; the instructor in each trade acts as foreman over his group of boys, teaching them the fine points of the work right on the job. There is a time keeper, just as on any other job, and the boys are paid regular wages corresponding very closely to the rate paid to apprentices in the trade. They work 44



This Plan Shows the Arrangement of Shops in the Lathrop School Where Boys of 14 to 16 Years Are Taught More Than 20 Different Trades.

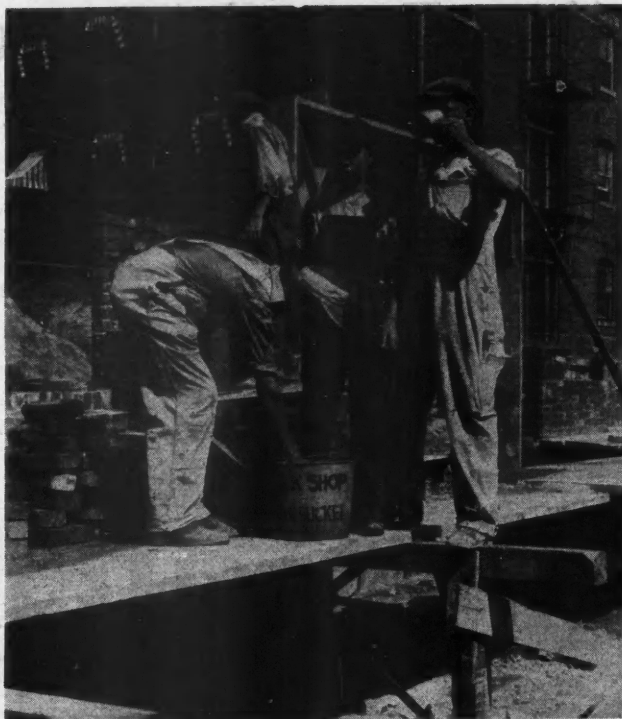
plied with duplicates and sectional drawings so that everything is done according to specification. Everything must pass rigid inspection. In the printing department, not only do they do the printing for their own school, but for the entire school system.

During the regular school term the boys spend a half day in their trade work and the other half day in related academic work, which is high school grade. Blue print and plan reading is one of the required subjects. The course covers four years, and graduates from this school, with a few years of experience in the trade, are excellent material from which to select foremen.

The new addition which the boys are building will be three stories in height with a full basement underneath. In the basement will be shops for the brickmasons, and the marble and tile setters. The new swimming pool will also be on this level. The quarters for the athletic coach, with the dressing rooms and shower baths will be in the basement of the old building.

The first floor will contain the advanced auto shop, the plumbing shop and the library. A dirt floor will be left in one end of the plumbing shop so that the boys can be taught the proper method of running pipe under ground and bringing it into the building from the street connection. The course in plumbing is now being worked out by a joint committee from the Master Plumbers' Association, the Plumbers' Union, and the school heads.

It is the intention of the school authorities to make the library of this school one of the finest reference libraries in the West. It will contain the latest and best books



The Youngest "Man" on the Job Is the Little Water Boy Who Is 14 Years Old and Has Been in the School One Year. He says, "I expect to become a full blooded electrician."

of a technical and practical nature, along with all of the best builders' and trade magazines. It will also contain an up-to-date clipping department where news items of an educational, technical, or mechanical nature will be preserved. This fine library will be free and available to all of the tradesmen and artisans of the city.

The second floor of the new addition will provide new quarters for the power and light wiring department, the sheet metal department, the oxy-acetylene welding shop, and a study hall. The entire third floor will be occupied by a cafeteria which can feed over 500 boys. Food will be prepared under strict supervision and served to the boys at cost.

Four hundred new lockers have just been installed which, with those already in use, will give each boy a private locker for his clothing, books, and tools. Speaking of tools reminds me of a statement by a salesman in one of the large hardware stores. He said:

"You can't fool those Lathrop boys on tools. They won't buy anything but the best standard makes."

It is said that these boys will go without lunches for a week, if necessary, in order to get the kind of a saw, hammer or trowel that they want.

This school is operated under the Smith-Hughes Law whereby the United States government and the state co-operate with the local school board in the upkeep of the institution. The night classes are under the direct supervision of the state and national departments of vocational education.—HARVEY ARTHUR WITT.



Setting Jamb

THERE is a way of setting jambs that, for ordinary purposes, will give good results, and at the same time save at least 50 per cent of the cost of labor. Put your jamb together, having the sides cut to the proper length, and case up one side of it with a pair of straight casings. Set the cased-up jamb into the opening and, using the casing for straight-edge, plumb one side and nail it to the wall. Then level the head, and proceed to plumb and nail the other casing. Now the other side of the opening can be cased up; the heads and backbands put on and the work on the opening completed.

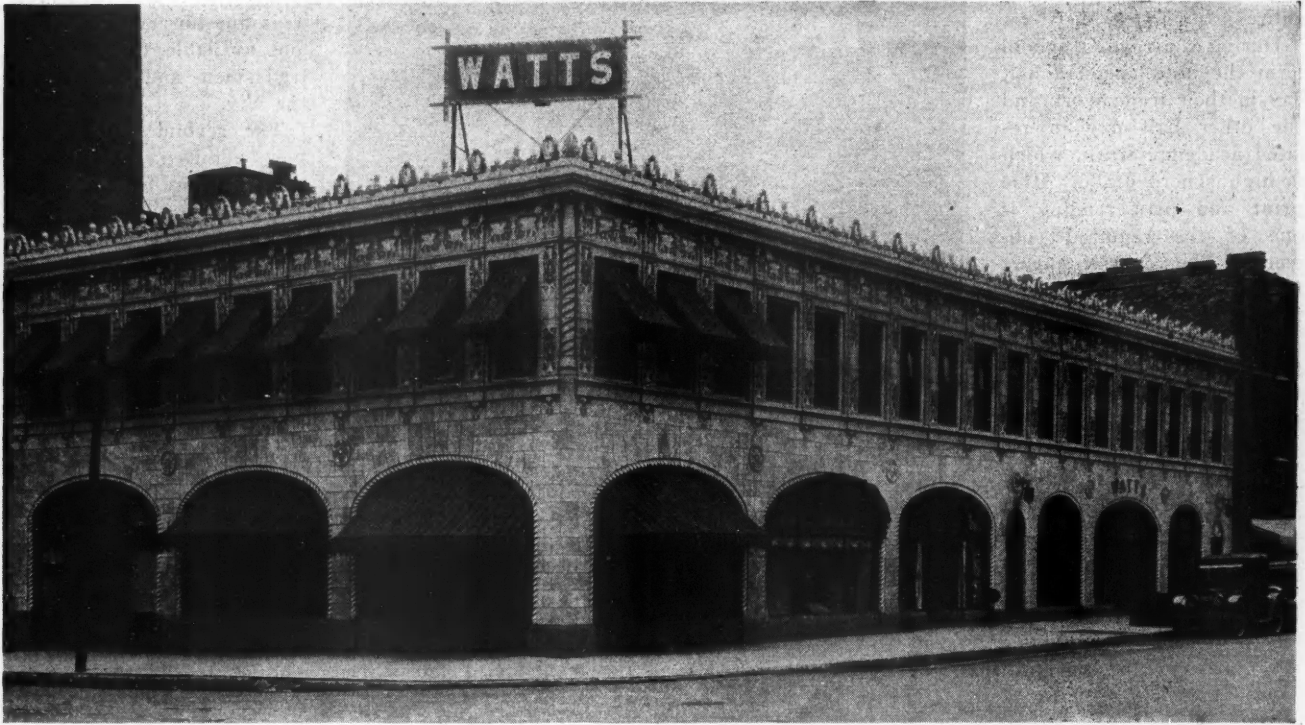
A simple way to level the jamb, where the system explained in the preceding paragraph is used, is to establish the top of the door on the wall, and add to that the width of the margin to get the point for the top of the side casings.—H. H. SIEGLE.



The Instructor in Each Trade Acts as Foreman Over the Boys Who Do the Actual Work and the Whole Job Is Supervised by an Experienced Contractor and Builder.

The Italian Renaissance Style In Beautiful Retail Store

MARTIN & TULLGREN, Architects



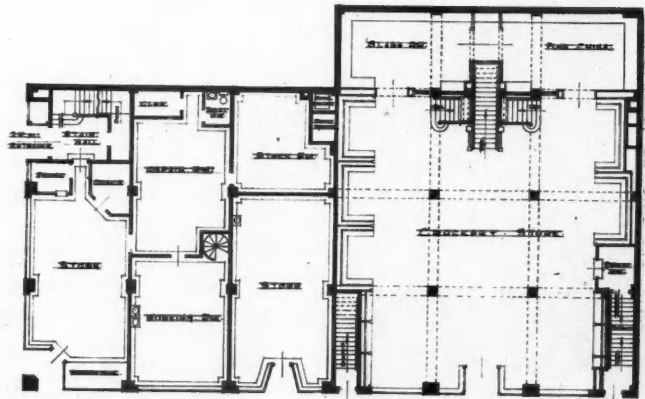
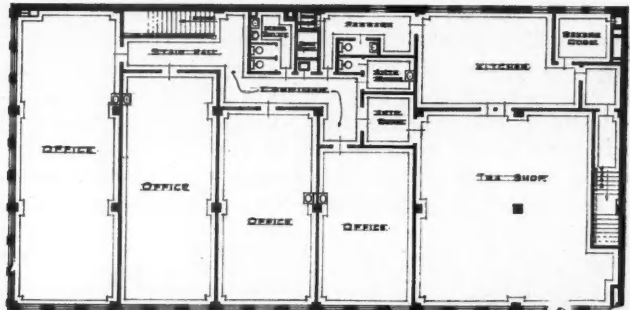
The New Building of the George Watts & Son Company, in Milwaukee, Was Designed by Martin Tullgren & Sons, Milwaukee Architects, in an Effective Blending of Italian Renaissance and Spanish Style.

WHAT is said to be the finest glass and china shop in the country was recently constructed in Milwaukee, by the George Watts & Son Company, at a cost of approximately \$150,000. According to critics who took part in the opening celebration of the new building, and who have visited practically every glass and china shop in the United States, the new shop of the Watts Company is by far the most beautiful and up-to-date of its kind, and the new building, located at the corner of Mason and Jefferson streets, a few blocks from the heart of Milwaukee's principal business district, is certainly one of the most attractive mercantile establishments in the city of Milwaukee.

The Watts Building is designed especially to suit the delicate tastes of the artistic clientele to which it caters. Before planning a single feature of the building Howard Watts, manager of the store, whose father, George Watts, founded the business in Milwaukee in the year 1870, toured the country and made a close and critical study of every notable store of this kind. After the tour of inspection was completed Mr. Watts drew up a rough general plan of the building, combining as many of the features of similar structures as had impressed him and adding a few individual ideas here and there. He then entrusted the design and construction of the building to Martin Tullgren & Sons, widely known Milwaukee architects.

In addition to the Watts shop, which has a frontage of 76 feet, the main floor of the building is also occupied by a women's apparel shop, and a studio. The second story is given over to a tea room, a linen shop and a high class jewelry concern.

The building has a frontage of 120 feet and is 60 feet deep.



In Addition to the Watts Store, the First Floor Provides Space for Two Other Shops While Three Shops Are Tenants of the Second Floor.

It is of reinforced concrete construction. The entire building is faced with a special finish terra-cotta of brownish hue. The terra-cotta used on the building is something new, and was developed especially for the work. A pleasing and decidedly different effect was obtained by scraping the terra-cotta with a heavy wire brush before it was glazed, with the result that it give a richer and more distinctive tone to the appearance of the building.

The building, which is two stories in height, is predominately Italian Renaissance, although there is a touch of modern Spanish architecture in the design. The combination of the two types of architecture was carried out with good results. The first story of the structure is simple in design, while the upper story is highly ornate. Rope moldings, which edge the arch-shaped windows and the entrances, and which are carved flush with the face of the stone work, together with the four carved medallions set at equal distances across the front of the building, form the only decorative features of the first story. Two bronze lanterns are suspended from the medallions over the two small doors on either side of the main entrance to the Watts shop. The name "Watts," done in dignified bronze cast letters, is fastened to the masonry over the entrance.

The second story front of the building is graced with 18 equal sized windows, bordered with florid terra-cotta panels, which give the appearance of being set in heavy ornate frames. The building is surmounted with a heavy cornice, trimmed with beautiful terra-cotta ornaments in Italian Renaissance style. Harmoniously blending colors, which were worked into the exterior decorations of the building, furnish an attractive note.

The entrances to the various shops are very wide and lead to setback doors, which are flanked on either side by a large arched window. The large windows are particularly adapted to the nature of the business places in the building, and afford a comprehensive view of the whole interior. Individual display windows are not used, but in their stead the main rooms of the various shops are used for display purposes.

The interior of the Watts shop, after which the other shops on the first floor are modeled, is spacious and simply but effectively decorated in keeping with the



At the Foot of the Bronze and Marble Stairway Leading to the Mezzanine Is an Italian Marble Fountain of Beautiful Design.

general effect of the exterior. The walls of the shop, which are of textured plaster, are finished in buff shade. In working out the color scheme of the interior a cross between a pink and a buff shade was used.

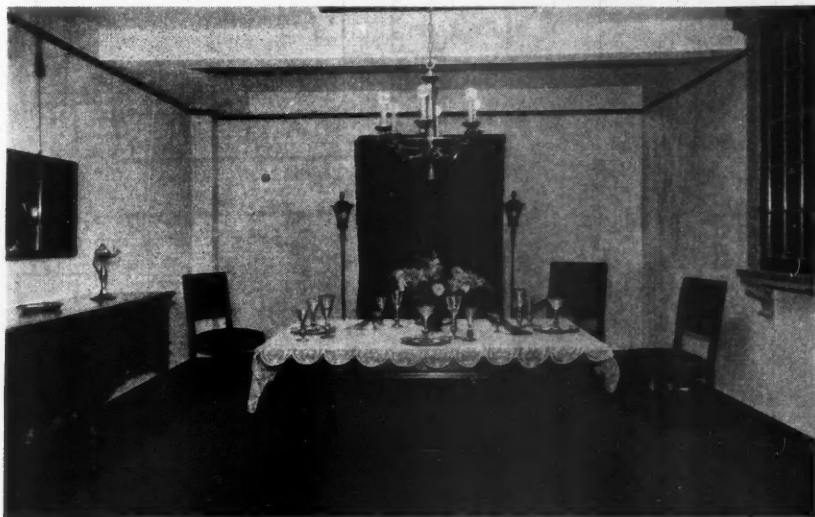
In the rear of the main room of the shop is a bronze and marble stairway leading to a mezzanine, 60 feet by 16 feet in size, which is one of the outstanding features of the establishment. An elaborate Italian marble fountain is set in front of the stairway, and serves to emphasize the Italian Renaissance keynote carried out in the building. The general offices of the company occupy the center space on the mezzanine floor. The private office of Mr. Watts is situated on one side of the mezzanine, while on the other side is a handsome, completely furnished dining room, 20 by 16 feet in size. The furnished dining room gives the patrons an opportunity of visualizing the way a set will look in actual use. Two display rooms, each of which is 16 feet by 30 feet in size, are located to the rear of the main floor and directly below the mezzanine.

All the fixtures in the Watts shop are of solid American walnut and harmonize perfectly with the decorative scheme of the entire building. More than 12,000 feet of walnut was used in equipping the interior of the shop. The floor in the Watts shop is of cork tile, which is particularly suitable for a business of this nature because it eliminates to a great extent any danger of breakage, and at the same time lends a tone of quiet elegance and refinement to the establishment. All the other floors in the building are of terrazzo.

In the basement there is a show room—in which the lower-priced dinnerwares are displayed. This room is 16 feet by 60 feet. The remainder of the basement is given over to the stock rooms and to the receiving and shipping departments. Heavy steel fireproof doors were installed in the packing and receiving rooms so as to prevent fire from spreading in case it should start.—W. T. N. B.

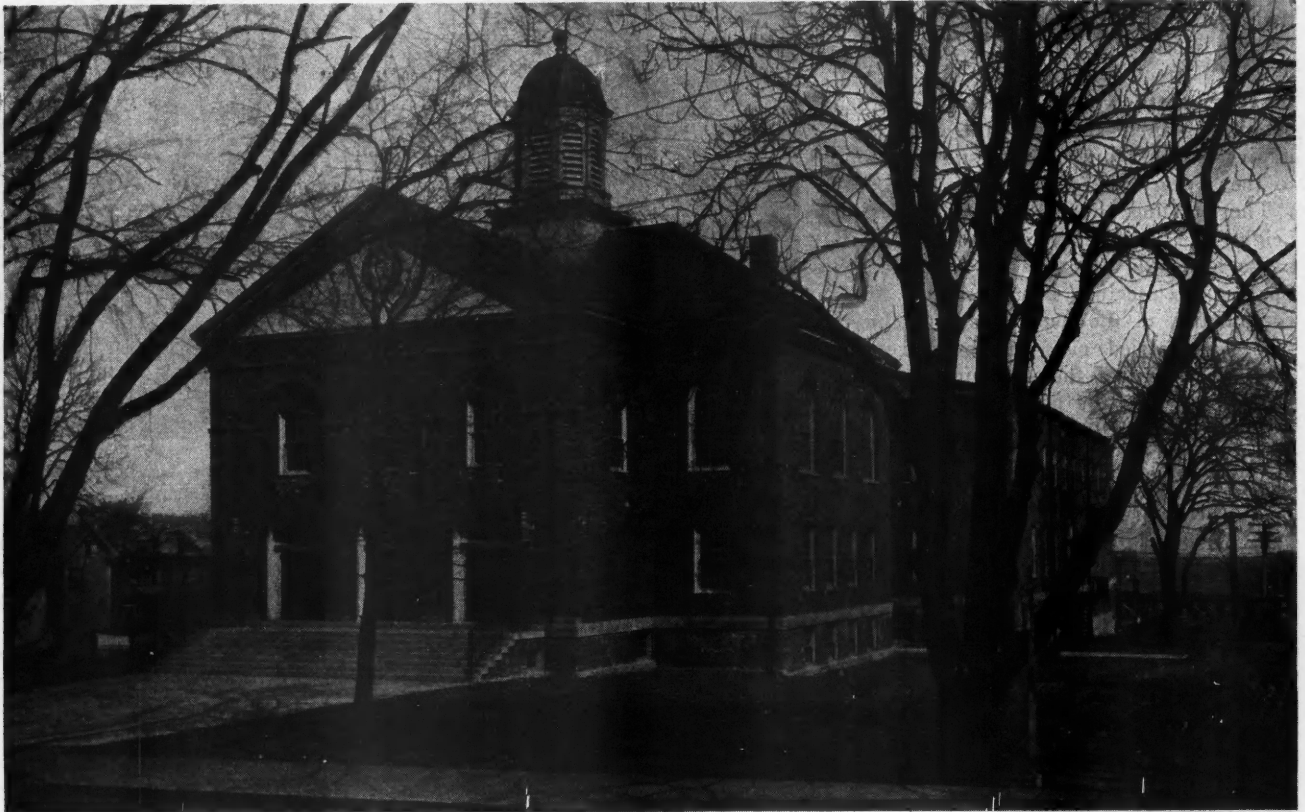


“SMALL houses often become old fashioned long before they wear out, a result usually of poor, illogical design. Good planning and designing survive changing customs and from generation to generation produce the homes that never go out of style.”



A Completely Furnished Dining Room Is Found on the Mezzanine Floor and the Fixtures Throughout the Watts Store Are All American Walnut.

The Plymouth Memorial Building



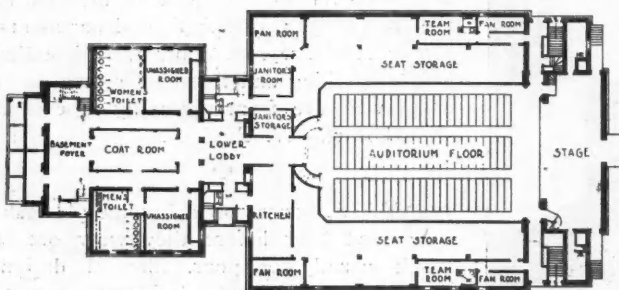
In the Historic City of Plymouth, Mass., This Colonial Building Was Built as a Public Hall and a Permanent Memorial to the Citizens Who Have Served Their Country in Its Various Wars.

FOR the first time in its life of more than three centuries, Plymouth, Massachusetts, is in possession of a building suited to its needs for entertainments, conventions and business meetings of a community character, a structure of the type any large modern municipality requires. Back in early days the town acquired the ancient Colonial court house, but that was outgrown many, many years ago and all gatherings of any size have been held in halls of private owners.

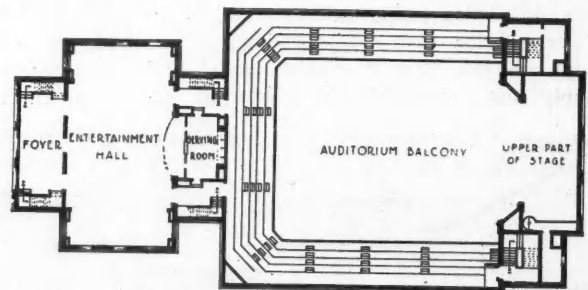
During many years the subject of a new municipal building was under consideration. Finally in connection with observance of the Pilgrim Tercentenary, to occur in 1920, an appropriation was voted of \$300,000 for the building, but the advance in labor and materials made it impossible to proceed according to the plans chosen and 1920 found the town lacking in its hoped for contribution to the Pilgrim Tercentenary.

It was about this time that the suggestion was made that the new building be not only a public hall but also a memorial structure for all of the Plymouth men who

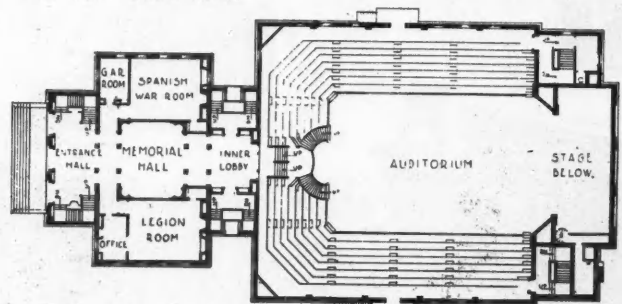
had served as soldiers or sailors in any of the wars of this country from the time of the coming of the first settlers. The suggestion found almost instant favor. Plymouthans were still mindful of their promise made prior to 1919. Dissenters got together on a common ground and the plans of the present building which it was estimated could be erected inside of the appropriation were accepted in a meeting of the citizens in March, 1924.



BASEMENT PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN

A Large Auditorium, a Smaller Hall and Special Rooms for the Various Veterans' Organizations Are the Main Features of the Plan Which Takes Advantage of the Sloping Grade on Which the Building Was Placed.

Little & Russell of Boston were the architects and with them were associated J. D. Leland & Co., also of Boston, architects and engineers. The result of their work is what is considered by critics one of the most complete and convenient public buildings for community uses there is in Massachusetts.

Fronting on Court Street the site slopes gradually toward Water Street, commanding a fine view of harbor and bay. In placing the building on the lot as well as in its design, advantage was taken of the sloping grade. The front is at some distance from the street line, while the main floor of the auditorium in the rear portion is on a level with the front basement, with no excavation beneath it for any purpose, and exits from that portion come directly on the ground, while outer stairways from the balconies are not high or steep.

The style is colonial, the exterior being of rough brick laid in no set order to better adhere to the old fashioned idea, to which the ancient patterned lanterns, entrance, small



The Main Floor of the Auditorium Is on the Basement Level with Seat Banks at Either Side on the Street Level.

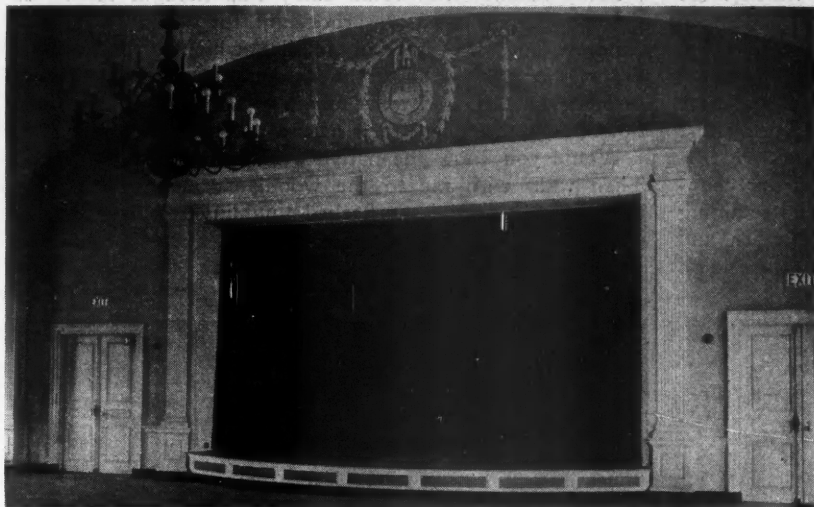
of the auditorium, directly over the lower entrance referred to. Stairs lead on either hand to the main floor. Above is the balcony, reached by stairways from either end of the auditorium and over the balcony high above the main entrance is the moving picture booth. The brick outer walls are concrete finished inside and floors and seat banks are of the same material.

The main floor is 80 by 50 feet and provides for 925 removable chairs, which can be easily stored beneath the seat banks, access to the space being had through openings from the level of the floor. The seat banks will accommodate 1,400 people, the total capacity of the hall being 2,300.

The stage is approximately 30 feet deep with a proscenium opening close upon 50 feet. It is provided with the latest patterns of illumination. The height of the hall to the big skylight in the roof is 52 feet and there is a special steam heating coil just under the glass to prevent the accumulation of ice and snow on its exterior.

For smaller assemblies than would require the main auditorium, there is a hall above the memorial hall which is a gem of Colonial design.

—CHARLES M. DOTIN.



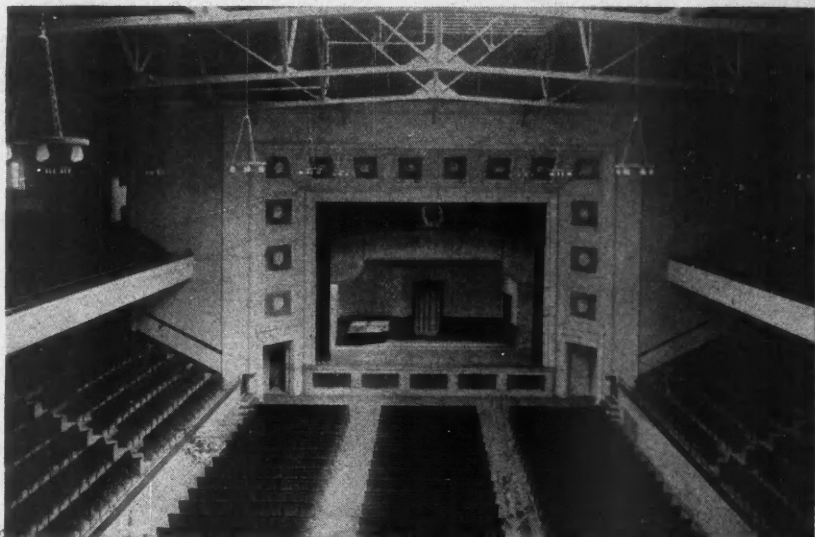
An Assembly Hall, Resembling the Pure Colonial Design of the State House at Boston, Is Provided for Smaller Gatherings.

window lights and hand wrought iron railings contribute much. Approximately, the building is 200 feet long and a little less than 100 feet wide.

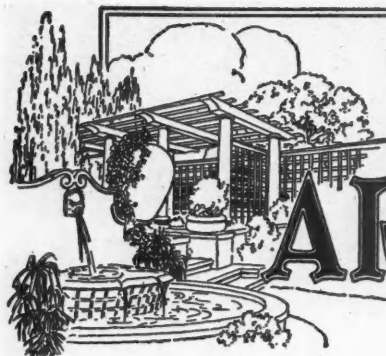
The triple front doors give entrance to a roomy lobby with stairways on either hand to the basement or the upper floor. A ticket booth and an administration office are in this portion. Cloak and toilet rooms are below, with roomy passages on either side of the cloak room which unite into one leading directly upon the main floor of the auditorium to the rear.

Back of the lobby is the memorial hall, in which are four large, glass-fronted niches for flags or other war relics of Plymouth soldiers or sailors, and space for memorial tablets on the walls. To the right are the quarters of Plymouth Post No. 40, American Legion. On the left are rooms for the few veterans of the Civil war, composing Collingwood Post No. 76, G. A. R., and for Emil W. Picard Camp of Spanish War Veterans.

At the rear of the memorial hall one emerges on the level of the lower seat bank



The Auditorium Stage Is Large and Follows the Best Modern Practice in Equipment and Illumination.



LANDSCAPE ARCHITECTURE

By F.A. Cushing Smith Landscape Architect

The Wild Flower and Fern Garden

WE have heard many times in our childhood days, in our visits into the realms of botany, our excursions in search of herbarium material which must be carefully pressed and more painstakingly mounted, of the many native plants and wild flowers which abound in this section of the country. The Wild Flower Preservation Society has done much to familiarize the public with the native plants, and to admonish and advise them against a wanton destruction of these our original flora.

No more worthy task could be undertaken by our counties, states and nation than that of preserving and retaining for future generations the natural stands of timber and the native woodland forest floor in our county parks and

preserves, in the state and national parks and the national forests.

Many communities could carry this thought farther in the establishment of an arboretum for the use of their children and the general public, which shall contain, properly labeled, plant specimens of the native wild flowers, the ferns, shrubs and trees carefully arranged under conditions best reproducing their natural habitat.

Would you know the native wild flowers and the ferns? Then walk with me to the woodland, along the shaded path and beside the sun-flecked tumbling stream. Not all of our woodland friends will be found along the edge of the woods, nor all of them in the sunny clearings. Some



The Wild Flower and Fern Garden Possesses a Charming Informality Which Appeals to Every Lover of Nature and Offers an Excuse for Many Delightful Days in the Open Searching for New Specimens in Their Native Haunts.

seem to delight in hiding beneath the dogwood, or the hawthorn thicket, others to seek the cool dampness of the marsh and wet meadow, where the cowslips blink brightly at you.

Have you seen a meadow of wild native hyacinth or scilla with its pale blue heads obliquely stretching upwards from slender stems among the lush grass. Its flowers attract ants, bees, wasps, flies and butterflies, and it is thus that our blossoms are cross-pollinated as these insects fly from flower to flower.

In the moist, rich woods in May, and early June we see the nodding heads of the trillium, and along the streams the blue iris or fleur-de-lis with its large blossoms which calls the passing bee to its favorite color. The wind-flower or anemone, the wild columbine, the hepatica or liverwort so eagerly sought in the early warm days of May, the many varieties of violets, the wild phlox, blue bells and spring beauty or claytonia vie with one another in their trumpeting of spring.

Is there one who has not with a shout of joy discovered the quaint little blossoms of the Dutchman's breeches, or picked a nodding bouquet of the shooting-star, as it rises gracefully between the broad green leaves at its base? Similar to it in some ways are the bright yellow lily-like flowers about an inch broad, of the dog's tooth violet or adder's tongue.

Solomon's seal, the blood-root with its white flowers and red stem juices, the rarer orchids among whom the lady's slipper and the showy orchids are perhaps the most unusual, the bell-worts nodding yellow blooms and the fall blossoms of the wild asters which in August and September abound in sunny meadows and along the country roadside even in the poorest soil conditions are but a few of the joys to greet those who wander with me among the large group of wild flowers.

The soil in which you attempt to grow wild flowers should be deep rich loam with a little sand therein, and enough leaf-mold to conserve the moisture about the roots. Do not permit the plants to dry out when transplanting them. Try to reproduce the soil and moisture conditions to which the plant is accustomed, remembering that water-plants will not thrive on a dry knoll nor even in a moist area from which, due to drain tile or natural drainage, the water table in the soil is lowered rapidly and thoroughly after a storm.

Picking the flowers only when in the woodland, does but little harm, so long as the plant itself is not wantonly torn out by the roots in great areas for no apparent reason. The actual extermination of some species in large tracts of land has actually occurred in this way, and the writer

cannot add too strongly his word of protest against such spoilage of our native plants.

In the growth of ferns—and their collection is one of the fascinating phases of naturalistic gardening—we find that most of them require a soil rich in leaf-mould, well-drained and usually semi-shady conditions. The soil particles should be very fine, and enough leaf mould added to make the soil very light and porous. The level of the planting areas should be raised 2 or 3 inches above the surrounding level of the garden. Take care not to plant the roots too deeply, in most cases keeping the crown above the level of the ground.

Of the varieties the maiden-hair fern or adiantum, the aspidium family among which are the Christmas fern and the various wood ferns, the asplenium family with the spleenwort and lady fern among its members, the osmunda family including the Claytons fern, and the polypody group especially adapted to rock work with the woodsia ferns, are the varieties best adapted to our northern climate.

Take the advice of the man who specializes in the growing of ferns, and that of the landscape architect for the names of the varieties best adapted to open sunny conditions, for dry, shady places, and for the moist shady spots in your wild flower garden.

To best reproduce a wild flower garden, use the native shrubs and small trees as your background for the painting of the wild flower canvas. Without a sturdy background the plants may look small and weak. They will not give the effect which you desire unless they are planted in large quantities, for it is the mass planting which attracts attention, and provides the accent so much desired in the woodland edge, or upon the forest flower in the open glades.



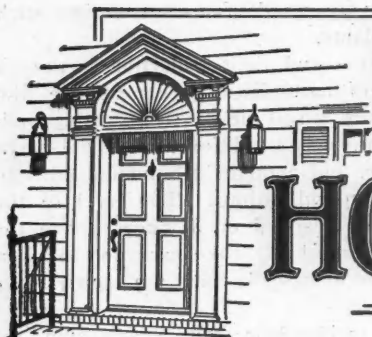
Some of the Most Beautiful Plants Grow Wild on the Borders of Lakes and in Marshy Spots Where They Find Abundant Moisture.

Prices Are Reduced

AN announcement was recently made by Gerard

Swope, president of the General Electric Company, that a further reduction in the price of Mazda lamps became effective September 1, 1926. This reduction amounts to about seven per cent on sizes generally used of the standard line of lamps and approximately five per cent on all other types.

This is the eighth reduction in Mazda lamp prices since 1920 and this reduction means a saving to the public of approximately \$4,000,000 a year. The prices are now 44 per cent below the 1914 prices, compared with a 65 per cent increase in the average cost of commodities since that year. This had been made possible by better manufacturing methods, standardization and simplification.



DETAILS OF HOME BUILDING

The House of Stone

By V. L. SHERMAN,
Lewis Institute of Technology

IN an earlier article reference was made to advantages that might be taken in transportation of materials for building. That such advantages are taken is discovered by anyone interested in his travels. And stone, as a material, would surely come in this class. No building material shows more enduring beauty than stone, and for these two qualities sacrifice in other portions, for the sake of stone, is unquestionably wise.

You will hear that stone in a wall is subjected to chemical action through the atmosphere; that it becomes discolored, and mortifies both itself and the builder; that it is more in demand for formal town buildings and not for residences. But you may take all of this negative advice and still fail to cover the one positive fact that stone possesses the greatest suitability.

For myself I have far more clear recollections of stone houses than of any other sort. Along the west bank of the Fox River, north of Aurora, Ill., there is a fairly large gray stone house. It is a number of years since I saw the place, but I believe that its heavy flat stone wall with the thick, deeply raked joints would go down on paper very easily if I attempted to sketch it from memory.

So, if you are within reach of stone, or if the price of stone is low enough to be attractive, take advantage of that fact. There is enough variety in the characters of building stone and enough variety in the characters of walls to place a great many localities within profitable reach. To get down to cases, take the house known as the "Flagg type," or a modification. This, as shown in Fig. 6, has an air of its own, is as strong as it looks, and is far from expensive.

When limestone slabs, undressed, can be embodied in a concrete wall, and broadly pointed after the forms are removed to give such a pleasing wall, why hesitate? The cutting, dressing and expensive foundation work are left out and, for the type, nothing is missed.

Perhaps the previous rambling may be accounted for in the fact that stone is not used nearly as much as it should be on moderately priced work. It is a fact that stone is used in localities familiar with it and where the building is local in method and construction. Everyone on the lookout has seen fine examples of such work in so-called "out-of-the-way" communities.

Another point which should be considered in building of stone is decreased fire-hazard in country work. The time has come when suburban communities are encouraging out-of-town building because the suburbs are becoming crowded. Fire prevention must be considered and anyone building a permanent home away from the main centers, and putting in his own water and light plant, would be considered silly not to use every means toward a fireproof home, or a home which would be only a partial loss in case of fire. Stone houses are to be recommended for this very reason.

The building shown in Fig. 1 and Fig. 2 is a new

one in Milwaukee. The foundation wall is block, cement and tarred without, carrying the usual wall plate, but with sufficient projection to hold a heavy concrete and stone wall besides. The house frame is built in the ordinary way, but with manufactured sheathing.

As the frame is completed a portable staging is erected against the wall which carries a platform for pouring and a form face even with the outer edge of the foundation wall. This staging is wide enough to permit easy handling, and, being wide, is plenty strong enough for the temporary form. As the wall is poured back of the first stone which is placed at the sill the platform is raised on its pins, more stone is faced on the form and the pour fills in around. This operation is continued on up to the plate, which, in a Flagg house, is usually lower than common.

Being lower, particular care is used in the design at the rafter foot to build tight. There is in this type a peculiarly desirable effect for small houses. The slope of the roof is used to distinct advantage while the wall volume is diminished. This effect, which is so common in Europe and was in this country during the Colonial days, had nearly passed out.

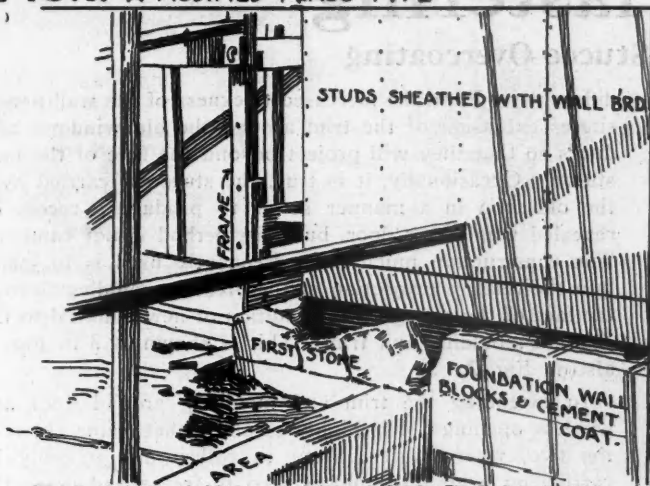
In stone work most faulty construction may be traced to faulty load distribution and poor footings. As compared to other types in building, however, mistakes are comparatively few. There are several reasons for this, perhaps the main one being that if a stone wall has a past you cannot hide it. A stone wall, then, is given more consideration from the very start.

An instance of usual forethought is shown in Fig. 4. These arches are different, of course, but it is apparent that all joints are located from the various curve centers. Or they are at right angles to the curve of the arch at the joint. An architect would say, perhaps, that the joint is always normal to the tangent of curvature. The first in Fig. 4 stresses this point, and such an arch would be strong or weak as the joints are carefully or carelessly reckoned.

Loads and resistances must balance. When a joint is not normal to the curve (or centered from the arch) the loss in resistance must be made up by friction at the joint or failure occurs. Friction in such a case is absolutely worthless and failure at one place involves not only the arch but the whole structure. Balance in an arch is as necessary as balance in the members of a truss.

In Fig. 5 is shown a very plain entrance. It is used here because it has been pointed out to me more than once as extremely attractive for a small type country home. When such a home is built the owner's first wish no doubt is to have the home, and especially the entrance, denote permanence and, if possible, age. No country-loving habitant likes to admit tenancy merely, and any counter-evidence is appreciated.

FIG. 1. THE BEGINNING OF A POURED STONE WALL: A MODIFIED FLAGG TYPE.



THIS WALL IS SHOWN READY FOR THE POURING-FORM. THE FIRST STONES ARE IN POSITION. THE FRAME FOR HOLDING THE FARTHER WALL IS SET.

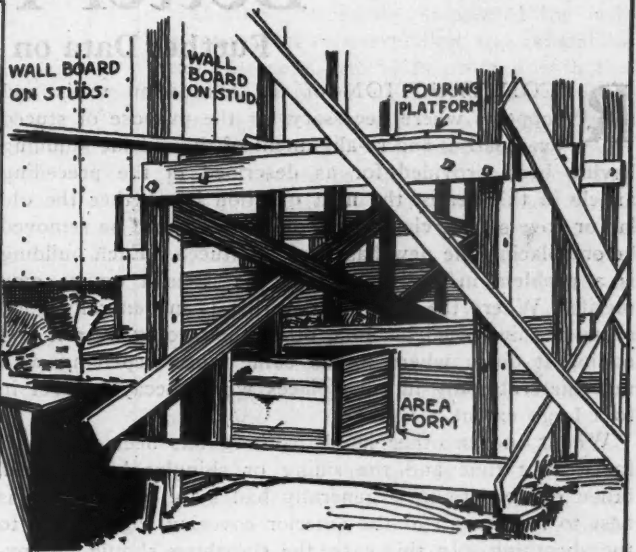
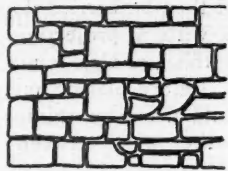
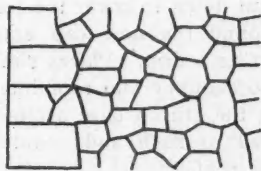


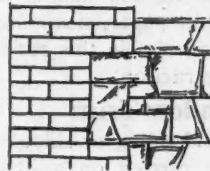
FIG. 2. FRAME IN PLACE. STONE SETTING LAID WITH RUNWAY AT FAR END.



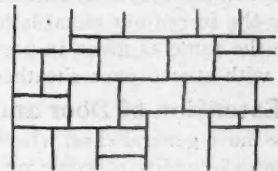
RUBBLE, UNDRESSED- LAID AT RANDOM.



RANDOM RUBBLE-DRESSED JOINTS-NO SPALLS- QUOINS.

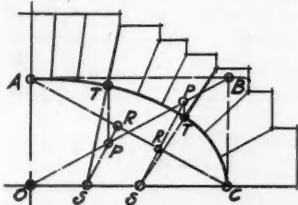


DRESSED RUBBLE- BRICK QUOINS.

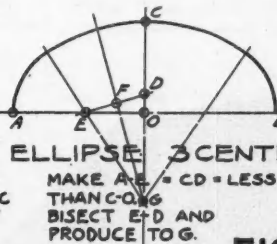


BROKEN ASHLAR- 3 SIZES.

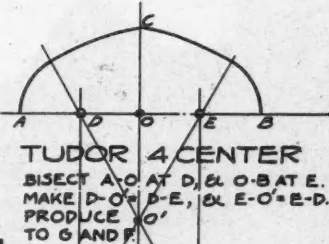
FIG. 3. WALL FACES.



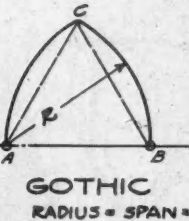
REAL ELLIPSE
DROP VERTICAL LINE T TO P. DRAW PERPENDICULAR TO A-C THROUGH P TO S. THEN S-T PRODUCED IS A RADIAL.



ELLIPSE 3 CENTER
MAKE A-E = CD = LESS THAN C-O. BISECT E-D AND PRODUCE TO G.



TUDOR 4 CENTER
BISECT A-O AT D, & O-B AT E. MAKE D-O = B-E, & E-O = E-D. PRODUCE O-G AND F.



GOthic
RADIUS = SPAN ÷ RISE.

FIG. 4. ARCH CENTERS.



FIG. 5.
GRAY STONE
LIGHT MORTAR
RAKED JOINTS
HEAVY SLATE



FIG. 6. A FLAGG TYPE HOME ON THE MILWAUKEE NORTH SHORE.

V. P. Shuman 8-2-26.

Better Plastering

Further Data on Stucco Overcoating

RECONSTRUCTION of the foundation walls and supports where necessary for the purpose of stucco overcoating and re-alignment of the outside studding having been provided for as described in the preceding article in this series, the next question is whether the old lap or cove siding, clapboards, or shingles need be removed before placing the new base for the stucco. Each building is a problem in itself and must be decided on its own merits. Where the old wall covering is in generally good shape nothing need be done other than going over it and nailing it down where it has come loose, replacing with new materials only in such places where decay has set in to a large extent.

When, on the other hand, painting has been neglected for a long time and the siding or shingles have rotted, fallen off, or are in a generally bad state of repair, it is best to remove all of the exterior covering, right down to the sheathing. In this case, the sheathing should be covered with building paper and, after placing metal flashing over horizontal wood surfaces where water might collect and get behind the new stucco. The various details of applying the furred-out metal lath over the paper, stuccoing, etc., are the same as given in previous articles in this series dealing with stucco over sheathed construction.

Extension of Door and Window Trim

In the more general case, where the old siding or shingles are in good condition, construction is carried on a little

differently. First, the increased thickness of the wall necessitates extension of the trim around the old windows and doors so that they will project beyond the face of the new stucco. Occasionally, it is true, the stucco is carried over the old trim in a manner so as to produce a recess or revealed window or door, but this method is not common. The construction much more frequently used is to maintain the relative projection of the present moulding beyond the face of the siding by the addition of new material to the original moulding and trim. This is shown at 3 in Fig. 1, also in Fig. 2.

In extending the trim and moulding around door and window openings, it is highly essential that joints between the two, where water is apt to collect and possibly be carried up behind the new stucco to freeze and crack the surface, be properly covered by metal flashing. An instance in hand is the cap over a window and in Fig. 2 is shown one satisfactory method of attacking this problem.

The metal flashing must be rust-resisting, such as galvanized steel or zinc sheets, and be nailed to the old siding, bent down to cover the joint and then be carried down and around the new cap extension with a projecting lip to act as a drip. Places similar to this are also found where the chimney and roof intersect. Before placing metal lath as the stucco base around the old masonry chimney it is well to flash and counterflash the joint between it and the roof.



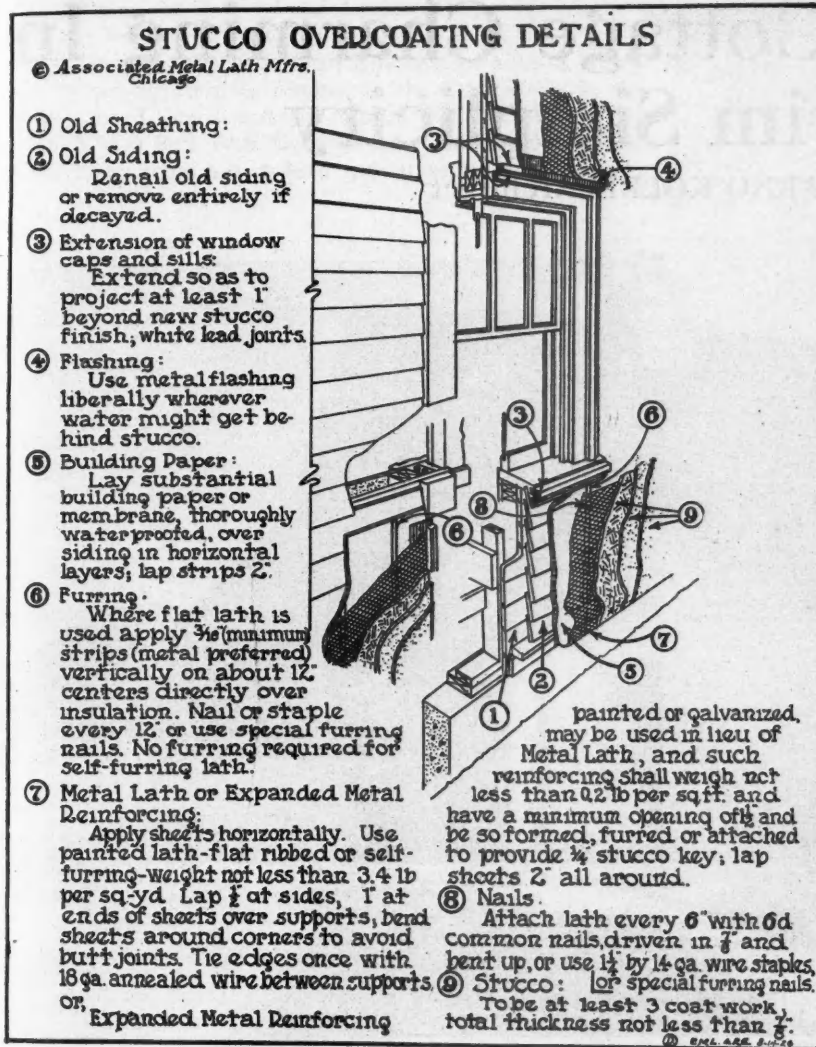
An Example of What May Be Accomplished by Overcoating an Old Building. It is reported that the new stucco overcoating increased the actual sales value of this house \$2,000.

Fig

A
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fixed supports and fasteners should also be put up at this time.

Having successfully completed the task of structural reconstruction and rehabilitation the next step is to proceed with the attachment of the metal lath. First, however, it will be necessary to apply at least one coat of waterproof building paper over the old siding to act as a wind stop and as a base against which to apply the stucco. It is important that the building paper be waterproof and properly lapped so as not to absorb the liquid element in the stucco which is so essential to its proper set (hardening). At the same time the paper acts as a backing, pressure against which causes the stucco to spread and cover the back side of the lath.

On lap siding, clapboards or shingles, the paper may be applied so as to conform approximately with their surface contour, and in this case it is then feasible to apply lath directly over the paper without using furring strips or self-furring lath. See Fig. 2 for details. However, if the paper is stretched tightly over the siding, or if the overcoating is placed over drop or cove siding furring of some type will be a necessity, as the back side of the metal lath must be embedded in stucco to conform with standard practice, and this is not possible when furring is omitted.

After paper and furring are in place, flat lath is next applied, and nailed or stapled over the furring and on to the old siding, or else self-furring lath is used directly over the paper and similarly attached to the siding. The building is then ready for stucco, but before proceeding it will be advisable to paint all wood surfaces.

Fig. 1. Details to Be Observed in Overcoating.

After the old siding has been securely nailed and repaired, and extensions built on to door and window trim, the necessary alterations of the porches, balconies, columns, and other details required to conform with the simplicity of outline of the stucco house should be made. At small expense it is quite frequently possible to transform an old decaying shack into something of architectural beauty really worth while. Here the retention of an experienced architect will more than justify his compensation.

In general all scroll mill work, and other wood members such as balcony and porch railings subject to more or less rapid decay should be moved and replaced with more permanent materials or they can be permitted to remain if protected by a stucco overcoating.

Other details which require attention and should be put into first class shape before going ahead with the application of the metal lath, are roof gutters and down spouts, which should be permanently hung and so placed that there will be no break in the stucco surface where they are fixed, and no discoloration should a leak develop in the gutters or spouts. Other

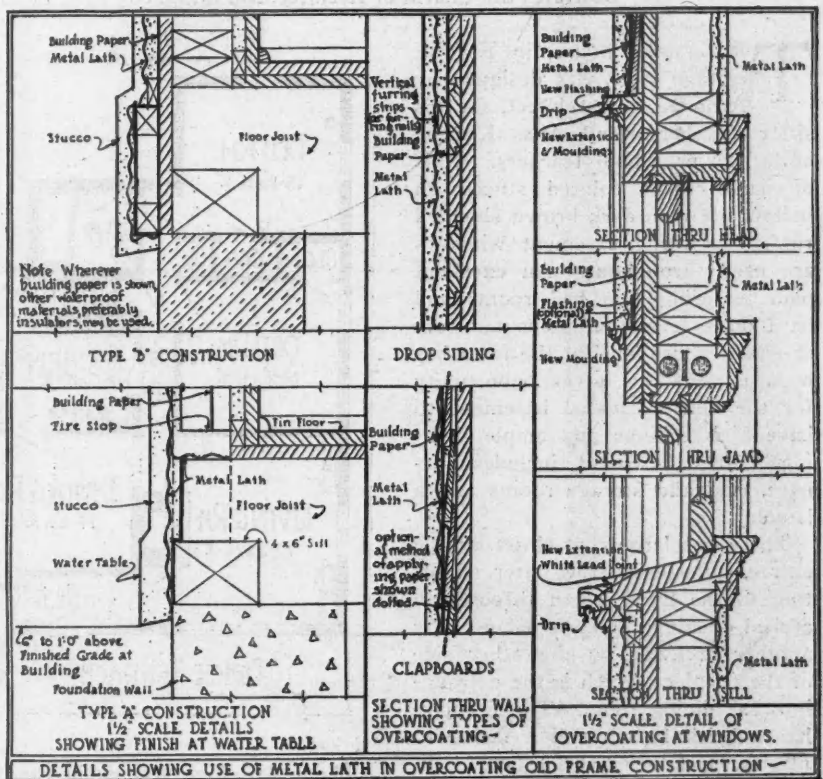
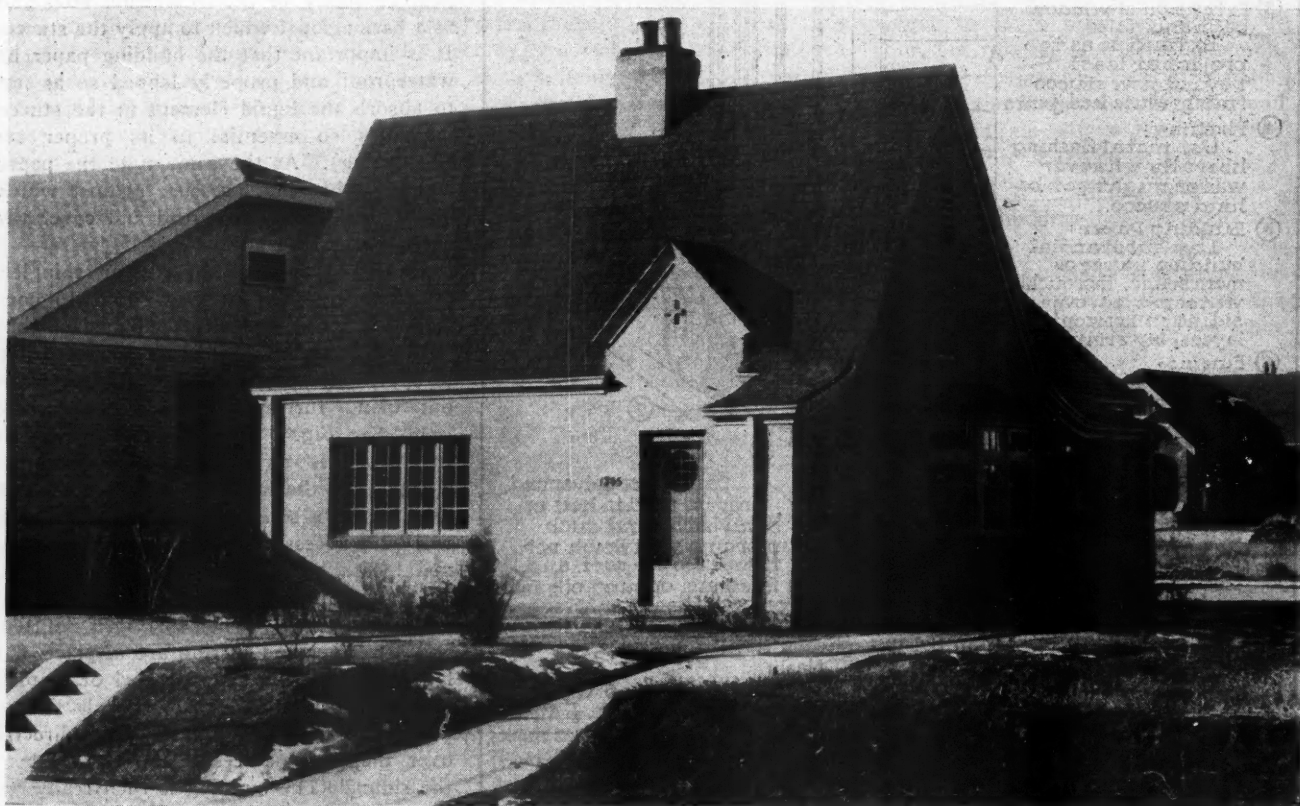


Fig. 2. Correct Method of Applying Stucco Base for Overcoating.

An English Cottage Charming In Its Trim Simplicity

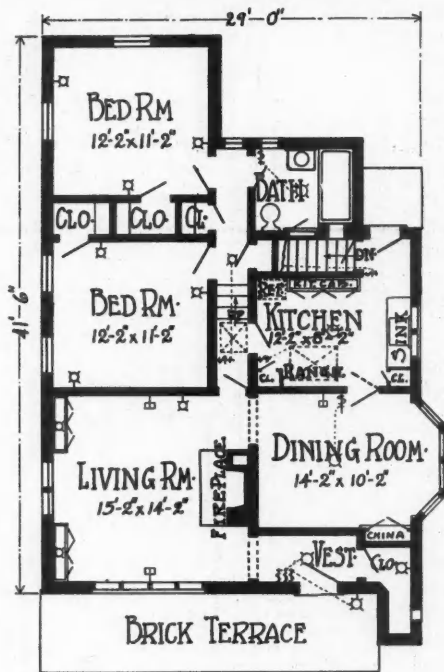
Mr. ARNO KOLBE, Architect



Designed by Arno Kolbe, Denver Architect, for His Sister, This Little Home, in the Style of the English Cottage, Demonstrates the Charm of Architectural Simplicity and the Effectiveness of Good Design.

THIS small house, in English cottage style, was designed by Arno Kolbe, architect, for his sister and her friend, Miss Kruzen, both Denver school teachers. It is of dark cream colored stucco on hollow tile with dark brown shingled roof. Outswung casement windows are used throughout. An excellent plan featuring two bed rooms and bath on a level four steps up from the main house level at the front has been used. This gives opportunity for the half excavated basement to have high ceilings and ample lighting. This basement includes furnace, coal and storage rooms and a laundry.

There is a large coat closet off the entrance vestibule, the latter admitting to the living room through an arched opening. This is balanced by another archway on the other side of the fireplace which is the entrance into the dining room. The fireplace has a brick hearth and a facing of plaster, rough-cast brick and individual ornamental tile. The tapering chimney breast extends to the ceil-



There Are Five Rooms in the House. The bedrooms and bath are on a level four steps above the other rooms.

ing. The dining room has a handsome bay window the four casements of which have smaller fixed lights over. At one side is a built-in china cabinet of Colonial design with drawers beneath.

The kitchen has the usual built-in features including a "California cooler" which is serviceable during more than half the year, ice refrigeration being needed during the summer months only.

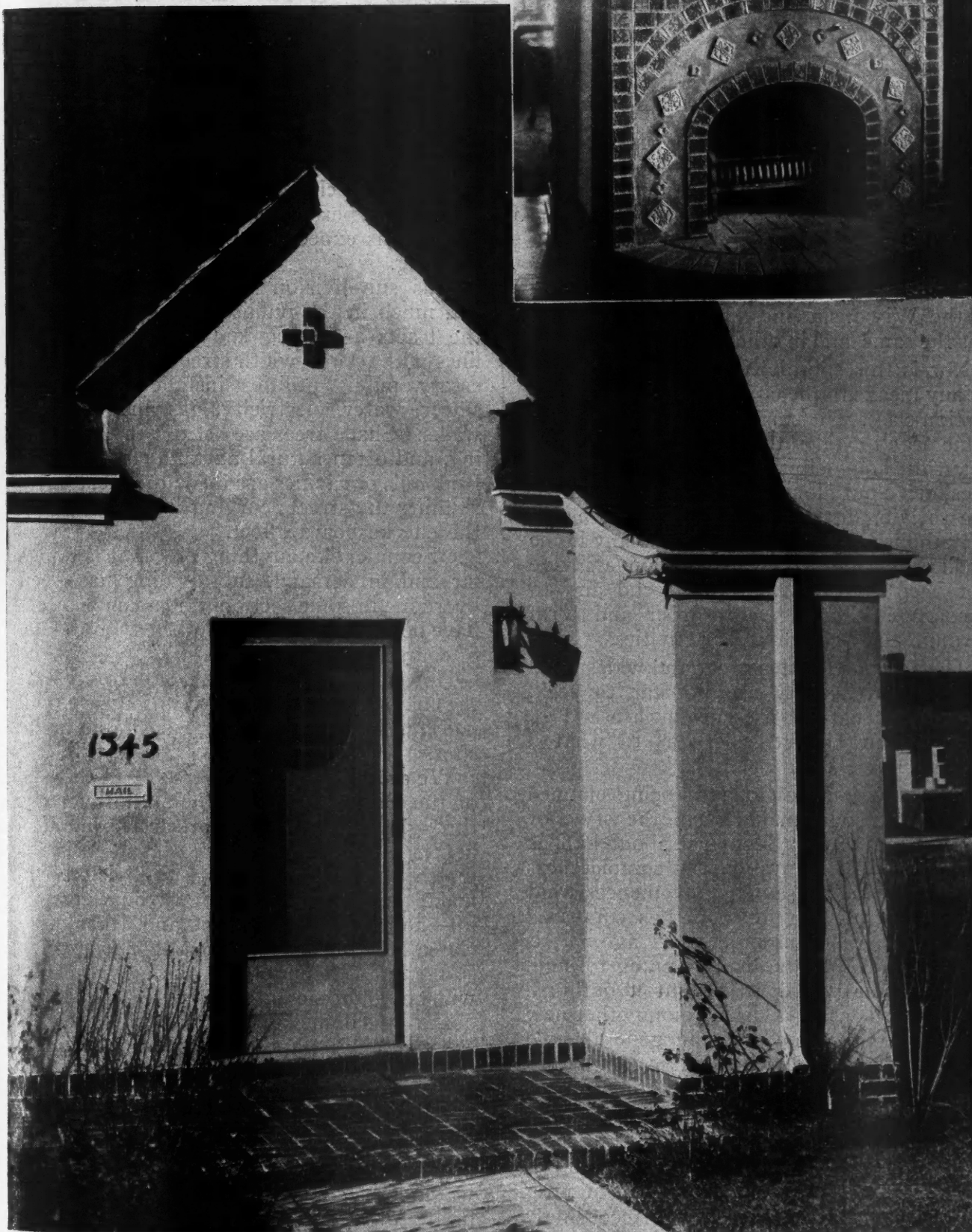


Welding Exposition

ONE of the largest welding expositions ever held will be shown in connection with the fall meeting of the American Welding Society at Buffalo, N. Y., November 17, 18 and 19. The exposition, which will include a large variety of welded products, will open on November 16, one day preceding the society meeting. At the last report 28 firms had already made arrangements to take part in the exposition.

Many educational displays will be staged, of interest to builders.

The Simple Entrance Is Most Effective for a Small Home and Ornament Here Is Limited to the Brick Cross in the Gable, the Lantern and the House Number Above the Built-In Mail Box, With Good Results. The fireplace found in the living room is a striking and attractive feature.



It Is in the Treatment of Details That the Small House Is Made or Ruined. Here the architect, Arno Kolbe, has displayed unusual skill.



Homes in COLORS

Away Out In The Country

By WILLIAM A. RADFORD

President and Editor-in-Chief of the American Builder

EVERYWHERE we go we see the signs of the real estate sub-dividers. Their white stake markers and their flag-marked sub-divisions follow along the principal highways out of all of the cities. The paved highways north and northwest out of Chicago are platted and staked out almost to the Wisconsin line. In other directions it is the same, and in other cities.

Nor is this sub-division activity confined by any means to the cities in the million population class. The smaller cities have felt the same urge to widen their boundaries. Really beautiful home sites fifteen or twenty minutes' drive out along the concrete outside of the thriving little cities of twenty-five and fifty thousand people have lured many home seekers and the real estate sub-dividers have not been slow to note this trend and to encourage it and give it order and form through their sub-division activities.

The reasons for this great and widespread sub-division activity are not far to seek. They are a part of present-day life and go back to our changed ideas as to what a modern home should be.

The new house of today is being planned and built much smaller than the style of forty years ago; in fact, just about half as large. It makes up in charm, completeness and modern labor-saving conveniences what it lacks in number of rooms, as compared with the big houses built years ago. It is only natural that the man planning to build a new home would rather put it out in a new suburb or sub-division among other new homes of the same size and general style rather than to sandwich in between or alongside of the large, old-fashioned homes in the older part of town.

With automobiles and motor bus transportation it is easy to get out into the country. An extra drive of from five to ten minutes makes very little difference. Accordingly the home sites in the outlying sub-divisions are favored.

The price of lots is, of course, lower in the new sub-divisions. So builders feel they have a good chance to enjoy a growth in value over a period of years; for every American city is expecting to grow and keep on growing.

This sub-division work is commendable and much in the public interest. Many of the tracts are being laid out on advanced lines with proper width streets, and the necessary public utilities installed, including sewer, water, electricity, gas and concrete walks. Shade trees are set out in the parking, and often natural advantages of woodland, hills or ravines are made the most of by running the streets curving instead of all in the checkerboard effect.

Of course, like anything else that is popular and in demand, sub-dividing has been overdone in some sections and some projects have been started but not finished. Builders, of course, will avoid these.

However, in the main, it is safe to say that the majority of these sub-divisions are well laid out and will make very desirable home sites.

We are not so much interested in the sale of the vacant lots; it is their improvement through the building of attractive, modern homes on these lots in these sub-divisions which concerns us. No sub-division can make any real progress until buildings go up—homes of a good type and other associated buildings such as neighborhood retail stores, etc. Generally speaking, real estate will not increase in value until building is done. It is home building properly designed, substantially built and occupied by desirable families that establishes real value in any sub-division.

In selecting the home designs for the sixteen pages of Homes in Colors which we present in the American Builder each month we choose homes that will be most appropriate for sub-division work either for building in quantities for resale or for use by individual home seekers.

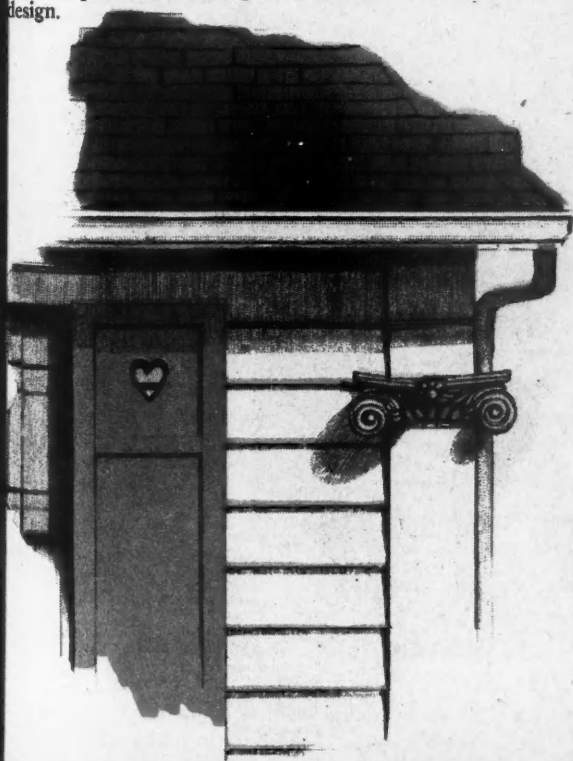
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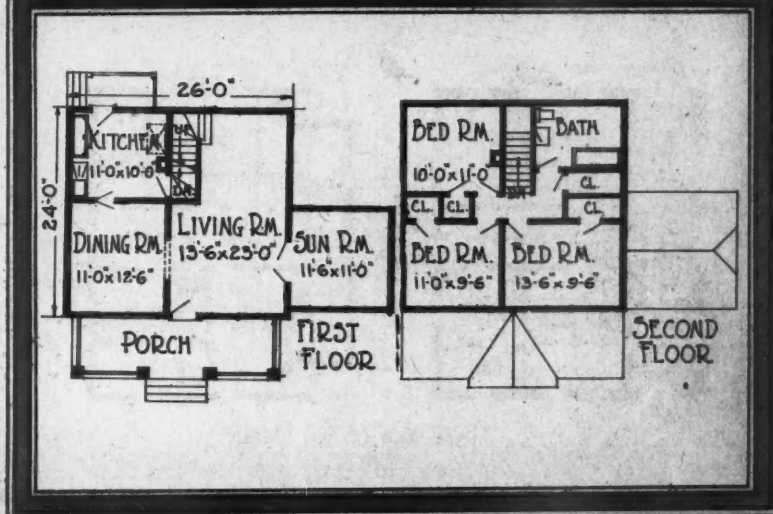
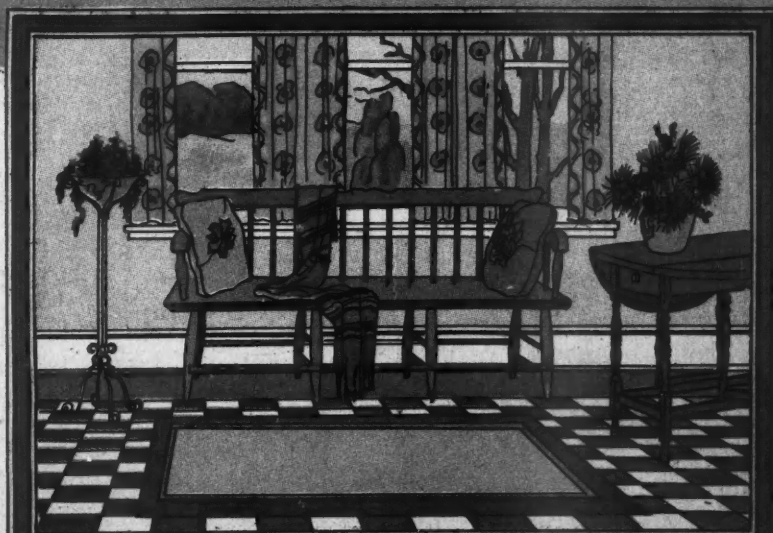


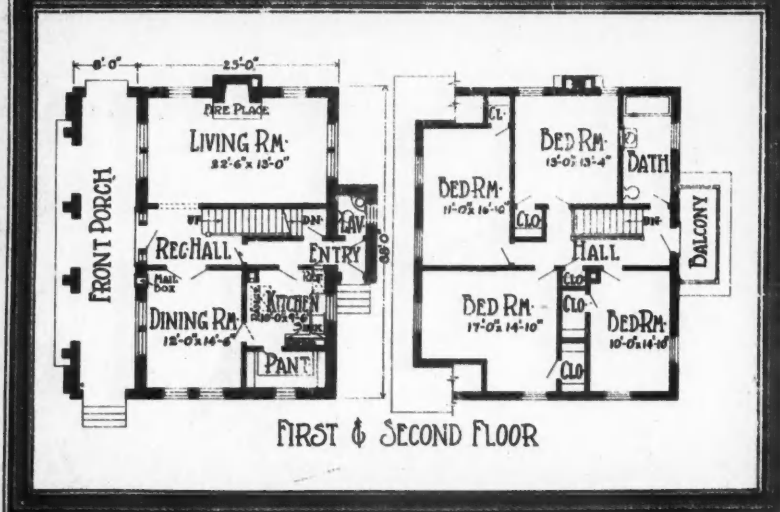
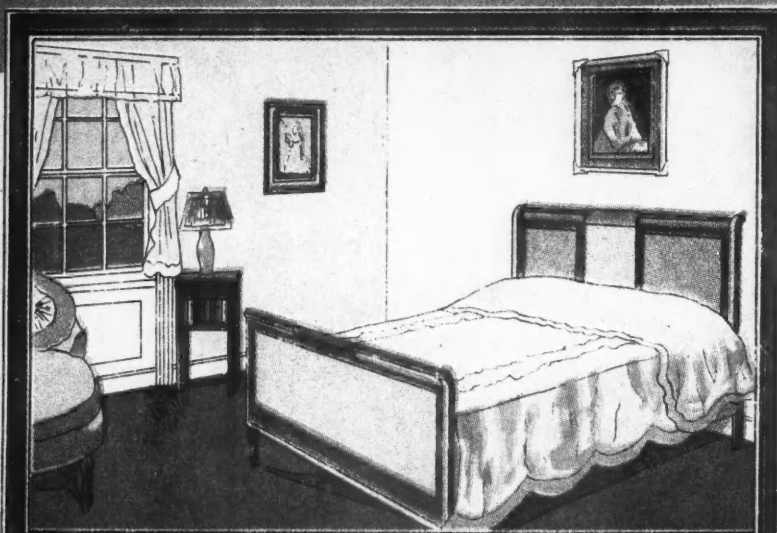
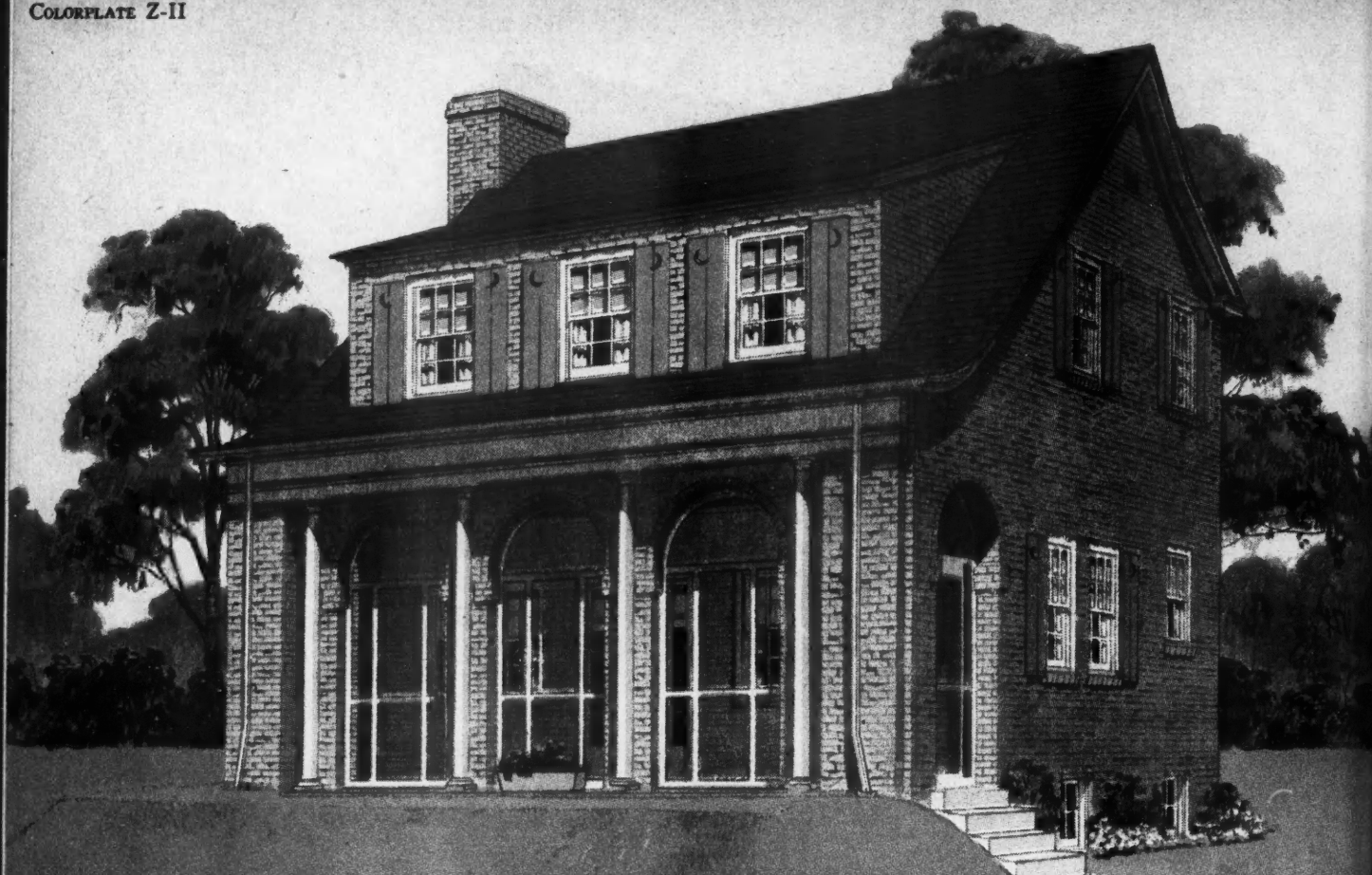
The ZANESVILLE

A PRETTY little Colonial home of six rooms and bath. Size 24x24 feet. The sun room addition opening from the living room adds eleven feet to the width. The Ionic capitals crowning the corner posts and the porch columns give a distinctive air to this design.



Detail of Corner Post Treatment with Ionic Capital





The ZENITH

A SEVEN-ROOM home in the skintled brick style. This rugged, uneven method of laying common brick makes a very artistic effect.



Detail of Skintled or Irregular Laid Brick Work Near Entrance.

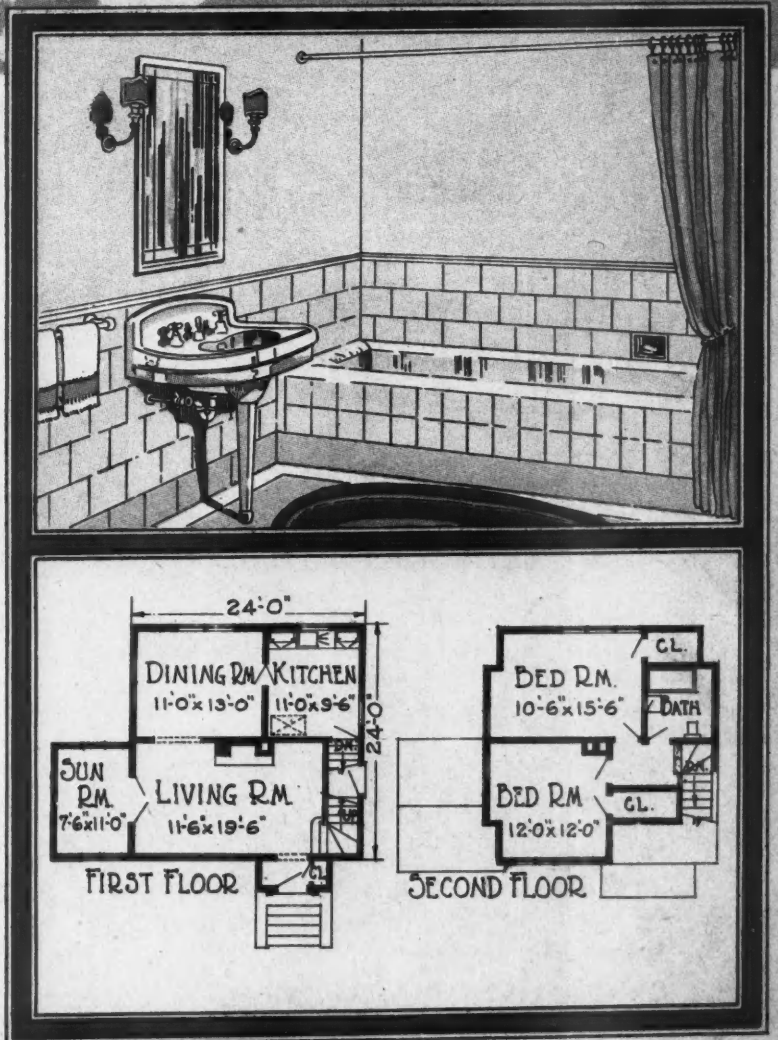
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Detail



The ZEANDALE

AN English cottage of five rooms and bath measuring only 24x24 feet except for the sun room addition which extends the width seven feet six inches further. Color sketch to right shows a beautiful tiled bathroom in this home.



Detail of Side Entrance with Gable Hood.

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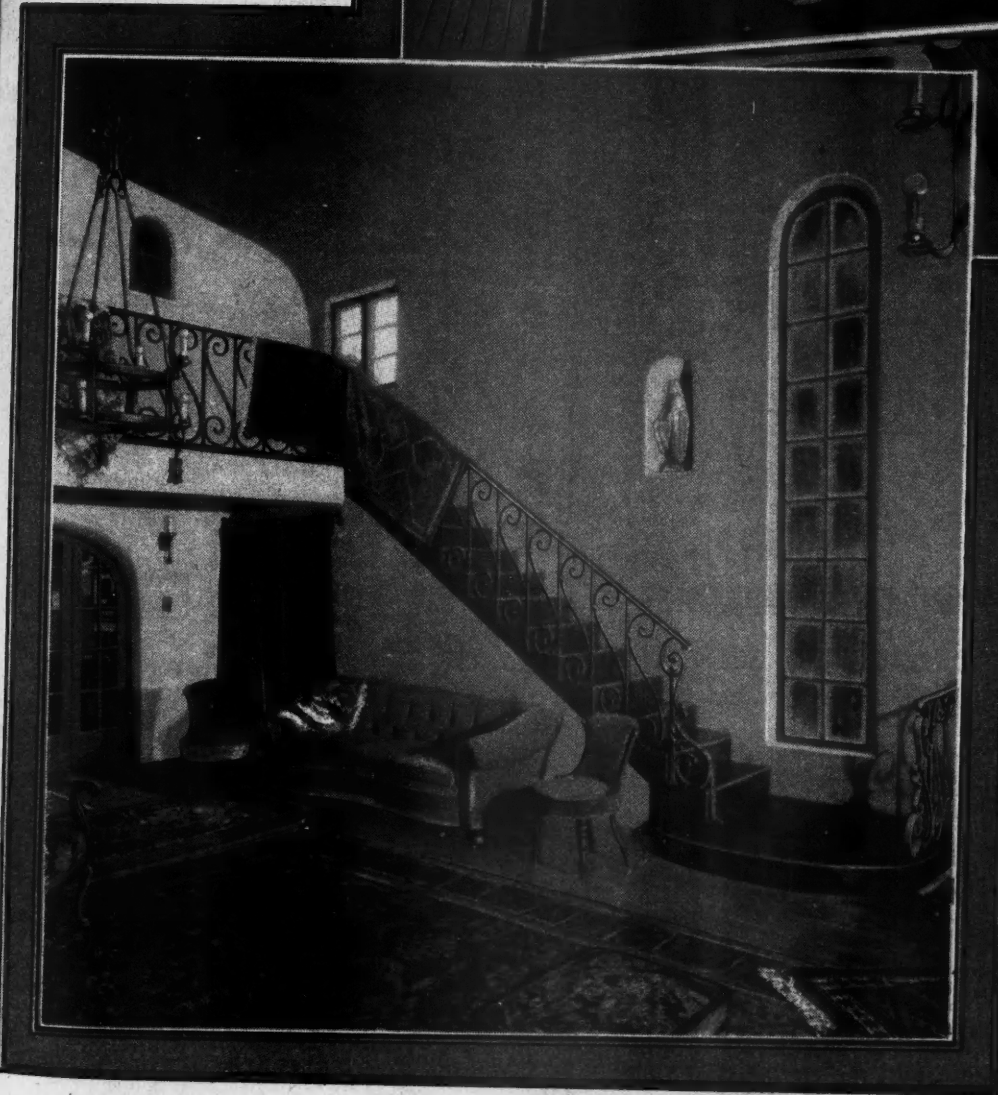
ck Work

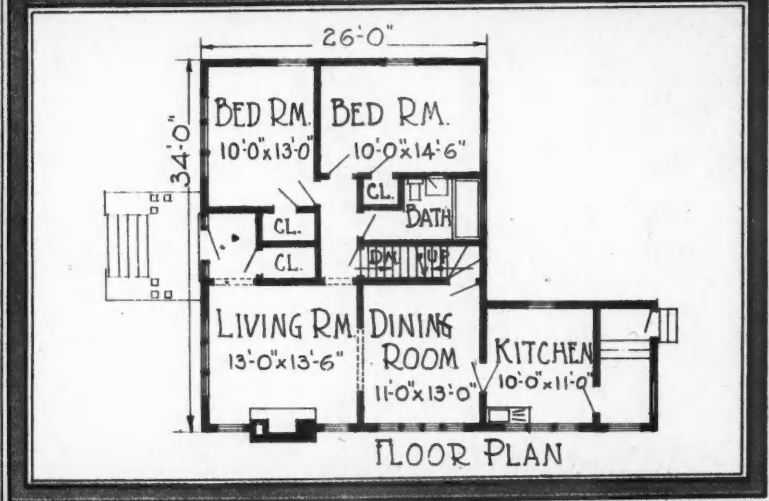
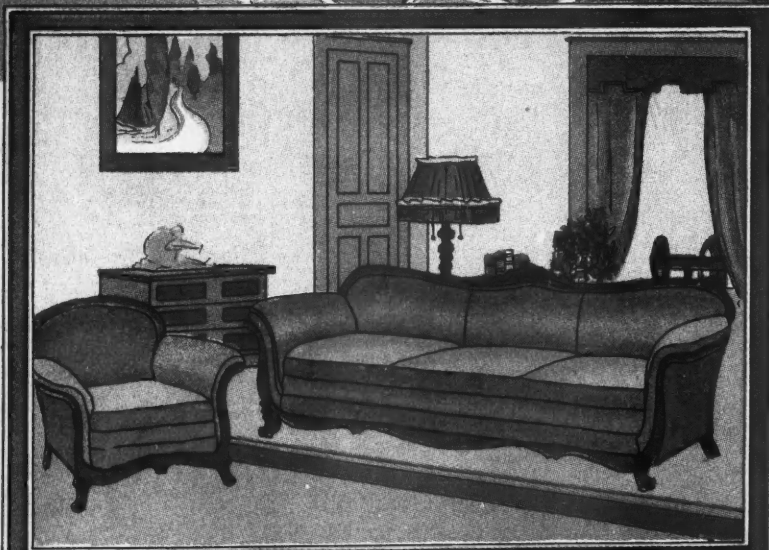
THE High Ceilinged Living Room and the Library in the Residence of John C. Leavett, Los Angeles, California. Jack Donovan, Architect.



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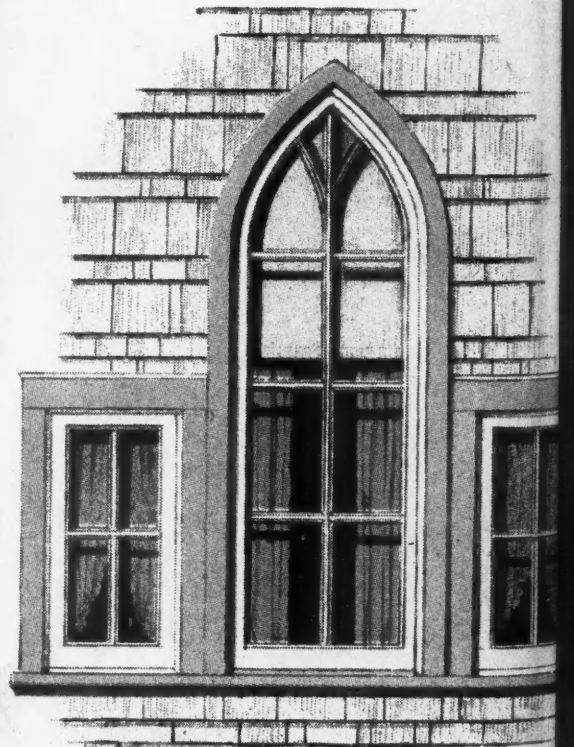
THE Refectory or
Dining Nook and an-
other view of the Studio
Living Room with Bal-
cony in the Leavett
Home.





The ZEPHER

A DELIGHTFUL western bungalow of five rooms and bath. Principle dimensions 34x26 feet.

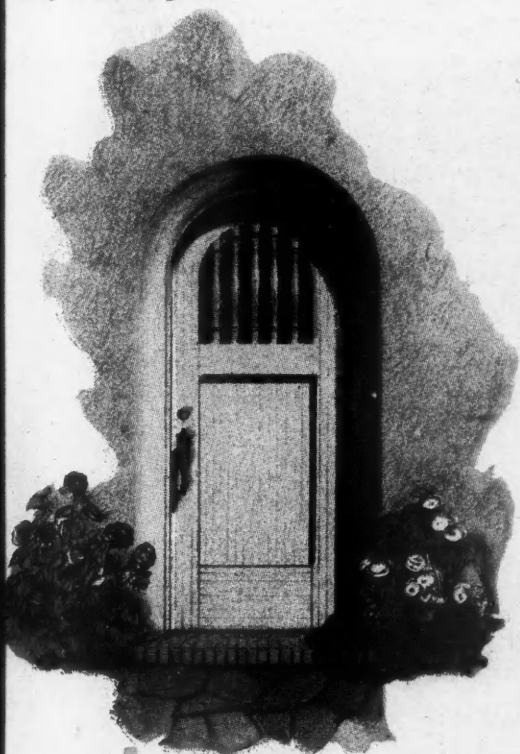
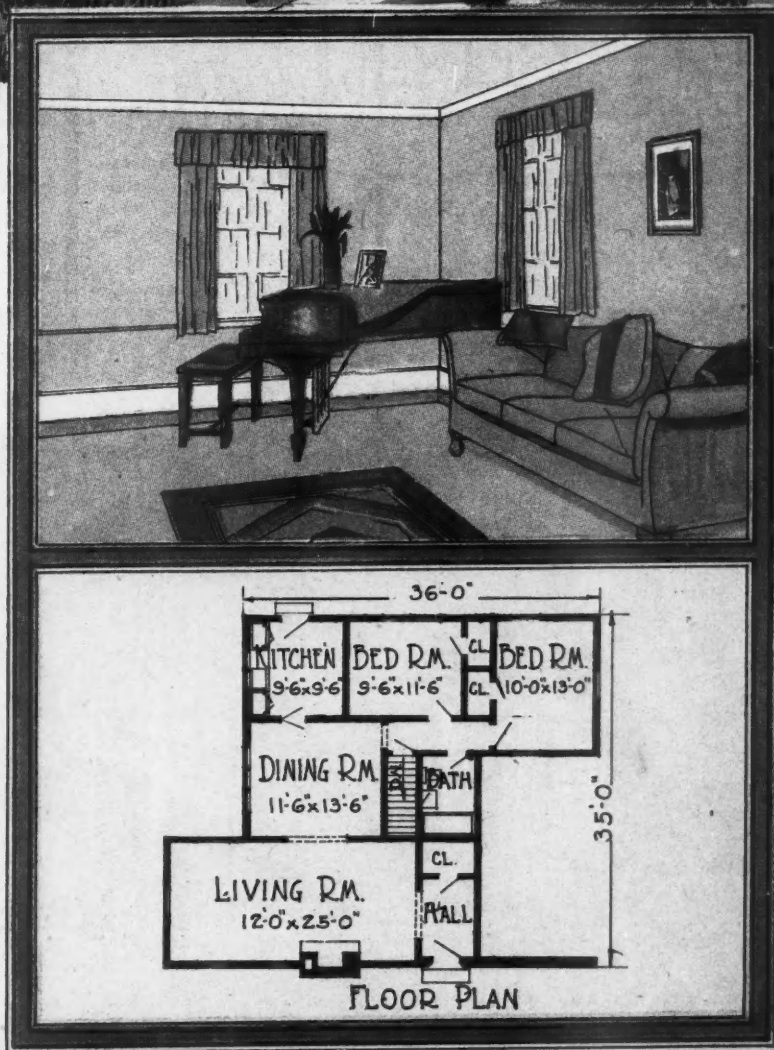


Detail of Ornamental Window Group for the Gable Ends.

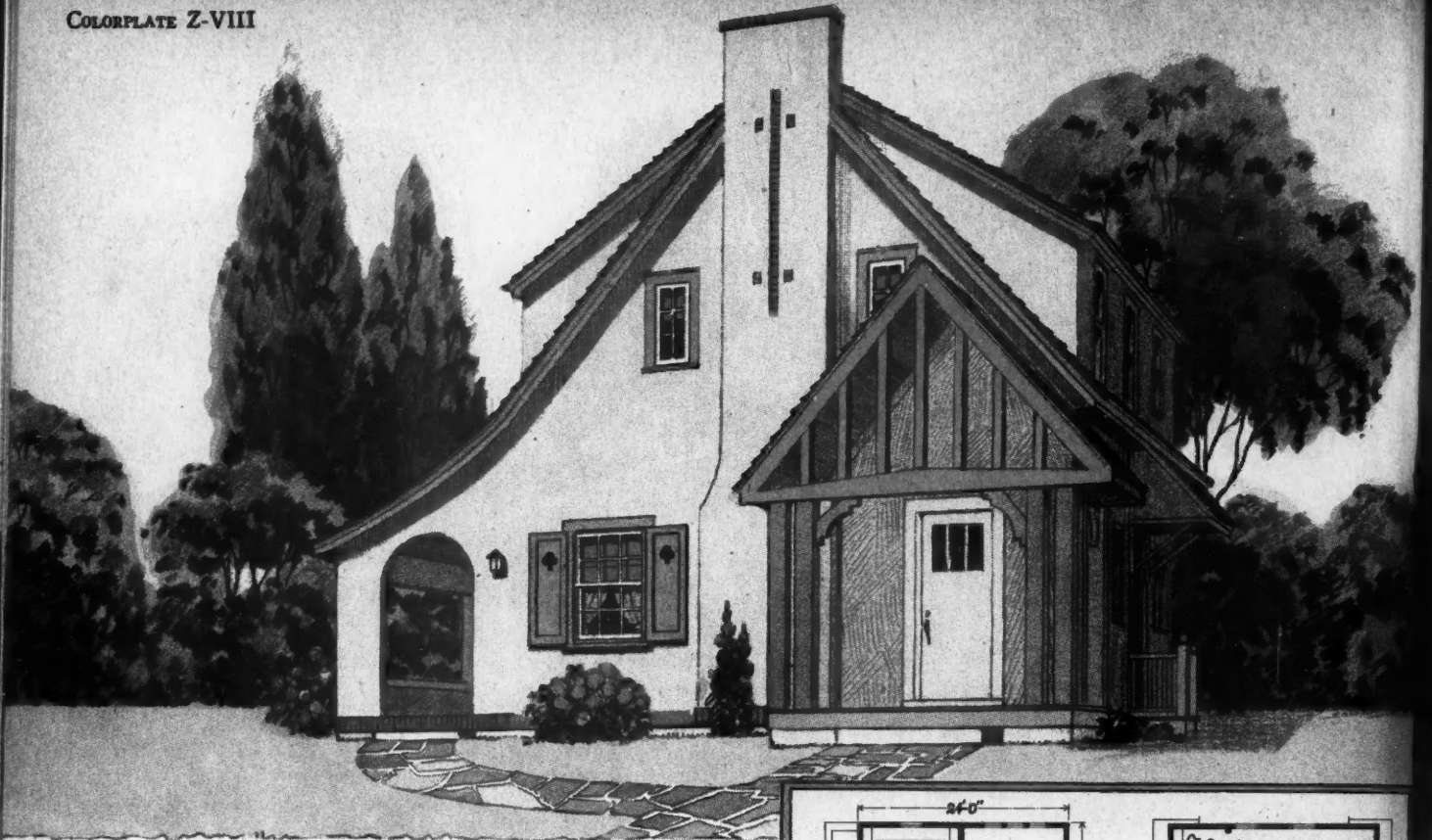


The ZACATA

A SPANISH bungalow of unique appeal, containing five rooms and bath and a partially enclosed garden.

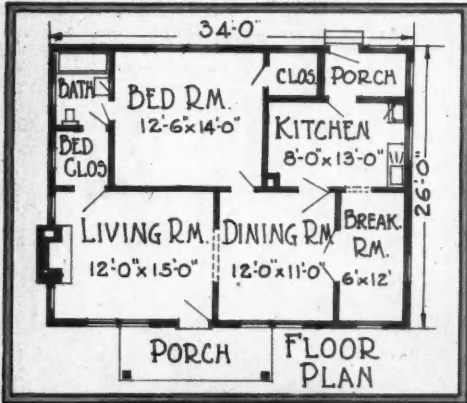


Detail of Entrance.



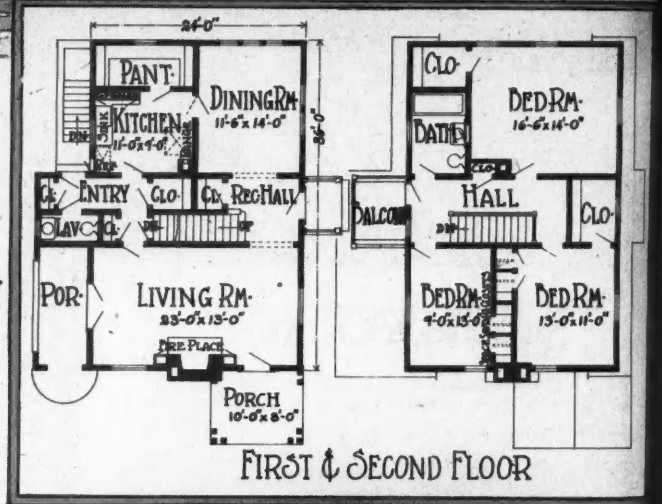
The ZENDA

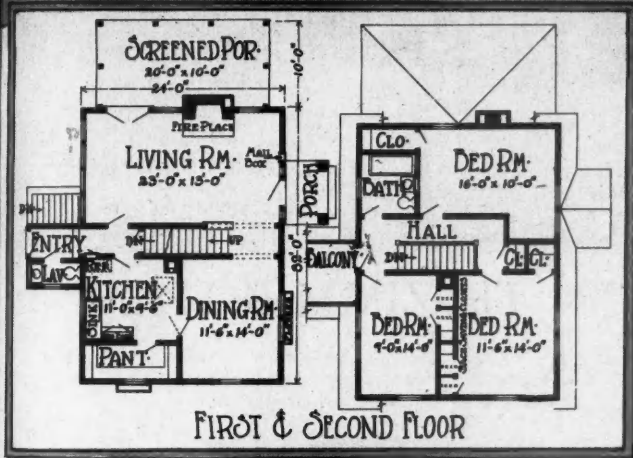
ABOVE and to the right is presented this delightful English design. Size 24x36 feet.



The ZARTMAN

BELOW and to the left is illustrated this economy cottage. Size 26x34 feet.



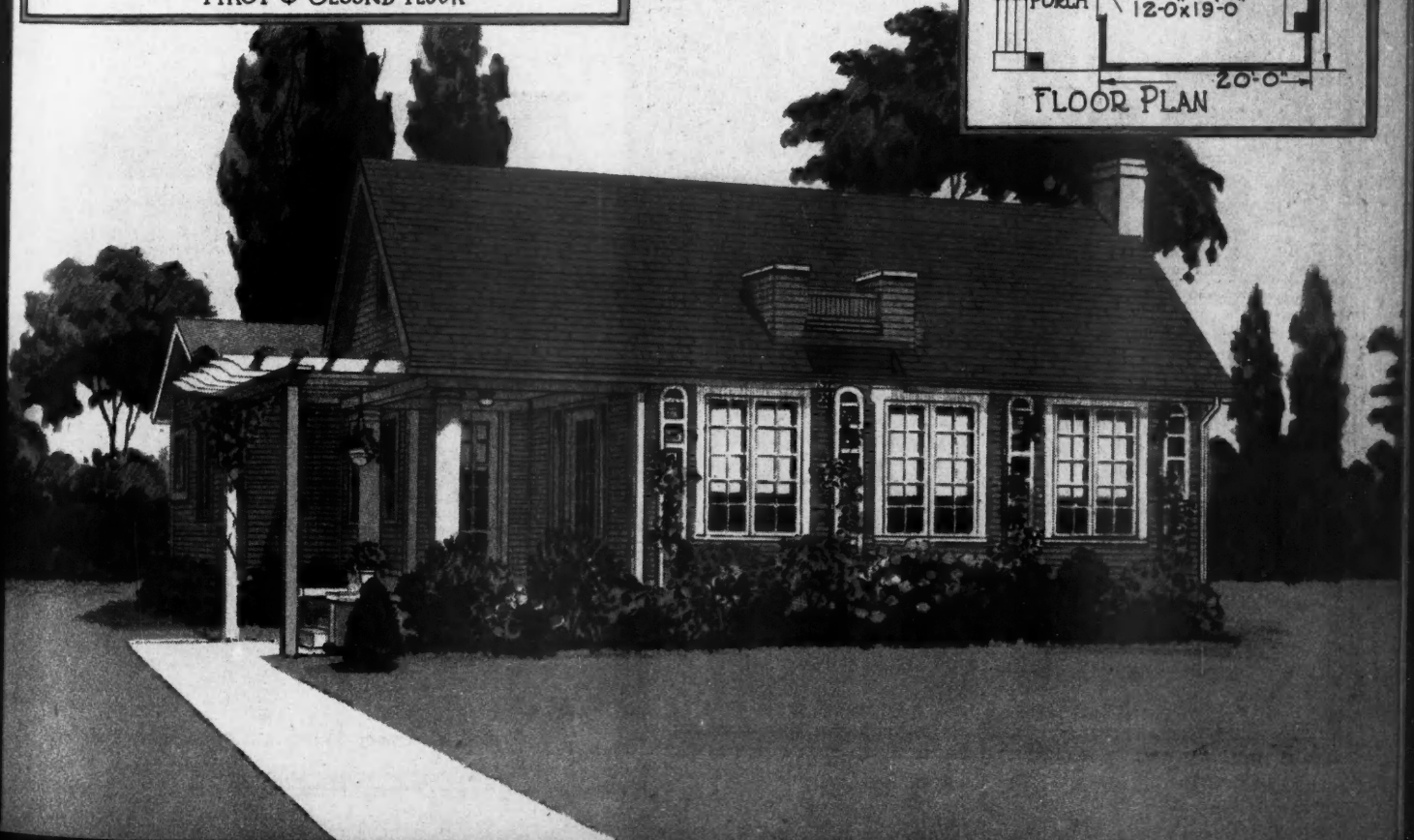
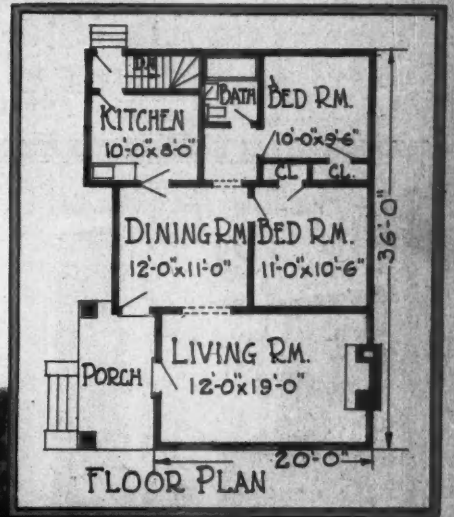


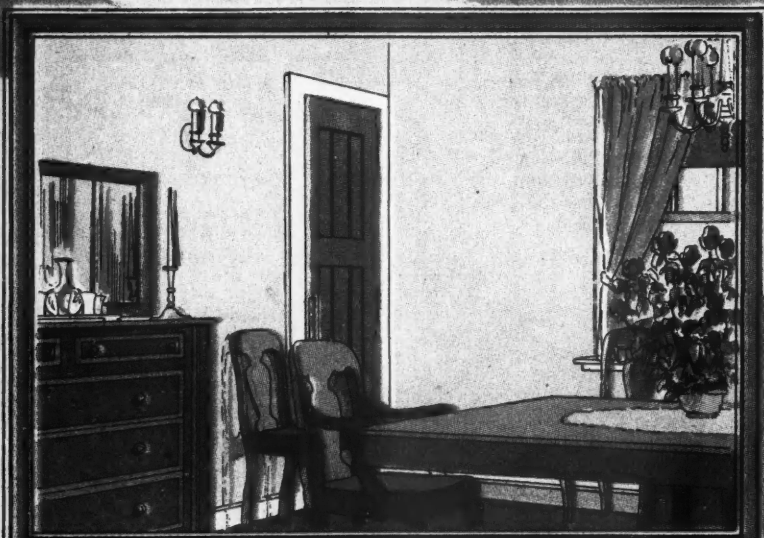
The ZURICH

ABOVE and to the left is illustrated this Dutch Colonial home. Size 32x24 feet.

The ZONA

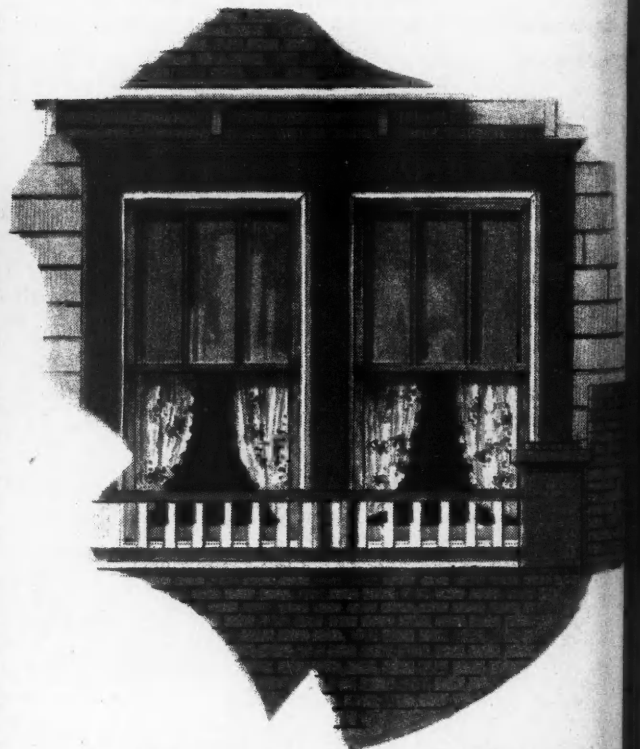
BELOW and to the right is illustrated a little five-room gem 36 feet deep by 20 feet across the front.



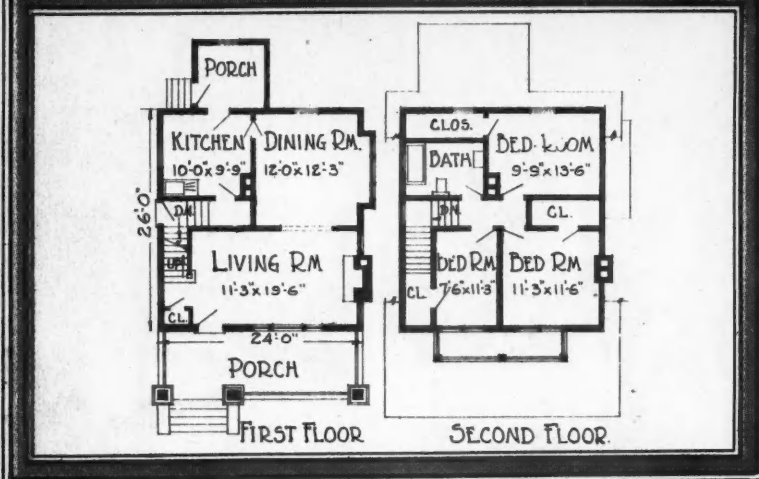


The ZIMMERMAN

A VERY popular bungalow design with three rooms on each floor. Color sketch to left shows a glimpse of the cheerful dining room.



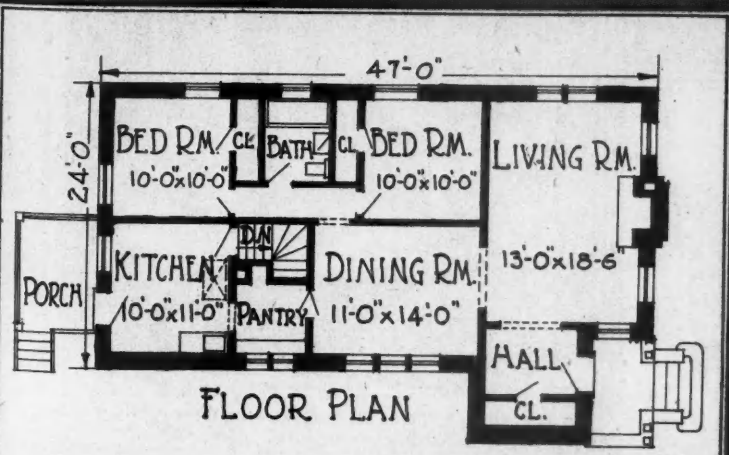
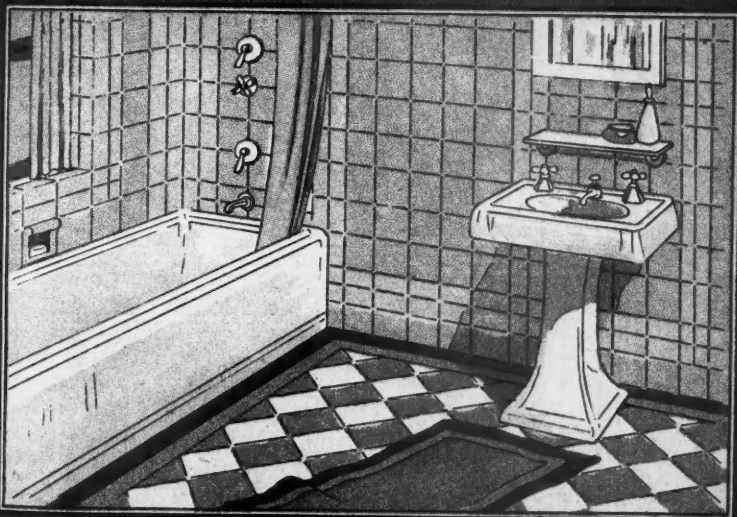
Detail of Upper Window Group with Balcony.



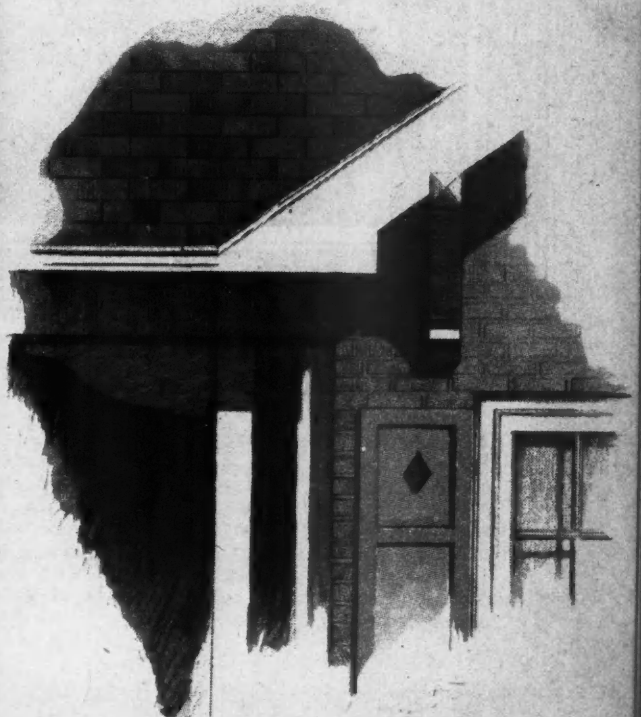


The ZELDA

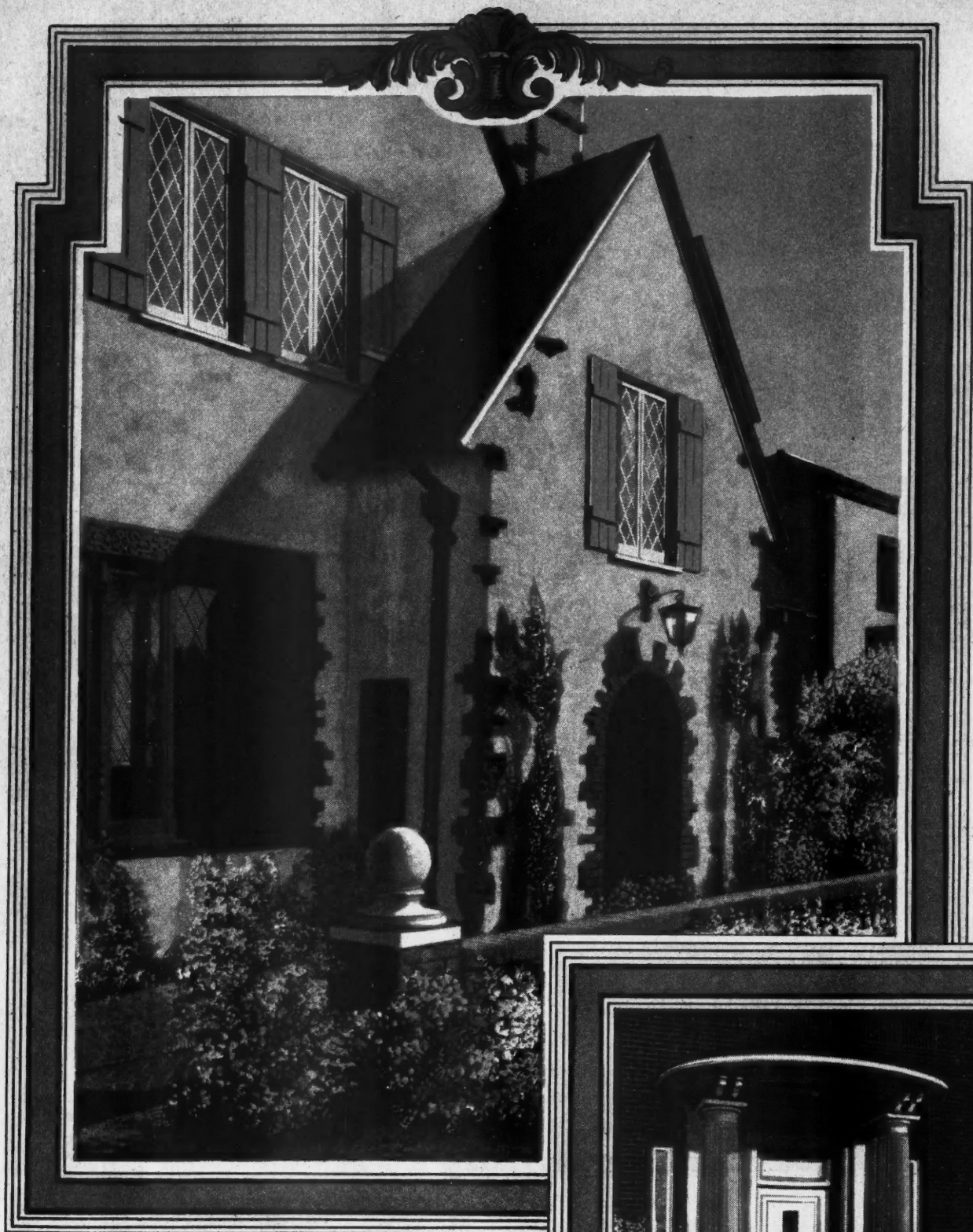
A WELL designed brick bungalow of five rooms and bath, 24x47 feet. Color sketch to left illustrates the modern tiled bathroom with combined tub and shower equipment.



FLOOR PLAN

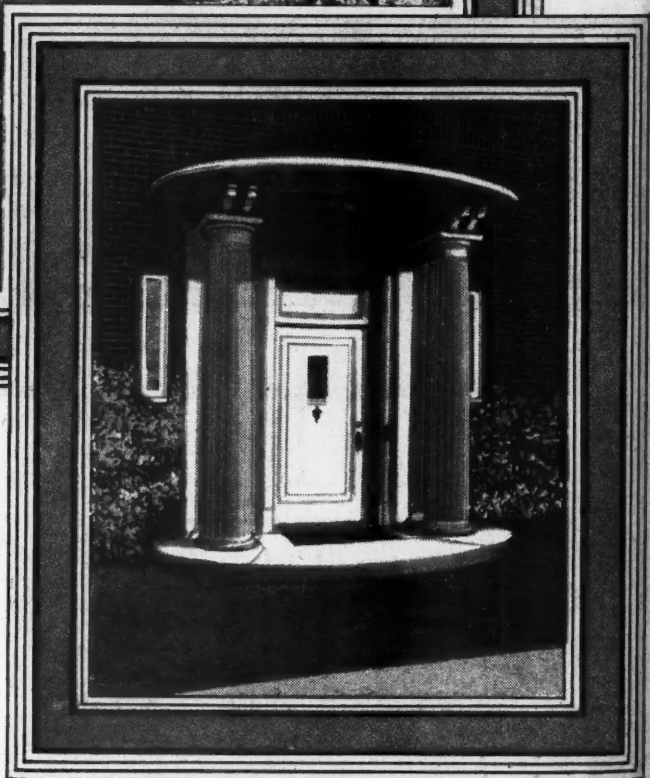


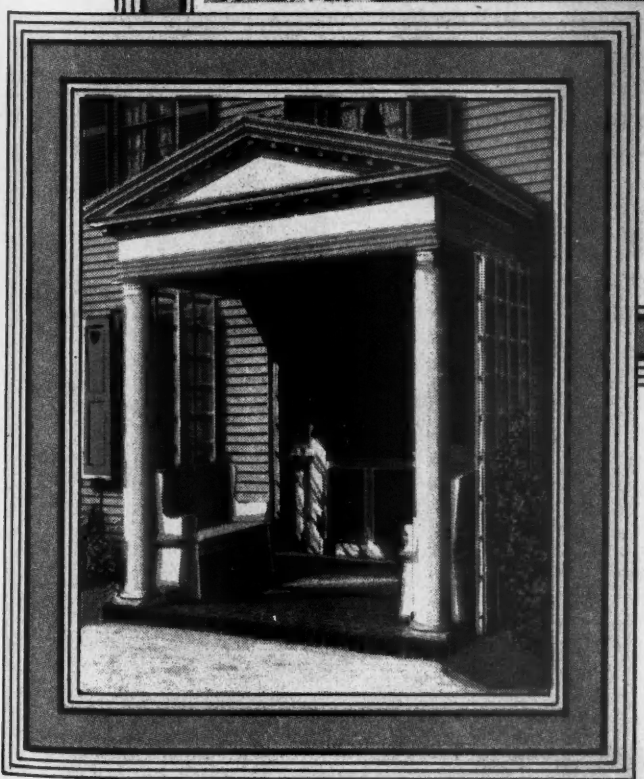
Detail of Cornice Treatment Showing Brackets.



ENTRANCE TYPES

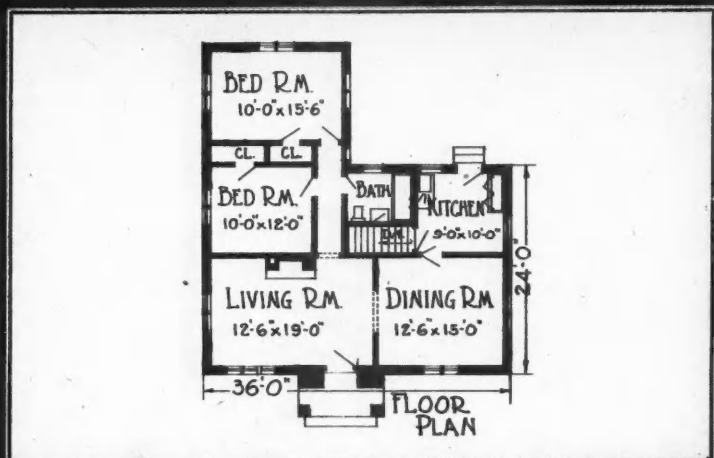
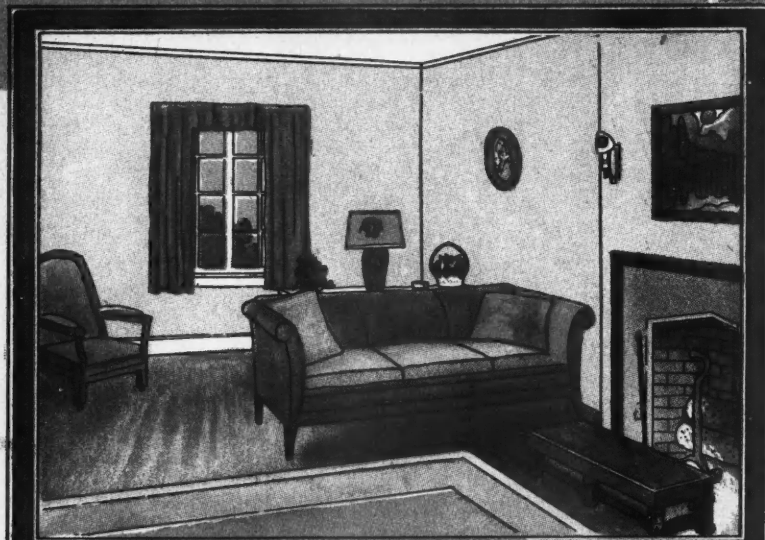
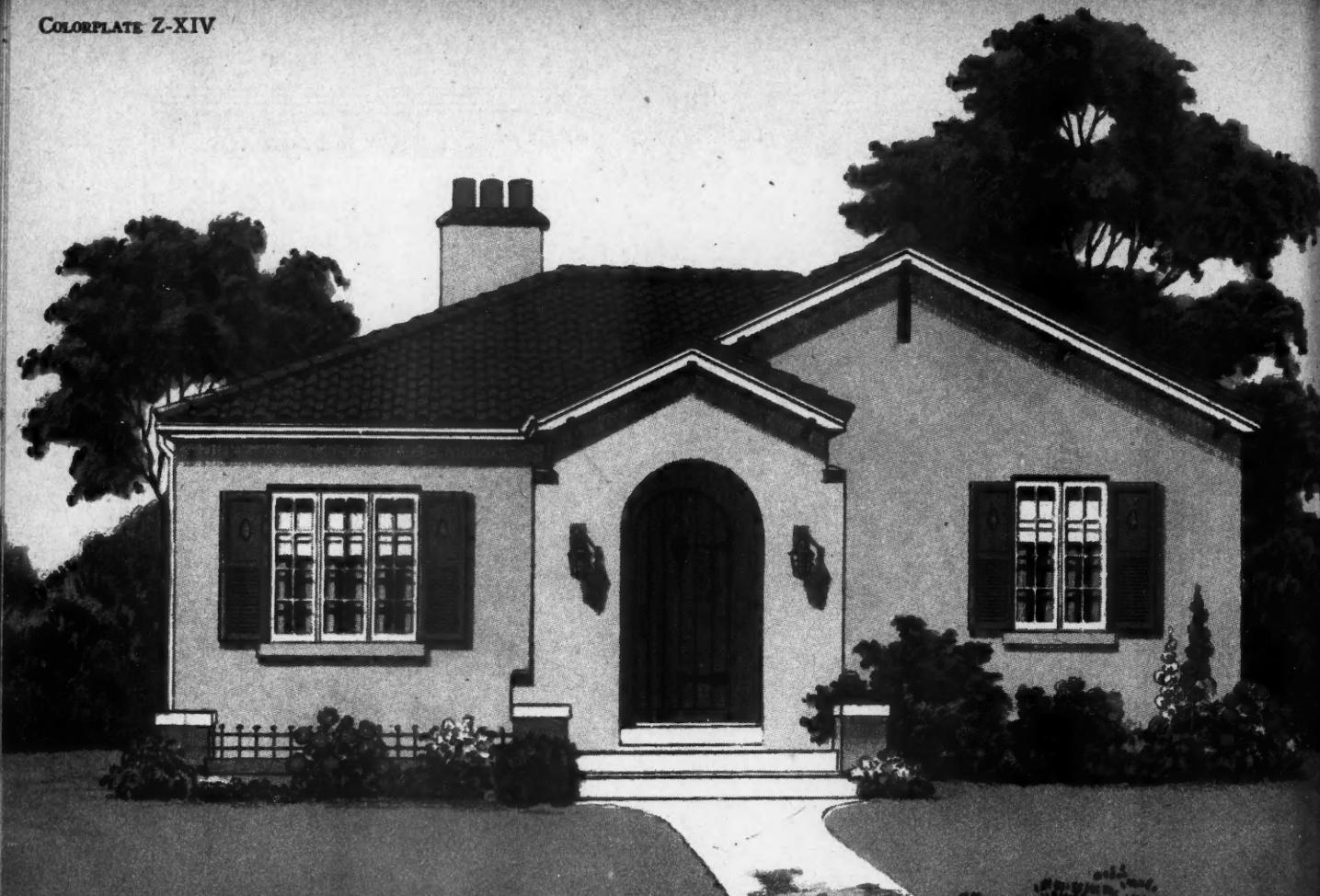
EACH architectural style has its own unique charm and appeal. Above is a well handled English style entrance in brick and stucco by Chisholm Fortine & Meickle, Architects, Los Angeles, California. To the right is a severely simple Colonial entrance with fluted columns used in connection with a Chicago home of Colonial design. Although associated with brick construction such entrance columns can be of wood, stone or pressed metal.





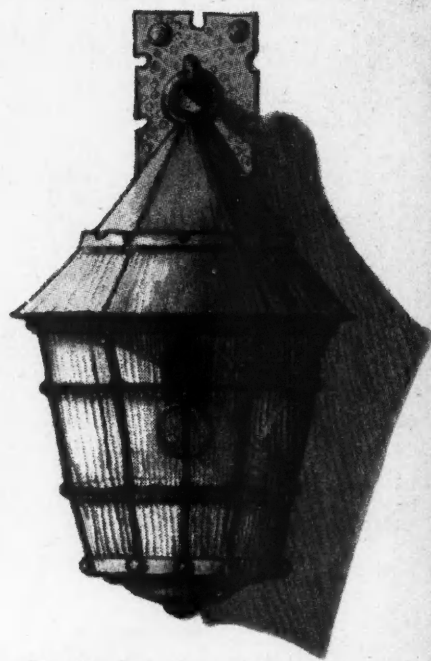
ENTRANCE TYPES

THE Mediterranean influence with its broad roofed terraces and circle head arch openings is dominant in Florida and elsewhere, especially for the larger homes. The photograph above is an excellent example. Contrast with this the simplicity of the true Colonial style so much favored in the best wood construction as exemplified in this dignified home at Philips Beach, Mass.



The ZAMORA

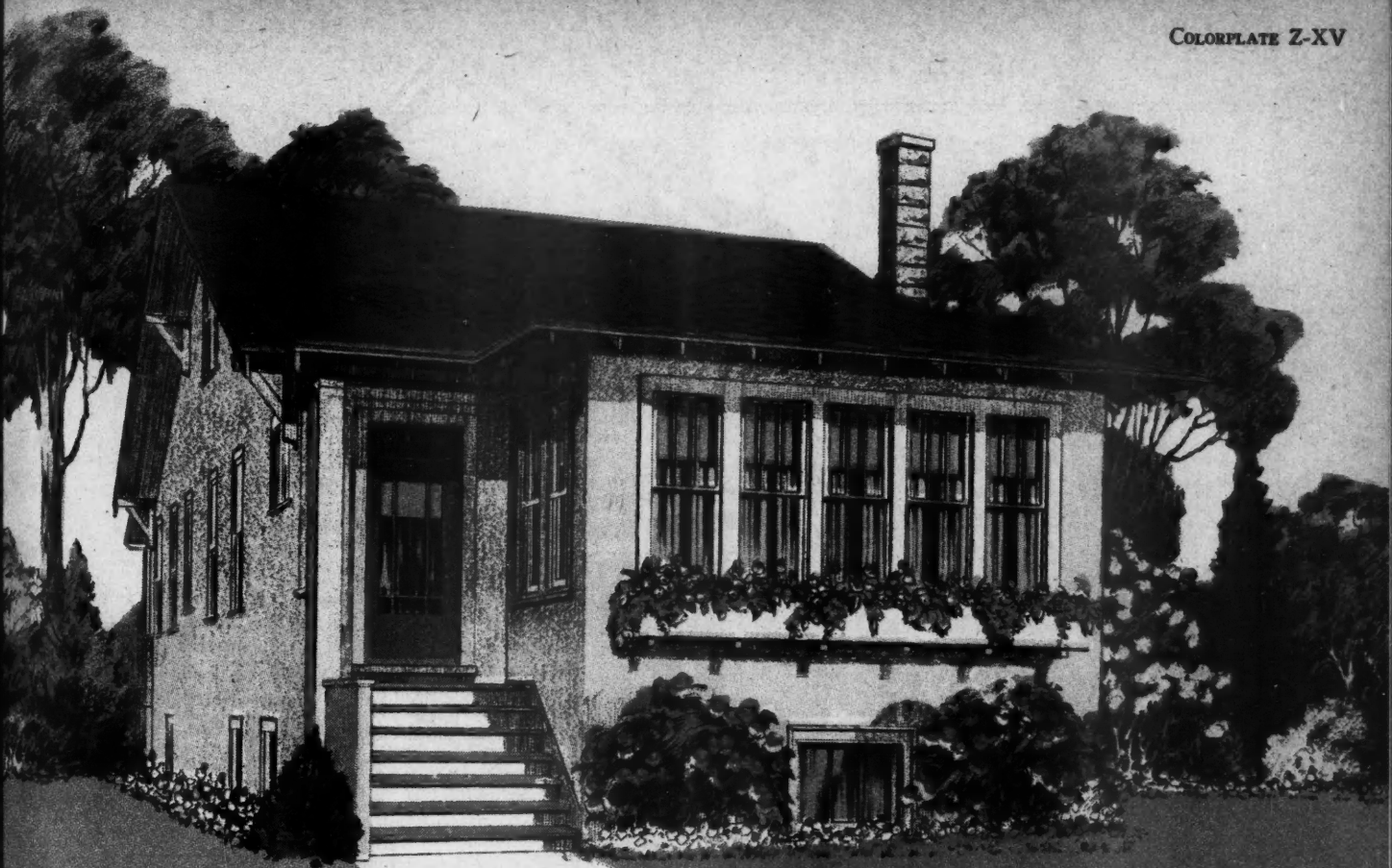
AN inexpensive five-room Spanish bungalow 36 feet wide with a depth through the main part of 24 feet. One bedroom projecting further back forms an L. The warm stucco tints blending with the bright roof tiles make this home a vivid flash against the shrubbery background. Color sketch to left glimpses the charming living room.



Detail of Antique Ships Lantern Flanking the Entrance.

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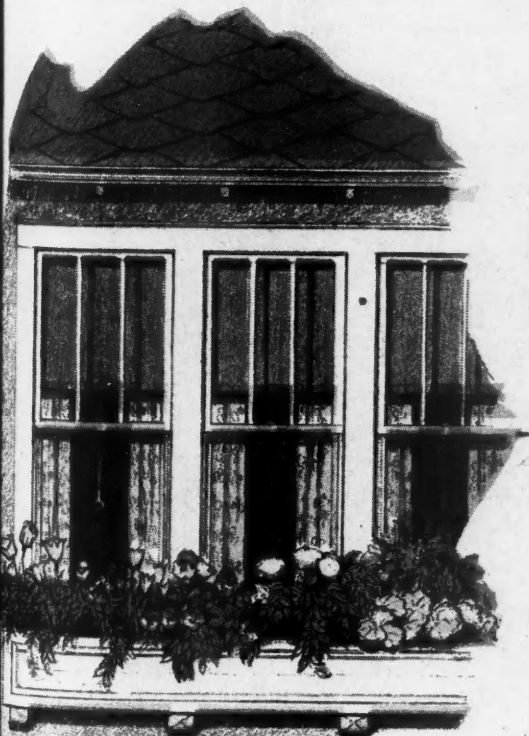
Detail



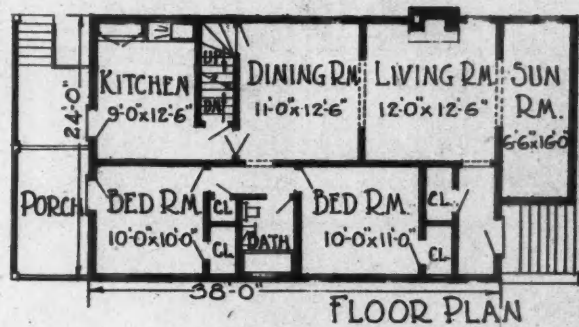
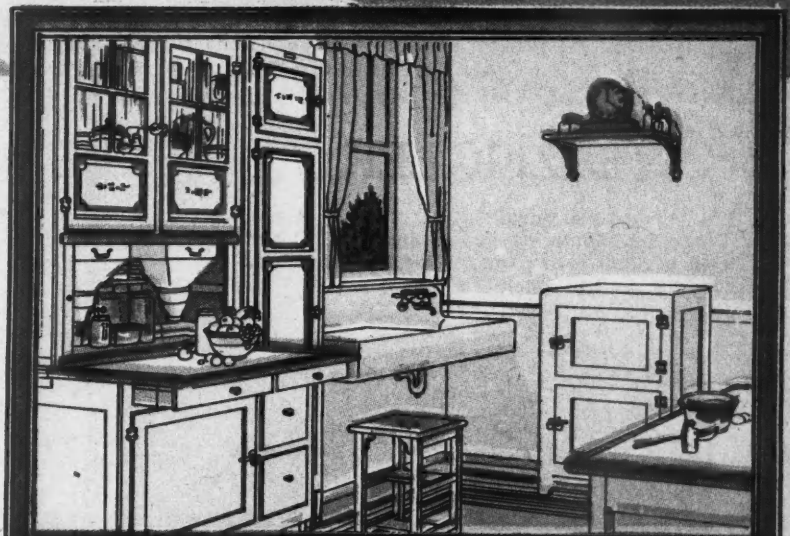
The ZEELAND

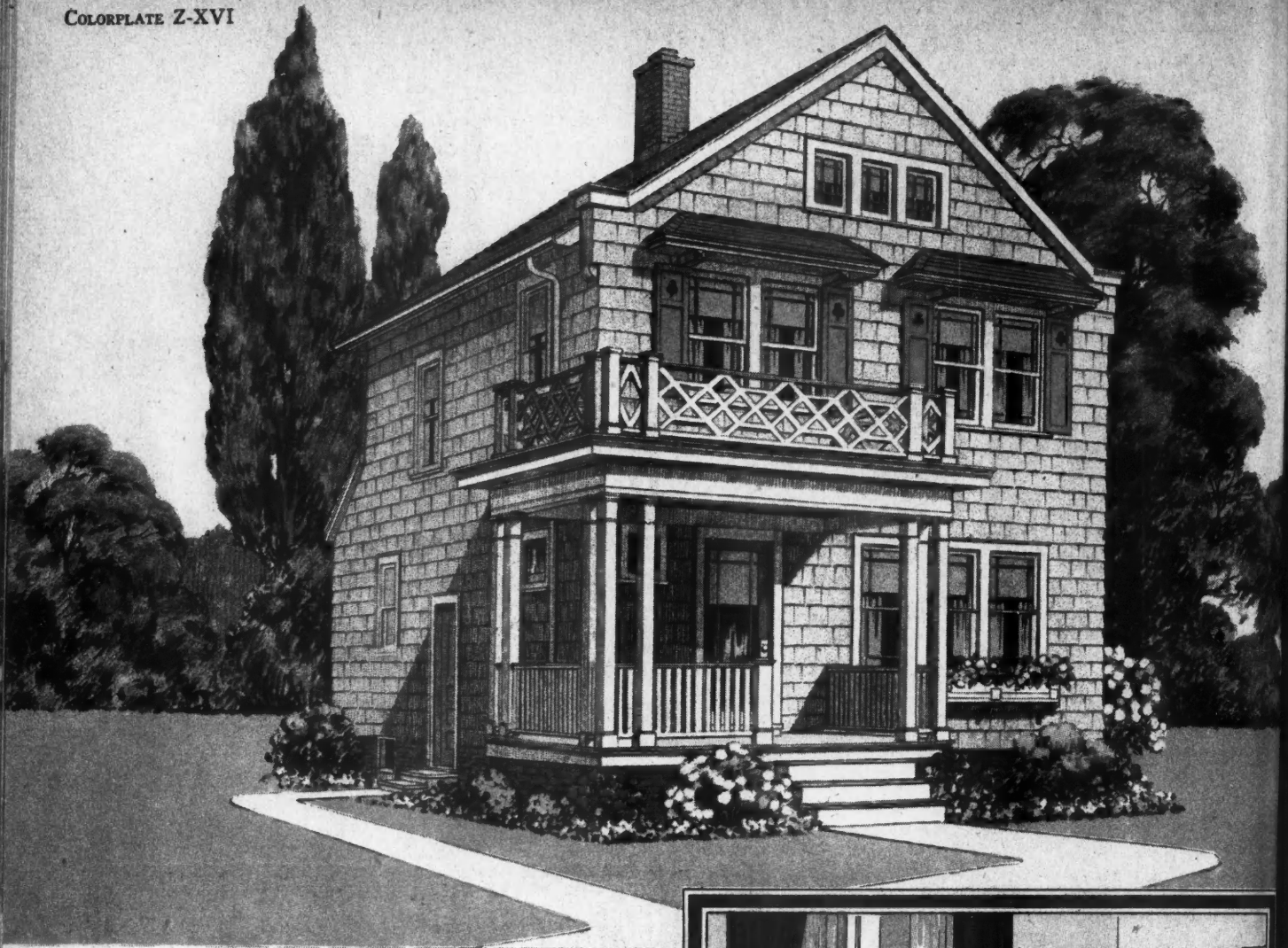
VERY popular narrow lot stucco bungalow with five rooms, bath and sun room.

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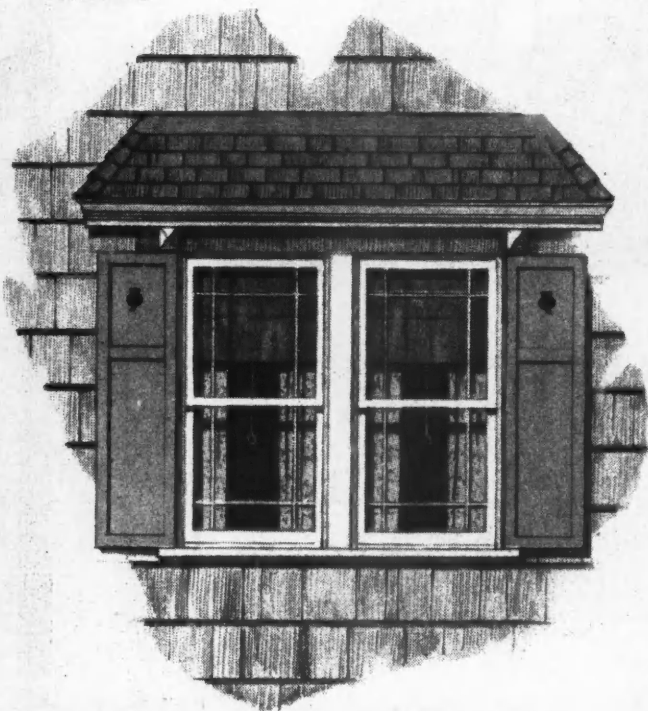
Detail of Front Window Group with Built-in Flower Box.



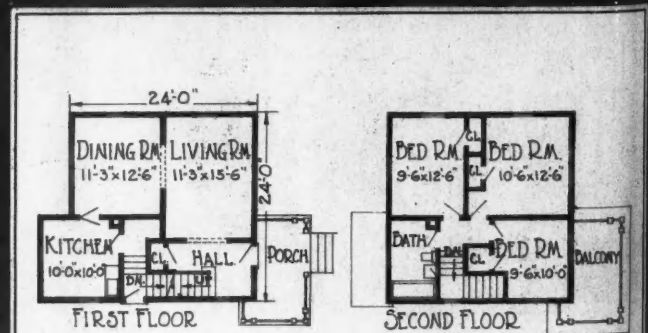
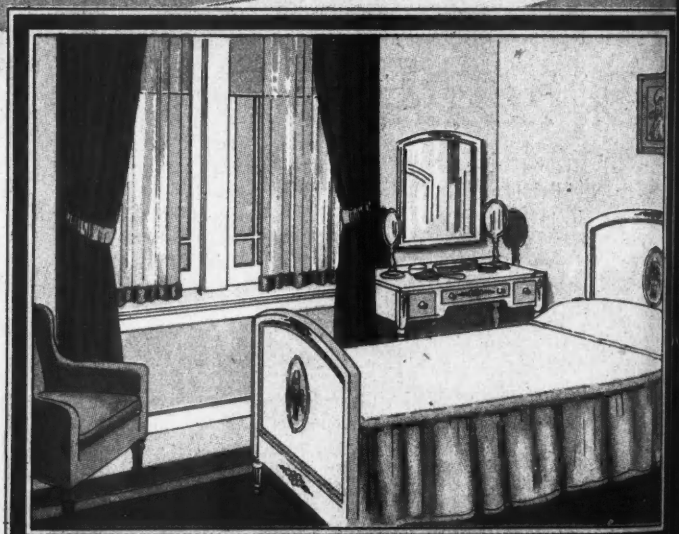


The ZEIGLER

AN inexpensive shingle home only 24x24 feet and containing six rooms and bath. Color sketch to right shows one of the well furnished bedrooms.



Detail of Upper Window Group with Ornamental Shutters and Projecting Hood.



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*The Demonstration House in Modified Dutch Colonial Style
is Suitable for the Suburban or Country Home*

OUR Front Cover Home this month is one which has won a high degree of favor as one of the New York Herald Tribune demonstration houses. It was built at Palisades Park, N. J., by the Steenland Construction Company, under the supervision of the Home Owners' Service Institute. Oscar G. Nordstrom, Ridgefield Park, N. J., a member of the Steenland organization, was the architect responsible for the design.

This is a substantial frame house of modified Dutch Colonial architecture and is well adapted for either the suburban or country home. The projecting sun parlor serves to afford partial seclusion from the passing traffic of the corner location while the grill work between the porch pillars is an excellent foil for the severity of the entrance treatment. The baby evergreens, planted at either side of the entrance walk, form an attractive approach while the entire scheme of planting is well chosen and effective.

The porch is deep and shady and with its brick floor ensures a cool and inviting retreat on even the hottest day. The airy sun parlor is a delightful spot at all times and seasons. In addition to this sun parlor, the first floor contains a large living room, extending the full depth

of the house, with a big open fireplace at one side. It is reached from the reception hall which also gives entrance to an ample dining room, to the rear of which is the kitchen.

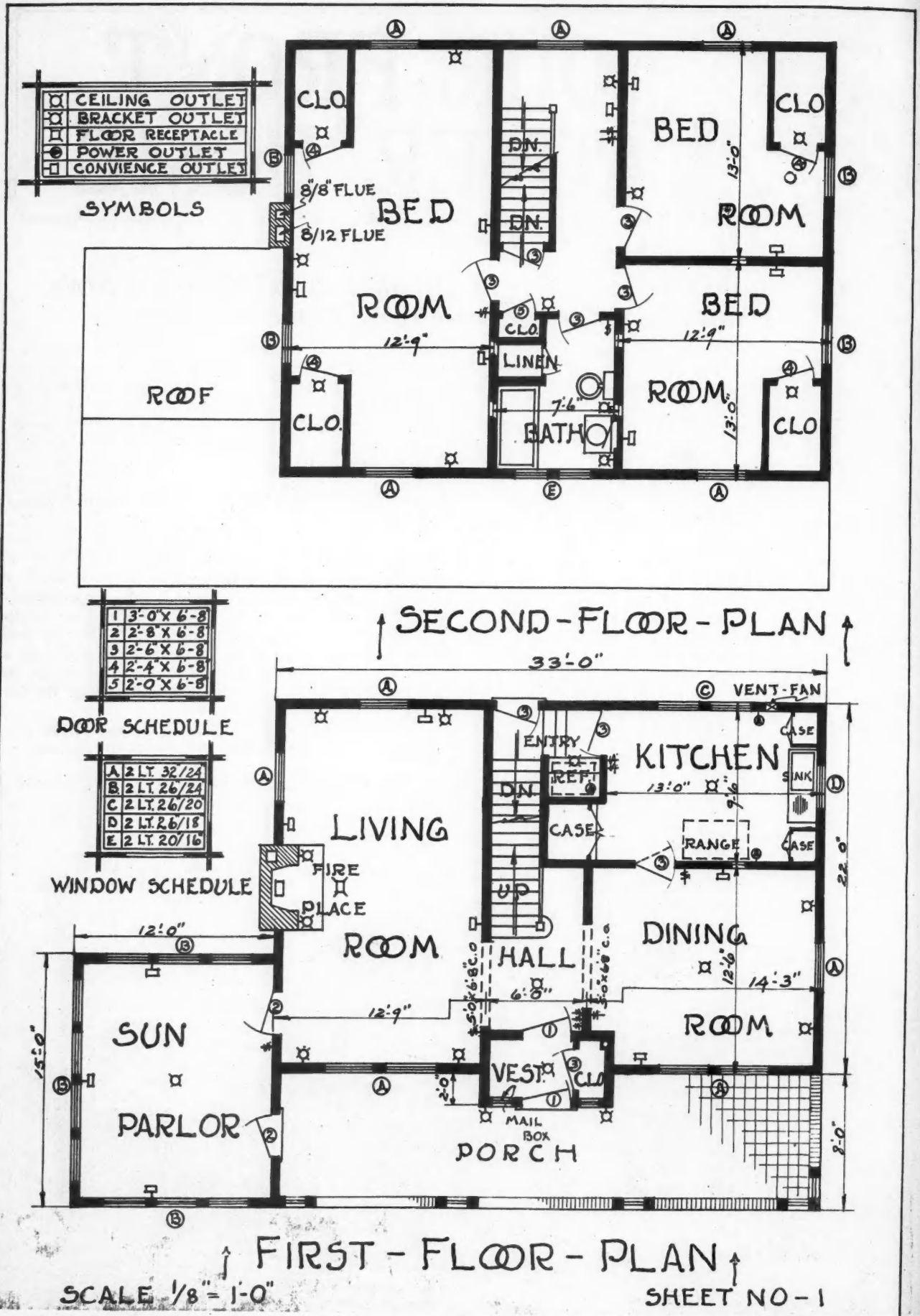
The latter room is compact and conveniently arranged to lighten the necessary labors of housework. Off it is a rear entry containing the basement stair and with the refrigerator set into a special closet. The stairway leading up from the reception hall terminates in a central hallway above stairs.

On the upper floor there is a large master bed room directly above the living room and occupying a corresponding space. Two large closets add to the convenience of this room and it is well provided with cross ventilation. At the opposite side of the house there are two smaller bed rooms each with its own large closet. The bath room is placed at the forward end of the hall, convenient to all bed rooms. In it there is a linen closet, while still another smaller closet is found in the hall just outside the bath room door.

On the pages which follow the complete floor plans, elevations and details, drawn to scale, are reproduced.



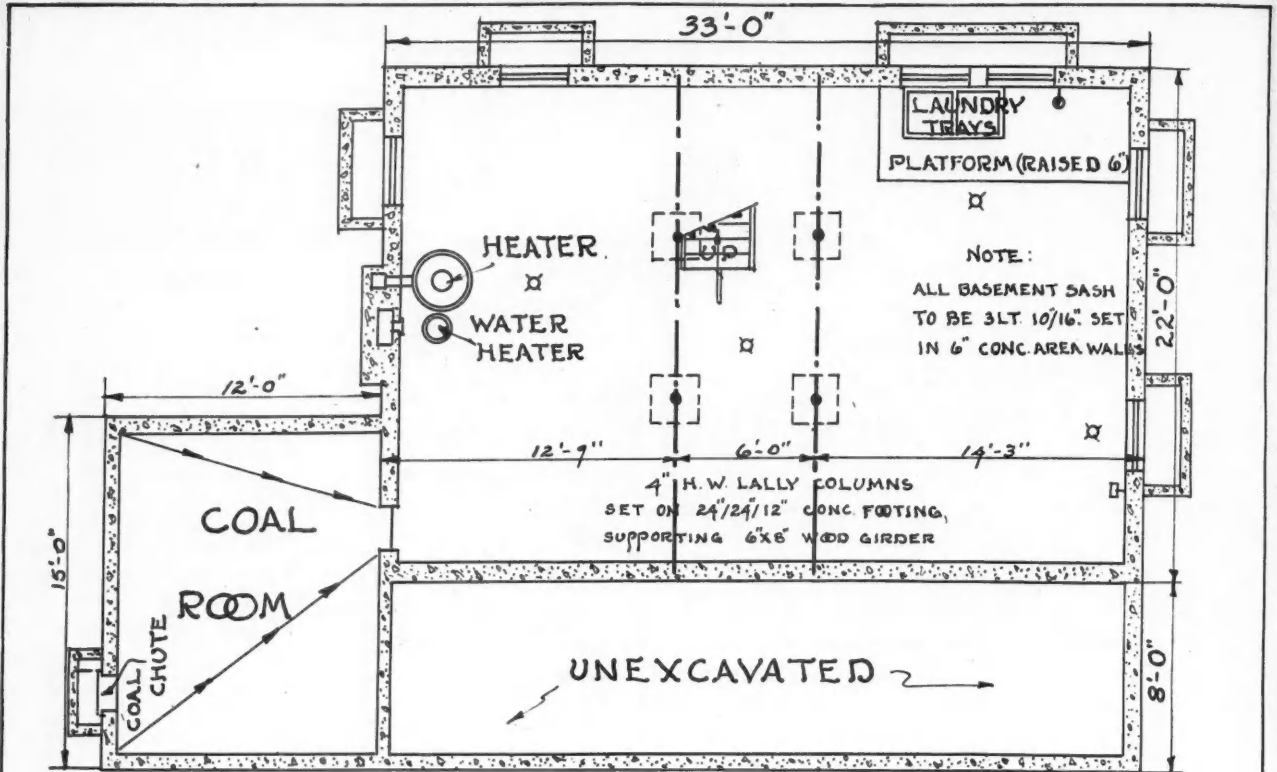
A Charming Suburban Home, Complete Even to the Garage Which Harmonizes with the House Design, Has Been Selected for Our Front Cover Home. It is shown in full colors on page one while on the next four pages floor plans, elevations and details will be found. Oscar G. Nordstrom, Ridgefield Park, N. J., Architect.



The Floor Plans of Our Front Cover Home Show a House of Six Rooms and Sun Parlor Offering a Maximum Amount of Roominess and Convenience in Every Detail from the Built-in Mail Box to the Kitchen Ventilating Fan.



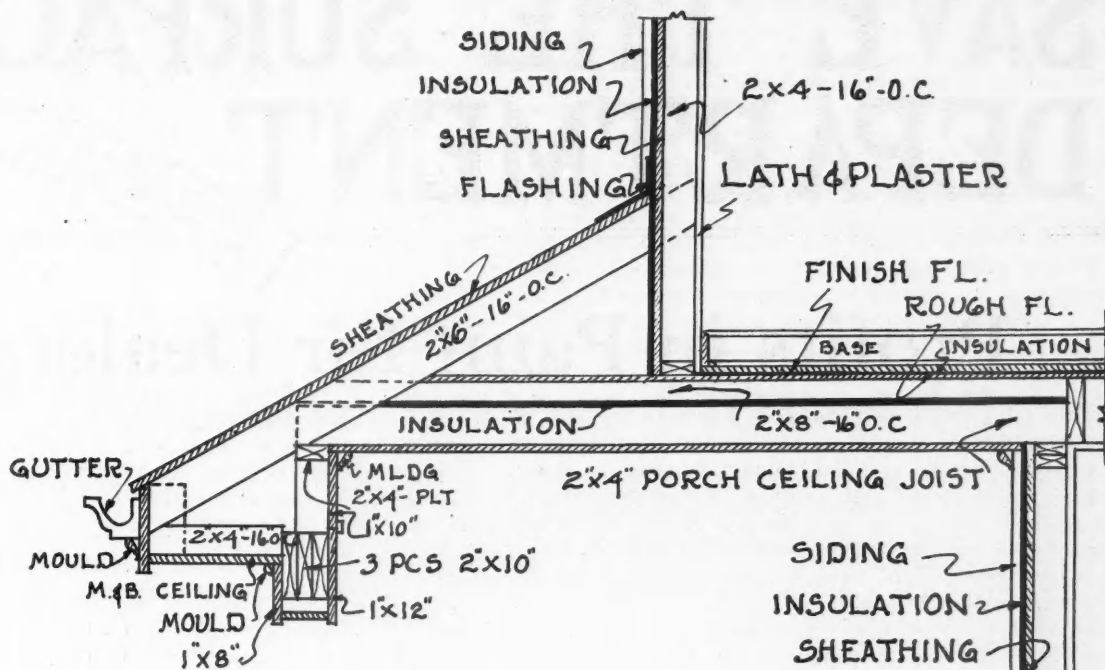
In Front and Left Side Elevations the Treatment of Roof Line, the Fireplace Chimney, the Pillared Porch and Sun Parlor Are Shown While on the Following Pages Further Details Will Be Found.



↑ BASEMENT - PLAN ↓

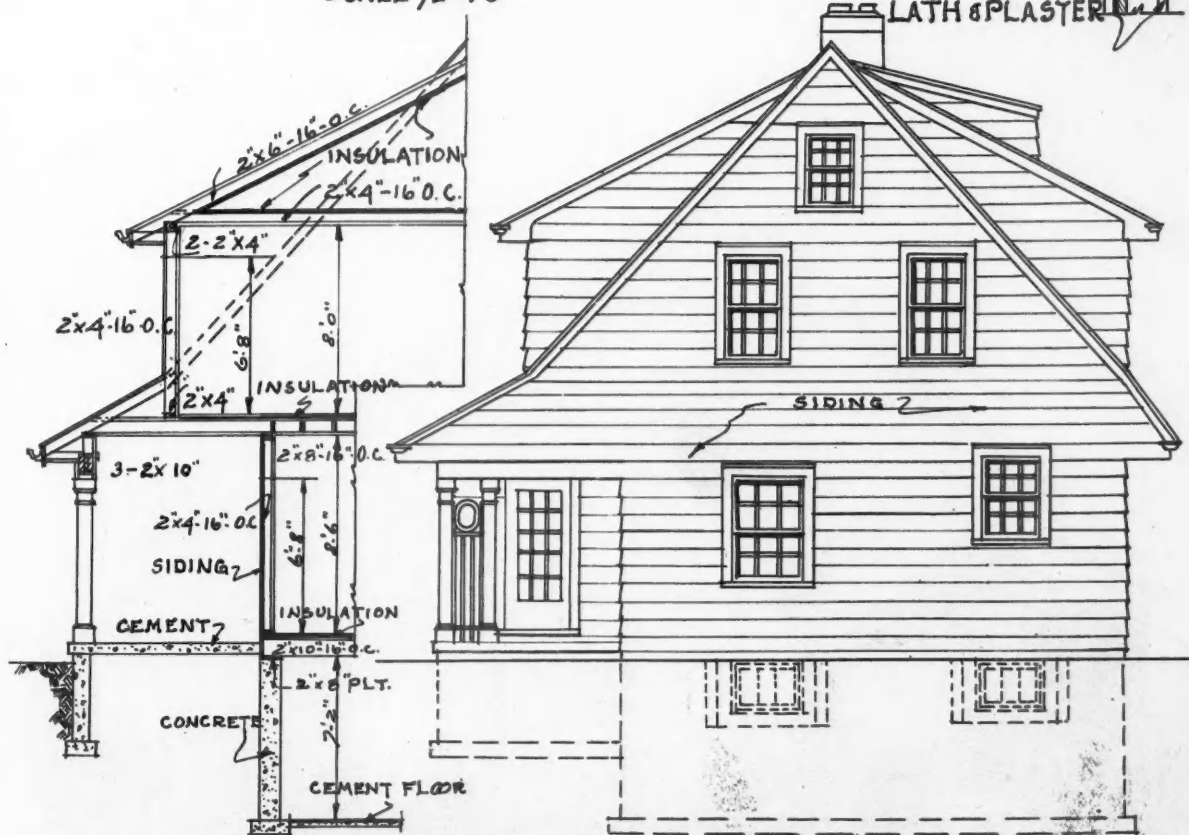


The Basement of Our Front Cover Home Is Completely Excavated Except the Space Under the Porch. Using the portion below the sun parlor as a coal room gives a very effective separation of the fuel storage.



SECTION "A"-A

SCALE 1/2" = 1'-0"



CROSS-SECTION

SCALE 1/8" = 1'-0"

RIGHT-SIDE-ELEVATION

SHEET NO-4.

Here Are Seen the Details of Wall Construction Showing the Insulation of Both Floors and Walls and Also the Construction of the Eaves. The side elevation completes the group of elevations shown on preceding pages.

SAVE THE SURFACE DEPARTMENT

Save the surface and you save all — Paint & Varnish

Profits in Paint for Dealers

IN the fall of 1923 the Springman Lumber Company, of Alton, Illinois, decided to add a paint department to its busy premises. The adjunct became a \$3,000 business within a year and, according to latest reports, it is now a steadily growing affair worth about \$12,000. Between 1923 and the last year two paint stores opened in Alton, but these events apparently did nothing to detract business from the Springman store.

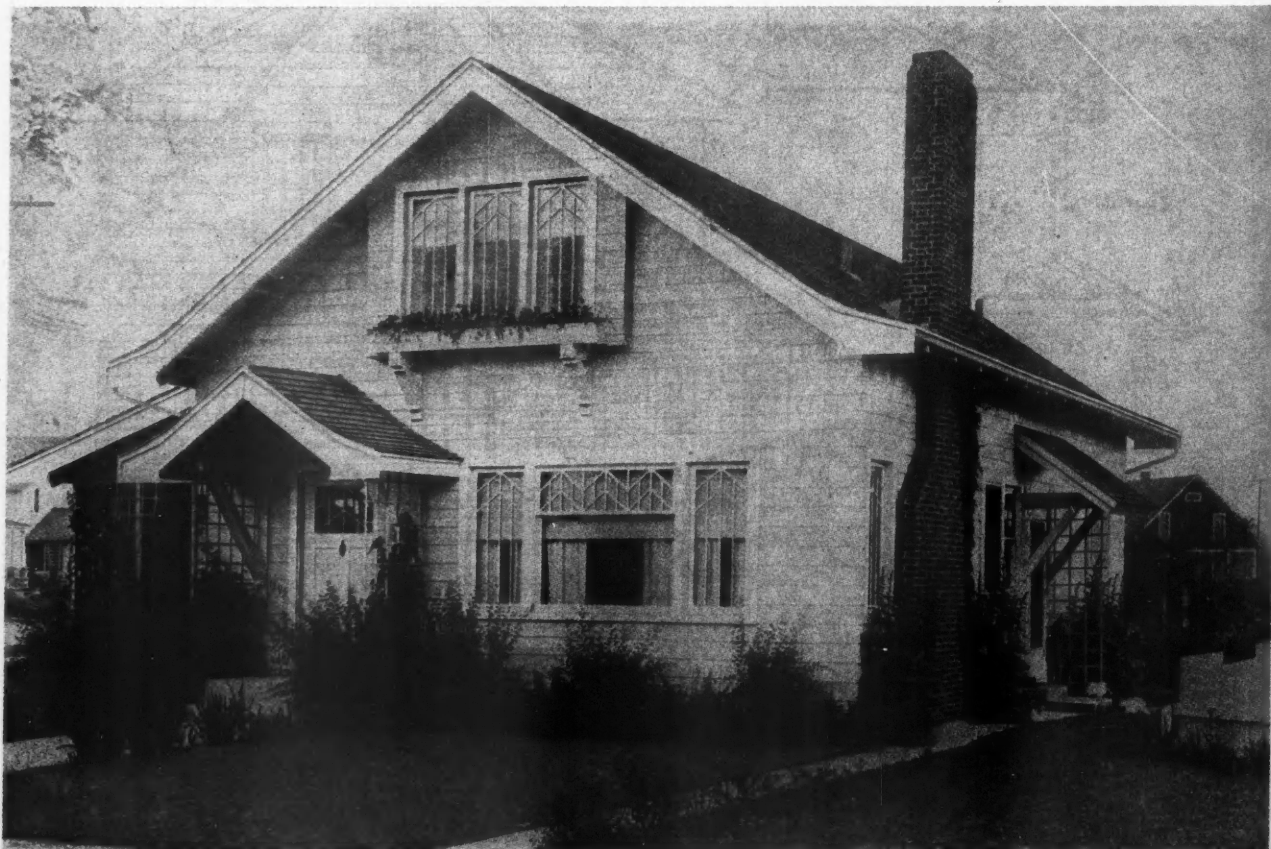
The basis of the success of this paint department is a complete stock of reliable paints as low priced as possible. Cheap prices on cheap paint never pay, either in dollars or cents or in increased patronage. It is extremely important for the building supply dealer to recognize this truth, since he is dealing with men who know building materials and are quick to doubt all materials sold by him if one of them proves inferior.

Much of the Springman paint stock is sold to general contractors who purchase their entire list of building mate-

rials at the Springman store. Since the dealer has the first opportunity to sell the contractor, it is logical that he include such necessary items as paint and varnish in his general stock. The contractor usually brings in his material list, and, if he does not include paint on it, there is an opportunity to solicit it as well as other things which he may have overlooked.

Most contractors prefer to buy all their goods at one place. It is easier for them, more convenient, and, in the long run, more satisfactory, since it is obviously more gratifying to deal with one person or organization with which one can become acquainted, than with a half dozen. His needs and tastes become known and he is given truly personal consideration.

Among the contributory factors in building up the Springman paint department are a unique and permanent paint display, the co-operation of the manufacturer whose paints are carried, knowledge of materials, and considerable



New and Freshly Painted—Yet Within Five or Six Years This House Will Be in the Market for New Paint to Protect It and Improve Its Appearance.

advertising. This paint display has become such a fixture that customers automatically look for it, and since it is sufficiently unique it always attracts attention.

The co-operation of the manufacturer consists in the services which any reliable and established paint company is accustomed to render. A salesman is sent regularly to inquire into the needs of the Springman company, to acquaint the salespeople with any new commodity that may have come on the market, to brush up their paint knowledge and to make suggestions.

The company's advertising consists of any mail inserts and a considerable amount of newspaper advertising, which, incidentally, is gradually stimulating a healthy counter trade. Paint circulars are mailed with statements and invoices.

Although many lumber and building supply companies

have awakened to the opportunities which lie in the sale of paint and varnish in connection with other building materials, too many are still ignoring them. Possibly the reason is that dealers, like many people, are not yet aware of the importance of these materials in connection with any type of building. Home owners are gradually realizing, however, that without paint protection their homes are short lived. Weathering and decay make short work of wood. Exposure is dangerous to steel and iron.

Public education is bearing fruits. More and more people are insisting upon sound paint protection for their new homes, and later, upon renewing that protection when conditions necessitate. Paint and varnish, unlike other materials used in building, are not purchased once, but periodically. The paint department, therefore, has a permanent clientele—an undeniable advantage to the dealer.

When the Buyer Moves In

FEW people escape the exigency of "making the best of things." Old-furniture-in-new-homes is one of the commonest of the problems that beset the home builder. A bright, new house shows up the shabbiness or discord in the old things which most people have to "make do" until some uncertain date when there will be enough money to refurnish the house from top to bottom.

By planning the decorative scheme to fit the furnishings or to make them appear more harmonious the builder can make his clients happier in their new homes and render them a distinct service at the same time. Most people disconsolately "make the best of things" by closing their eyes to actual conditions, but, as a matter of fact, what they are doing is making the worst of them. Discontent follows and they are wont to exclaim, "Oh, yes; the house is all right, but we haven't the furniture to suit it."

Wall colors are important in harmonizing furnishings since they form the background



Where Old Furniture and New Walls Have Been Combined, Through the Magic of Color, to Make a Unified and Beautiful Room.

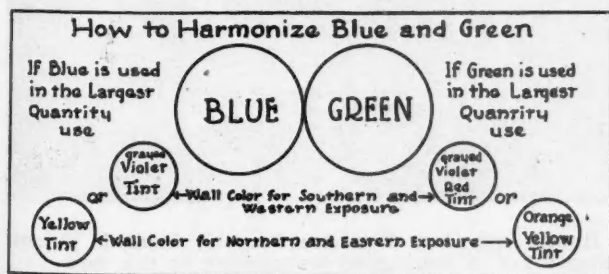


Chart Showing How Two Inharmonious Color Combinations May Be Improved by Contrast with Appropriate Wall Colors by Means of the Taylor Keyboard.

and control, to a large extent, the amount of attention which is to be placed upon single pieces of furniture. What is still more significant, color is more important to the average eye than form. If the color is right discrepancies in design are more easily overlooked.

If a client is planning to move his much used furniture into the new house you are building for him, plan the decoration to suit it. By means of any good color chart, the Taylor System of Color Harmony for example, a color may be selected, and the chances are that if thought is put upon the problem and the expert advice and assistance of such a chart is used, the old furniture will take on a new aspect and fit well into new surroundings.

Suppose a client finds it necessary to use some tapestry upholstered furniture in tones of tan and brown and a rug patterned in red and blue. The color combination—tan, brown and red—is not inharmonious, but it lacks much in interest and personality. It is apt to make the new living room look spiritless and inadvertently cause dissatisfaction with the room itself.

The Taylor Keyboard shows that orange-yellow harmonizes with red and blue (the rug colors) and with tan and brown also (the colors in the furniture). A golden yellow wall is suggested. Before deciding upon this color, however, the size and exposure of the room must be con-

sidered. Light, warm colors should be used in rooms of northern or eastern exposure, while light, cool colors are appropriate for the sunnier chambers. The reason for this is that warm colors advance and lend coziness and warmth to a room, while cool colors recede, adding apparent space.

If the room is of medium size and of eastern exposure, a tint of orange-yellow—apricot color—is suitable. If the room has southern or western exposure a cool color—yellow-green or blue-green—would be more appropriate. Either of these colors bring out the colors in the furnishings, form a sort of "color bridge" between them, and, in general, give them a color distinction which they do not possess themselves.

The principle back of such a color harmony is nothing more mysterious than optical harmony. Red, blue, tan and brown, used against a background of pale yellow, yellow-green, or blue-green, mix optically and present to the eye a pleasing and unified array of colors.

Paint is by far the most satisfactory medium to use when a color harmony must be evolved using certain tones as a starting point, since it is extremely flexible and can be had in any color. Shades, tones and tints can be produced accurately to suit the particular need at hand. Most people have a somewhat limited conception of what colors are

suitable for wall decoration. Gray and tan are popularly conceived to be in the best taste, but as a matter of fact, any color that functions aesthetically, is appropriate. Pale green, pale yellow, turquoise, apricot, warm amber grays, light coffee, beige and even lavender gray are but a few of the many interesting tints and shades that may be used with impunity if opportunity offers itself.

The builder will find frequent use for information about harmonizing colors. Nothing is more irritating to a buyer than to find that the walls are all wrong, so far as the furnishings are concerned. It is a pleasant profitable little courtesy to consult with the prospective owner about color scheme before permitting the decoration of the new house to get under way. It is even more profitable to be able to offer definite color suggestions, so that, in the end, there will be no feeling of dissatisfaction, of discontent, when the family moves in and finds that the plum-colored divan clashes violently with the rose-colored walls which the contractor absentmindedly allowed the decorator to paint.

It used to be thought that the ability to solve color problems was limited to the chosen few, but nowadays, with color and color harmony reduced to a scientific formula, it is easy for anyone interested in building, designing, decorating or living in a home to select colors wisely and well.

More Hints On Paint Selling

FEW people are interested in paint for itself any more than they are interested in wood, or concrete, or wall-board. An abstract interest in these materials is restricted almost entirely to members of the building trade. The average man thinks of these materials in terms of what they will do for him—in other words, service. The mere display of paint in a lumber or building supply store is about as enticing to the average person as the dentist's admonition to visit him every six months. It's a good suggestion but seldom sufficiently powerful to provoke action.

What arouses interest in paint is—to put it bluntly—advertising its services, and this any building materials dealer may do honestly and without guile. Paint is one of the best selling agents of the builder himself, because it lends beauty, permanence, protection and personality to a house. It is an economy measure, too, since it saves repairs and reduces upkeep bills—the chief worry of the prospective home owner—to a minimum.

Of course, there is a regular standard market for paint so that any stock of paint, no matter how haphazard in selection or how indifferently displayed, will sell itself eventually. But since paint is a necessary adjunct to the building trade and since it is a big profit maker for the man who handles it properly, there is no reason why every building supply dealer should not learn by the experiences of others and cash in on it himself.

Out in Cairo, Ill., there is the Cairo Lumber Company which has had a paint department since 1910. Until 1919 the stock was a small, inconspicuous part of the business. If a customer happened to think of paint while he was purchasing something else, a paint sale was made; otherwise the supply languished on the shelves. Then the company decided to make the paint department a paying proposition.



A Long Row of Houses and Only Two Are Properly Painted. Almost every community has as much need for painting as this one.

Their first step in this direction was to restock the department with well known and highly reputable paint. Advertising was the next step, then demonstrations and personal solicitation. Within a short time business began to pick up. In 1924 the department showed an increase of more than three hundred per cent over the original paint business in 1910.

The combination of quality product, advertising, and, lest we overlook an important item, a trained salesman in charge, developed a small, unimportant department into a highly satisfactory business builder. The Cairo Lumber Company ties up in the local newspapers with the national advertising done by the company whose products it handles. It won, recently, first prize for a window display of paint.

FURNACE HEATING

Suggestions on Furnace Pipe Fittings

Why Connection Pieces with Long Sweep Bends and Ample Areas Yield the Greatest Economy

This Department by R. C. Nason, Heating Expert, appears every month in American Builder

THE basic secret of any well calculated warm air heating system is good circulation. The supply of cool air, when interior air is recirculated, and cold air, when the supply comes from outdoors, is received at the base of the sheet metal casing which surrounds the hot surfaces of the heater. Heat is there imparted to the air and it rises from levity to the bonnet, leaders and stacks, being delivered to the rooms of the building at about 140 degrees Fahrenheit.

Here the heat units contained in the warm air are dissipated to the surrounding air until the two temperatures become equalized. Leakage through cracks around window frames, transmission of heat through glass, walls, ceilings and floors, cause lowering of the temperature, whereupon the cooled air, being heavier than the incoming supply, drops to the floor and is forced out through the doors and other openings by the fresh supply of warm air constantly delivered through the registers.

Unless mechanical fans are used, the rate of flow of the air through the heater and piping system is dependent on natural influences, in which external wind pressure plays an important part. Velocities, consequently, are low, in fact rarely in excess of 450 linear feet per minute to third-floor rooms and about 250 feet per minute to first-floor rooms. So far as rate of flow is concerned, the heater acts as a velocity booster.

To obtain the maximum heating value from a warm air furnace it is required that all elbows, T's, L's and other pipe fittings be of cross sectional area at least as great as the straight pipes to which they join and all bends be of what are generally referred to as long sweep pattern.

Obstructions and sharp, 90-degree short radius elbows cause abrupt turns in the air flow, thereby imposing fric-

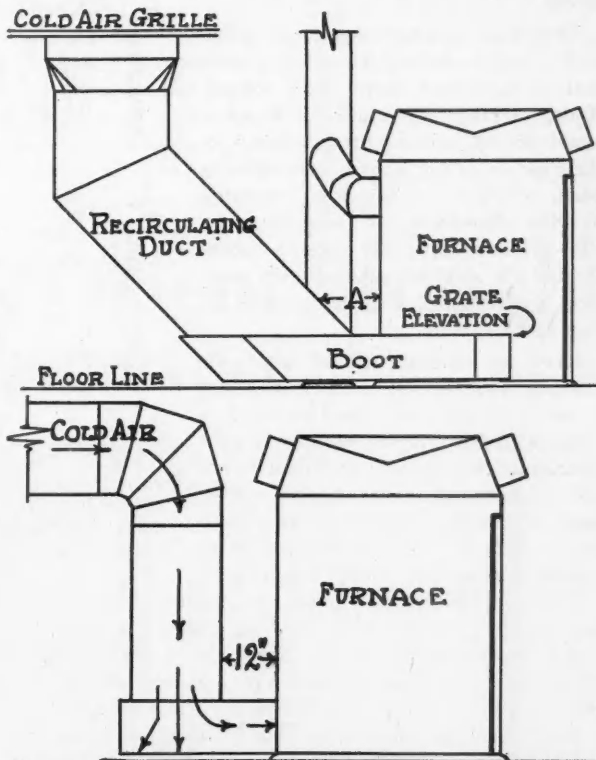


Fig. 1. At the Top, Correct Method of Designing an Air Supply Boot in Recirculating System; Below, an Incorrect Design with Arrows Showing Air Current and How Frictional Resistance Occurs.

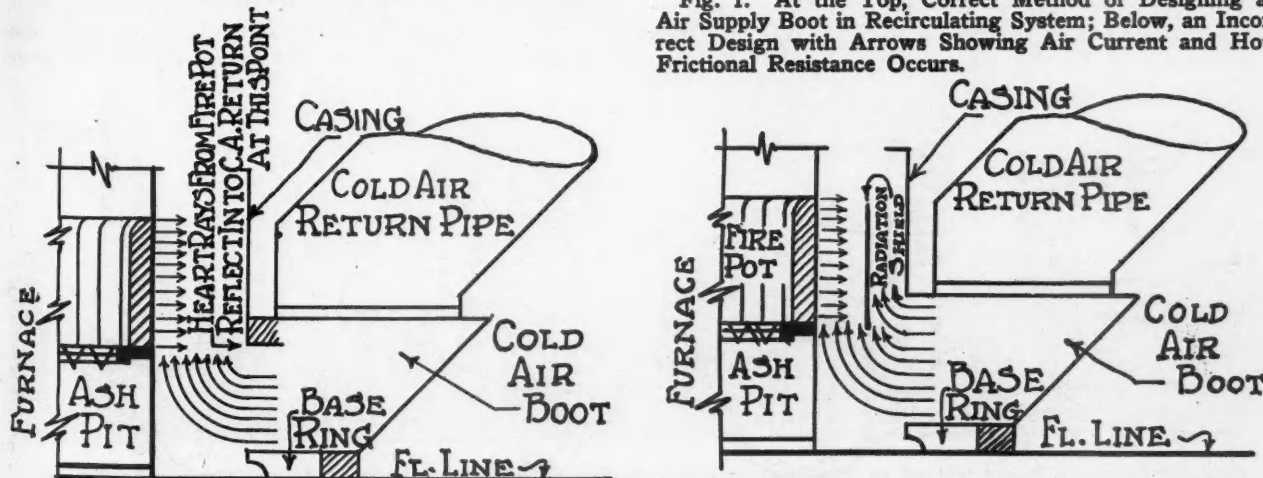


Fig. 2. The Drawing at the Left Shows How Reflected Heat Interfered with Circulation in the Cold Air Return, That at the Right Shows How a Radiation Shield May Be Installed to Bring the Course of the Incoming Air to a Point Below the Grate Level.

tional resistance which seriously reduces the velocity of air current through the entire system.

In past years it was common practice for furnace installers to make their own fittings. In late years, however, a number of manufacturers have large plants whose sole product is finished sheet metal pipe fittings. The modern trend has resulted in marked improvement in design and fabrication of such fittings.

The individually, and often hurriedly, made short-radius furnace elbow with leaky joints, proportioned without regard to internal friction and its effect in reducing flow of air, is fast being discarded in favor of pieces made by regular fittings manufacturers. Installers who still make their own fittings—and many still do—are turning out much better work now and designs are patterned after suggestions of the National Warm Air Heating and Ventilating Association, pictured in the literature of the fittings manufacturers.

That this modern custom is good, will be better realized when it is known that the friction loss in a round, 90-degree elbow, the radius of which is equal to $1\frac{1}{2}$ times the diameter of the pipe, is 17 per cent of the velocity head, or equal to the loss occurring in $8\frac{1}{2}$ diameters of straight pipe. Elbow loss is generally taken as equal to that in straight pipe of the same size, the length of which equals 10 diameters.

Even in straight, round pipe one velocity head is lost in 50 feet, hence it is observed that the friction loss even in gently sloping elbows is considerable. Elbows with radius distance less than one diameter should not be used in heating work and little is to be gained by making elbows with radius greater than two diameters.

In the case of square pipe, one-quarter of the loss from friction may be saved by making the outer side curved and its radius equal to $1\frac{1}{2}$ times the width of one side. In general, the loss in elbows of square pipes is greater than in round pipes, when areas are equivalent.

How the foregoing facts are recognized in correctly designed furnace fittings may be noted by examination of a few specimens. Except in small buildings, using air-supply ducts less than 14 inches in diameter, it is customary

to provide a special fitting at the point where the air supply duct joins the heater casing. This is known as a cold air boot and is usually constructed like the design shown in the illustration at the left in Fig. 1. The distance A would best be not less than 30 inches to prevent radiation from the heater casing under forced fires slowing up the circulation in the air supply duct.

Attention is directed to the boot shown at the right in Fig. 1, which illustrates a common, but incorrectly, designed boot. This boot has a square end and no attempt has

been made to prevent friction at this point. The air supply duct is also too close to the heater. By contrast, the connection shown at the left has the supply duct entering the boot at its end and the end slopes at an angle of 45 degrees towards the furnace, thus eliminating friction as greatly as possible under practical methods of manufacture. It is important, too, that the top of the boot should not extend above the level of the grate, which is usually a minimum of 14 inches above the bottom of the heater.

The author's attention was recently called to an installation where these precautions were not observed and the effect of the reflected heat of the incoming air proved to be somewhat like that shown at the left of Fig. 2. There was a good fire going in the heater, but little heat was being delivered to the rooms and the whole house was chilly. The arrows demonstrate what was the trouble here. As top of the boot was above the grate level the inward air current was combated by the heat from the firepot.

Although a new boot could have been installed at small cost, the owner was unwilling to spend the amount required. Consequently, the installer inserted a radiation shield like that shown in the figure at the right. The shield was set in front of the cold air inlet, parallel with the casing, half way between the furnace proper and the casing and extended from a point above the top of the cold air inlet to slightly below the grate level. This measure proved an effective remedy.

Bonnet Designs

On top of the sheet metal casing there is placed what is known among furnace installers as a bonnet. This serves

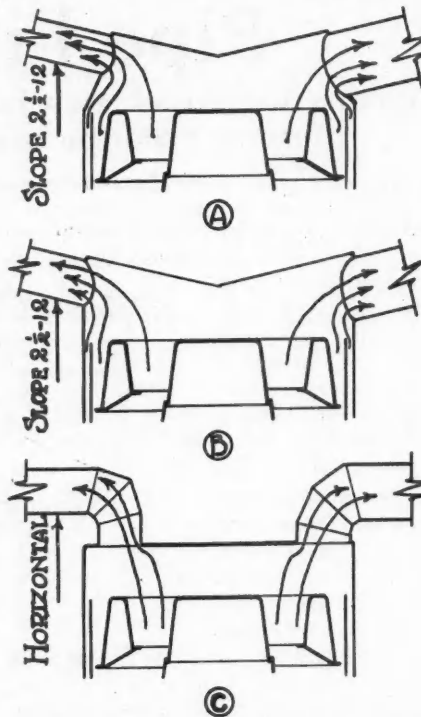


Fig. 3. Three Commonly Used Furnace Bonnets. A—Concave top, sloping sides; B—concave top, straight sides; C—flat top with top piping connections.

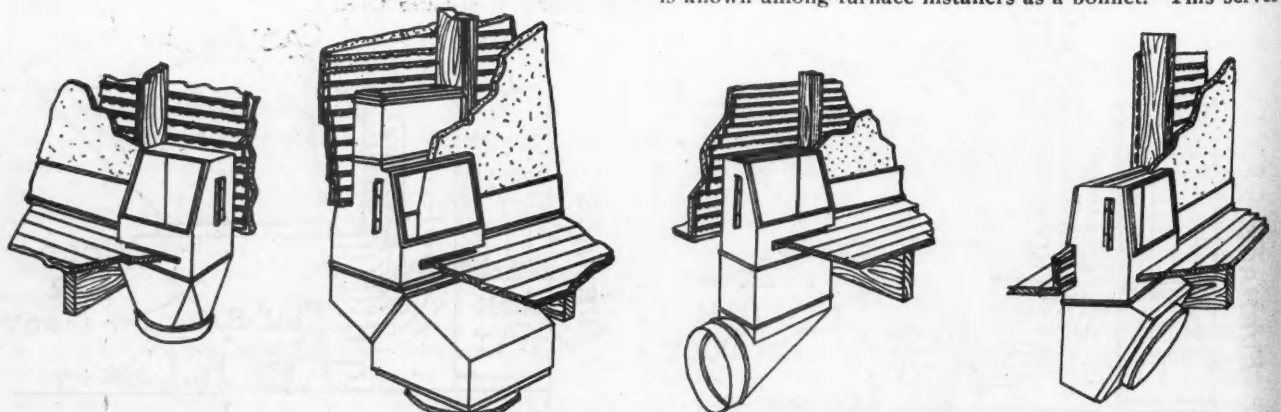


Fig. 4. Methods of Making Up Complete Stacks of Pipe and Fittings for Installation of Special, Side Wall and Baseboard Registers. Although double safety pipe and fittings are shown, similar combinations are possible with single pipe and fittings.

as a reservoir for the warmed air and provides for its distribution to the supply mains, or leaders, in quantities regulated by the sizes of the pipes leading from it to the rooms. Three designs are popular and some installers will be found who place faith in all three. Perhaps the oldest type is the flat top design with the pipes connecting to the top, shown in Fig. 3 as C.

According to engineering department of the University of Illinois this bonnet is excellent at low rates of combustion but can be used only when headroom allows. The elbows, necessarily directly above the points where the heat enters the leaders, were found to increase turbulence within the bonnet and, under average rates of combustion, to reduce its effectiveness. Hence, design B, Fig. 3, is preferred. It will be noted the sides are flat, the top concave and the leaders take off the sides, at an angle to permit the mains extending directly to the stacks. This type of bonnet was found to be best adapted to meet average combustion rates and conditions.

This design of bonnet, however, is less popular than that shown as A and commonly known as the conical bonnet. This has a concave top, slanting sides and the leaders take off at an angle to permit direct running to stacks without offsets or extra elbows. Tests showed this design to be most effective under high rate of combustion, that is, when 10 pounds of coal, or more, are burned per square foot of grate. In ordinary practice combustion rates do not reach 10 pounds, yet, during severe weather it may be necessary to force the furnace, hence the popularity of this type of hood. The fact that it presents a

neater appearance than the flat top, straight side bonnet, doubtless has had something to do with its common acceptance.

Stack Boots

In connecting warm air leaders to stacks and first-floor register boxes, elbows are necessary at the bases of stacks. Well designed stack boots are shown in Fig. 4. A shows a boot and register box when there is to be a sidewall register on the first floor, and B when there is to be a sidewall register and one or more wall registers on the floors above, connected to the same stack. Design B likewise has taken into consideration interference from a sill, which thus makes an offset in the pipe necessary.

Fittings C and D are excellent as elbows here have been eliminated and leaders extend directly to the stacks. Illustration C shows the best connection when a single sidewall register is to be used on first floor and D when there are two opposite sidewall registers. In all arrangements it is noted that the areas of the transformation pieces are equivalent to those of stack heads and the transformation from round to rectangular is as gradual as possible.

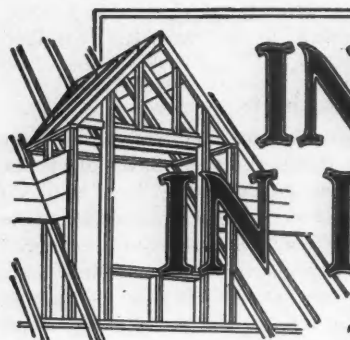
With the extension of warm air heating to buildings larger than the average frame residence, to country houses, clubs and industrial plants, walls of rooms to be warmed are often several feet apart. Whereas in the past it has been common to recommend a separate stack for each room, the use of mechanical fans, whereby the air is under posi-

(Continued to page 200)

Architecture of the Orient Brought to San Francisco



Costing \$1,200,000, the New Temple Emanu-El, Illustrated Above, Is Said to Be the Finest Jewish Synagogue in the Western World. It is of modified Levantine architecture and is built of steel frame with concrete walls. There are recreation rooms, class rooms and an auditorium with a stage besides the main auditorium which seats 1,800. Sylvain Schnaittacher and Bakewell and Brown were the associated architects and Bernard Maybeck and G. Albert Lansburgh were consulting architects.



INSTRUCTIONS IN ROOF FRAMING

This Department Appears Every Month in American Builder—Editor

Framing the Hip Dormer

By JOHN T. NEUFELD

DORMER framing can be simplified very much by starting right. By this we mean cutting out the proper opening in the roof and putting in the proper headers. The main rafters should be doubled on the sides of the dormer to give special strength at this point.

The rules in regard to cutting the rafters for the dormer are similar to those of the main roof. The main roof in this case has a 9-inch rise per foot run. The dormer covers a horizontal line of $6'8'' = 6\frac{2}{3}$ feet. The height of the dormer, therefore, is $6\frac{2}{3} \times 9 = 60''$ or $5'0''$. When cutting the studs for the dormer, we therefore cut the length of the first stud $5'0''$ less the thickness of the double plate at the top. Each succeeding stud sets back $1'4''$, therefore it is $1\frac{1}{3} \times 9 = 12''$ shorter than the stud in the front of it. The cut at the bottom end of the stud is obtained by using the figures representing the rise per foot run of the common rafter. In this case the main rafter has a 9-inch rise per foot run, therefore, the numbers 9 and 12 give the cut for the bottom of the stud.

The common rafter of the dormer has a $2'0''$ run. The length per foot run as taken from tables is $15''$. The total length of the dormer rafter is $2 \times 15 = 30''$. From this $30''$ a deduction must be made for the ridge board. If the ridge board is $1\frac{1}{8}''$ in thickness, then we deduct $13/16''$ on the horizontal from the length of the rafter.

The top and bottom cut of the common rafter is obtained by using the numbers 9 and 12 on the square. The 9 represents the rise per foot run. The jack rafter sits $1'4''$ from the corner of the building. Usually the measurements are taken to the center line of the rafter, but in this case it is to the edge of the rafter. Therefore when figuring the length of the rafter we find the length of the shorter side of the rafter and measure along this side when laying out the rafter. In this case again a deduction must be made for the hip rafter. This also is $13/16''$ and must be measured at right angles to the side cut of the rafter. In setting rafters for the dormer it is not always so important whether the jack rafters sit exactly on a certain line, therefore, it is not so difficult to cut these jack rafters to fit. The usual method for allowing for the thickness of the hip rafter is to take the measurement of the longest side of the jack rafter.

The side cut of the jack rafter is obtained by taking the length per foot run of the common rafter and $12''$ representing 1 foot of run on the square.

The length per foot run of the hip rafter is $19.21''$. The length therefore is $19.21'' \times 2 = 38.42''$.

To obtain the top and bottom cuts we use the numbers 9 and 17. The 9 represents the rise per foot run of common rafter and the 17 represents the run of hip per foot run of common rafter.

For side cut of the hip we use the length of the hip

rafter and the run of the hip rafter or we may use the length of the hip per foot run of common which is $19.21''$ and the run of the hip per foot run of common which is 17. In this case we have used the numbers 19 and 17.

Problems

1. If in the problem illustrated, the dormer was built $6''$ farther toward the side of the building, how high would it be in front?
2. What would the difference in the length of the studs be for the side of the dormer if set $2'0''$ on centers?
3. The main roof of a certain building has a $6''$ rise per foot run. A dormer similar to the one illustrated is built in this roof, what numbers on the square will give the cut at lower end of the dormer studs?
4. If the length per foot run of the common rafter is $13''$, what is the length of the first jack rafter if set $2'0''$ from the corner?
5. What numbers on the square will give the side cut for the jack rafter in the above problem?

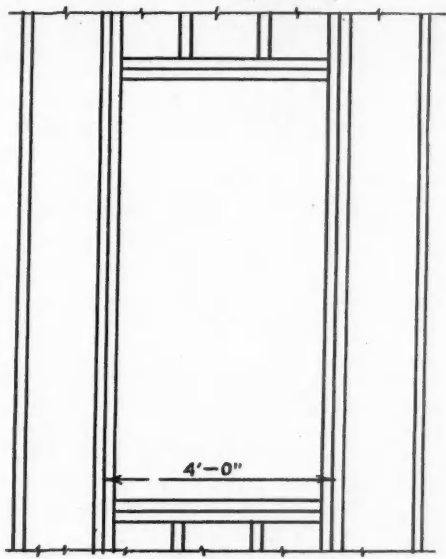
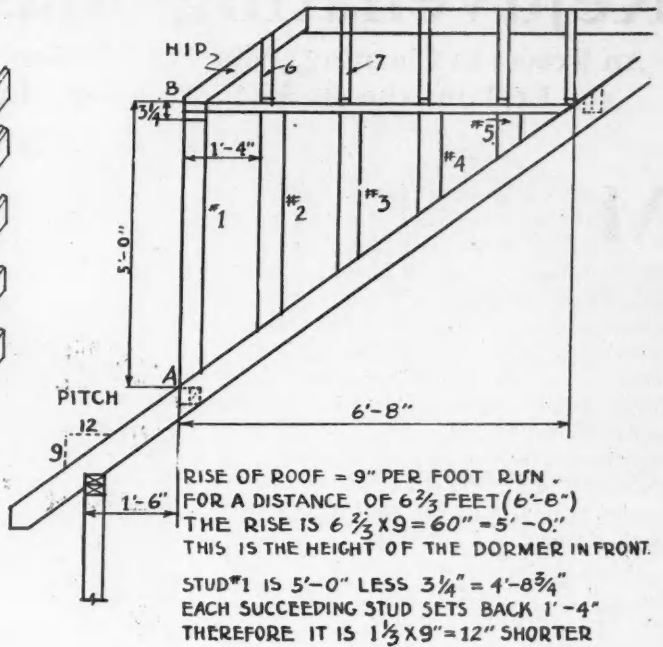
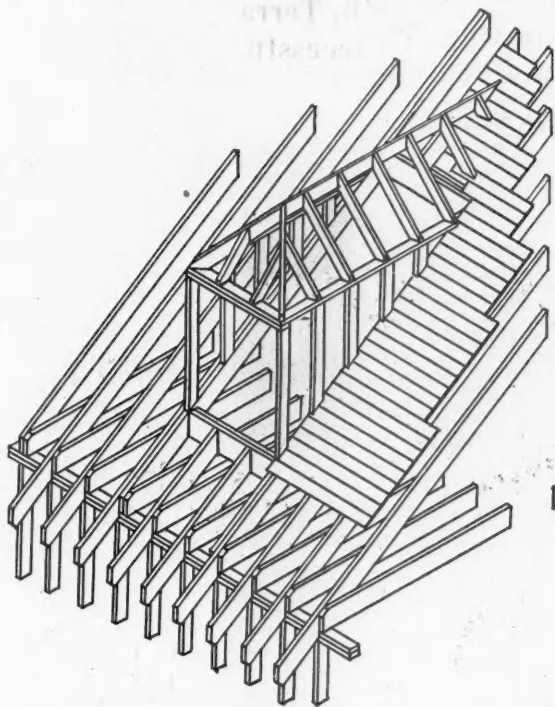
Answers

1. This would make the total run of the dormer $6'8'' + 6'' = 7'2''$ or $71/6'$. The height in front would be $9 \times 71/6 = 64\frac{1}{2}''$.
2. The difference in the length of the dormer studs if set $2'0''$ on centers would be $2 \times 9 = 18''$.
3. If the pitch of the main roof is $6''$ in $12''$, then the cut at the lower end of the dormer studs is obtained by using the numbers 6 and 12 on the square.
4. The length of this jack rafter would be $2 \times 13 = 26''$.
5. The side cut is obtained by using the numbers 13 and 12 on the square. The 13 represents the length per foot run of the common rafter. ❖

Greater Use for Sapwood

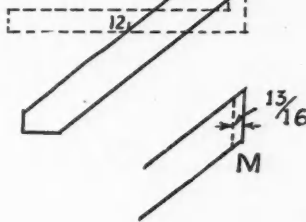
IN line with the more complete utilization of forest products is the recent report of the American Railway Engineering Association, which makes no restriction on the proportion of sapwood in treated timbers and recommends its use where preservative treatment is to be used. It is not uncommon to specify a large percentage of heartwood in the belief that it is stronger. Heartwood is not mechanically stronger than sapwood. It is more durable in the natural state but not more durable when treated.

The efficiency of treatment depends upon the depth of penetration and the preservative will penetrate sapwood much more readily than it will heartwood, because of the structure of the wood. Since treated sapwood is equally serviceable with treated heartwood and since the cost is usually less, the unrestricted use of sapwood can be considered a step toward the more complete utilization of wood which is applicable to the general building field.

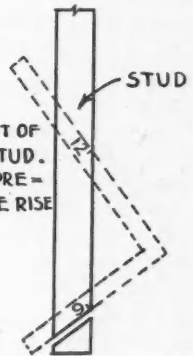


FRAMING OPENING IN ROOF FOR DORMER.

THE DORMER RAFTER HAS A 2'-0" RUN THE RISE IS 9" PER FOOT RUN. THEREFORE 9 AND 12 ON THE SQUARE GIVE THE CUTS

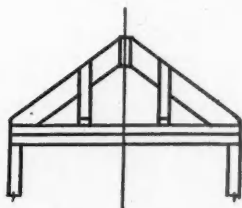
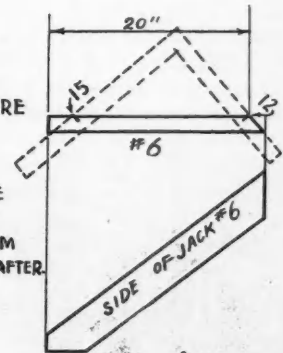


BOTTOM CUT OF DORMER STUD. THE 9 REPRESENTS THE RISE

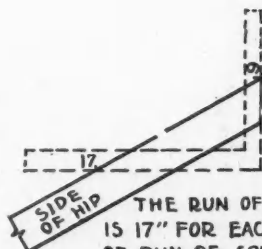


LENGTH PER FOOT RUN = 15"
 THE FIRST JACK IS 1'-4" FROM THE CORNER, THE RUN THEREFORE IS 1'-4" = $1\frac{1}{3}$ FEET = THE LENGTH IS $1\frac{1}{3} \times 15 = 20"$

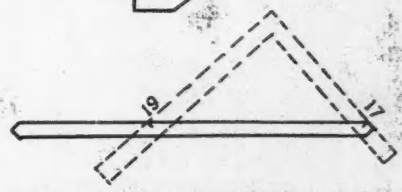
IN THIS CASE THE EDGE OR SIDE OF THE RAFTER IS USED AS THE MEASURING LINE, AS IT IS 1'-4" FROM THE CORNER TO THE SIDE OF THE RAFTER. DEDUCT FOR HIP.



END OF DORMER



THE RUN OF A HIP IS 17" FOR EACH FOOT OF RUN OF COMMON RAFTER, THEREFORE 17 IS USED TO LAY OUT THE PLUMB AND SEAT CUTS OF THE HIP



THE SIDE CUT OF THE HIP IS LAID OUT ON THE BACK OF THE HIP THE LENGTH OF HIP PER FOOT RUN OF COMMON IS TAKEN ON THE BODY. THE RUN OF HIP PER FOOT RUN OF COMMON IS TAKEN ON TONGUE OF SQUARE

Rejuvenating Masonry Buildings

An Expert in Cleaning, Pointing and Renovating Brick, Terra Cotta, and Stone
Explains the Methods Based on Many Years Successful Experience

By E. F. CREAN, JR.

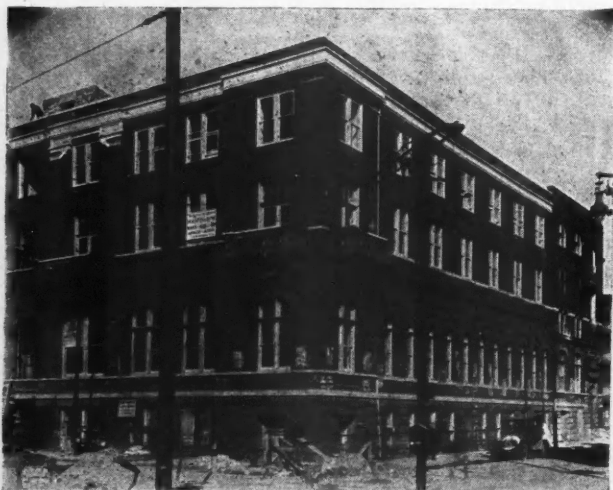
MANY a building of brick, terra cotta or stone becomes, in the course of a few years, so weatherbeaten and soiled that it appears to have passed its day of usefulness although, in fact, it is still a fine piece of architecture and structurally as sound as ever. Especially is this true in industrial centers where the acid of coal smoke attacks and discolors the masonry walls. With the walls dirty and discolored and the mortar joints partially washed out, the effect is discouraging but all that is needed to rejuvenate the building is a thorough cleaning and pointing.

When properly renovated the old building will be as good as new and an attractive part of the scene instead of the eyesore it has become. All too frequently, however, such a renovation is never made, because there is no one with the expert knowledge to handle the job, and the building rapidly deteriorates in value and structurally as well.

The correct methods of renovating the different types of masonry and removing the various kinds of dirt and discolorations are not generally understood. They may be learned, however, from those who have had experience in this special work and this article has been prepared to share with the readers of AMERICAN BUILDER the experience of many years of successful renovating of buildings. The E. C. Crean Company, of Philadelphia, has tested its methods on every type of masonry and has a long record of satisfactory work. Mr. Crean's instructions follow.

Pointing and Cleaning Brick

When red brick walls have become weatherbeaten, dirty and discolored, mortar has been washed out by the elements and the bricks have begun to decay, the following is the best looking, most durable, practical and economical treatment the writer has been able to learn. This method has



Before It Was Renovated, the Deaconess Home, Shown Above, Made a Poor Appearance with Stained Brick and Stone and Washed Out Mortar Joints.



The Deaconess Home, at the Philadelphia Entrance to Delaware Bridge, Restored, Is a Handsome and Substantial Building of Brown Stone and Brick.

been used for 20 years and more on hundreds of brick buildings in Philadelphia and nearby cities. Front walls being most generally treated in this manner.

First all joints, cracks and broken or decayed bricks are pointed smoothly with a mixture of portland cement and bar-sand, mixed half and half and colored with dry, metallic brown.

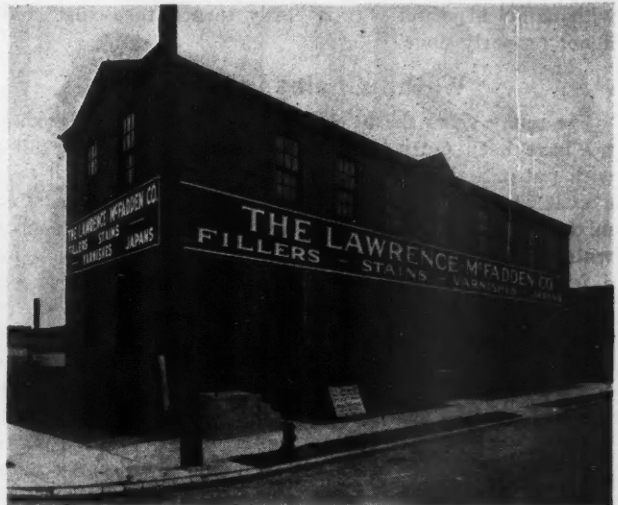
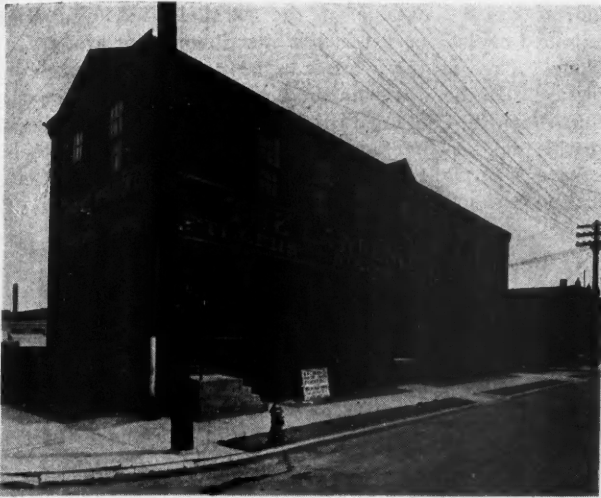
The bricks are then painted with a weak solution of hydrofluoric acid, mixed with water. A wood bucket must be used to hold the acid solution and a leather bound manilla brush for painting it on the bricks. This is then washed off with a sponge and clear water. A few square feet are done at a time. This removes all carbon, dirt and discolorations leaving the bricks perfectly clean.

Care must be taken that acid does not splash on any glass as it removes the polish and streaks glass. Acid streaks on glass can only be removed after much patient rubbing with a damp cloth and powdered pumic stone. This acid will also burn the skin and unless skilled in applying same, it is best to wear rubber gloves. White marble is also discolored with hydrofluoric acid.

After bricks are clean and dry, coat with one coat of pure linseed oil to which has been added some dry metallic brown. About five pounds of metallic brown to one gallon of oil is a good mix. This mixture must be stirred thoroughly before applying it on the bricks.

This stain dries in flat and restores the bricks to a natural dark red pressed brick color. The linseed oil, incidentally, waterproofs the wall and since it penetrates into the pores of the bricks it cannot crack, peel or blister and will not wash off.

After the oil-stain has been allowed to dry, about 24 hours being necessary, even, uniform lines are then striped over the joints with white lead mixed in oil. A straight edge and small lining brush being used for this operation.



Here is a "Before and After" View of The Lawrence-McFadden Co. Building in Philadelphia. A striking change was accomplished by merely cleaning the walls and pointing up the brick.

This gives the brick wall a very beautiful finish and one that will last for years.

A painters' swinging scaffold is best for this kind of work, being easy to put up and take down and it can be raised, lowered and moved quickly along the wall.

On rear walls where appearance doesn't count so much the cleaning, staining and striping can be eliminated, pointing alone is sufficient. The best mixture being portland cement and bar-sand mixed half and half. Cracked and sagging walls are strengthened considerably when pointed with cement and leaky and damp walls are made water-tight. It is always advisable to point a wall before these defects occur.

There are a number of pleasing effects that can be accomplished to suite individual tastes. After the bricks have been pointed, cleaned and oil-stained black lines can be striped along the joints using drop black or lampblack mixed with oil. The bricks can be cleaned and oil-stained and then pointed with a mixture of white cement and marble dust mixed half and half. Black mortar can also be used for the pointing. The best mixture being portland cement and bar-sand mixed half and half with dry lamp-black and a little metallic brown added.

Cleaning and Pointing Granite

A granite building, with terra cotta dome, had been accumulating dirt and soot for about 30 years before it was

cleaned by the following method: Two swinging scaffolds were hung on the building. Two mechanics worked on each swing and one helper on the ground to keep them supplied with necessary tools to carry on the work and to keep the ropes out of the acid water and clear of passing pedestrians.

A weak solution of hydrofluoric acid mixed with water was painted on the wall, a few square feet being done at a time and then washed off with clear water. This brought the granite and terra cotta up clean and new in appearance removing all dirt, soot, stains and discolorations.

A small pump was used to force the water through a hose up to the scaffold and the pressure was strong enough to wash off the acid solution and dirt from the walls. The pump eliminated about four water-boys on this job although on small jobs it would be more economical to have a boy carry water in buckets. The mechanic in the latter case would use a sponge and wash off the dirt. Sometimes a scrubbing brush is also necessary.

The windows near where the men were working were covered with canvas to protect the glass. A 20-foot swinging stage was rigged on the dome also. When a stretch of wall was washed down the scaffold was hoisted and the mechanics pointed the joints which had been washed out by the elements.

It was figured that with every man working hard for eight hours daily the job could be complete in 30 days. The man that will push continuously to accomplish more than an average day's work on any job is the exception and not the rule, unless some incentive is offered over and above the usual compensation.

Each mechanic was offered a bonus of \$50 to complete the job in 30 days. The boys were out to get the \$50 and the work was completed four hours less than the time limit set upon. This cut the working time down 10 to 15 days, saving considerable additional expense.

Great care must be taken that the acid is not too strong or it will turn the granite a rust color. The acid should be weakened with water, so that it is sufficiently strong to loosen dirt only, and it must be promptly sponged or scrubbed off using plenty of clear water.

Terra cotta and brownstone are cleaned the same as granite. Brownstone must be



A Partly Finished Job of White Ribbon Pointing on an Old Stone Barn Built in 1775. It is still perfectly sound and since being renovated and remodeled has become one of the most attractive residences in Upper Darby, Pa.

scrubbed well with a brush and the acid mixed properly with sufficient water. It is easily turned to a rust color if not properly done.

Washing Paint Off Bricks

For many years the brick walls in this part of the country have been putted and painted. All joints were filled with putty, a thick coat of red lead was applied and then a coat of flat red consisting of brick red ground in oil mixed with turpentine, after which the bricks were lined with white lead. This made a very good looking job for a few years, but the heavy paint cracked and peeled off, the putty fell out and the wall looked far worse than before it was done.

When a wall is covered with scaling paint the only thing to do is wash it off. Lye dissolved in water is painted on the wall with a manilla brush, then the wall is scrubbed with a sharp bristle brush and sponged off with clean water. Several applications of lye are sometimes necessary when the paint is very thick. Rubber gloves must be worn to protect the hands as the lye is bad stuff to handle and it is advisable to nail a stick on the scrub brush and grasp the stick when scrubbing paint.

Plenty of water must be used and the scrubbing with lye continued until the brick show up clean. The putty is then raked out with a sharp tool, or if hard cut out with a hammer and chisel. The wall is then renovated by pointing, cleaning, staining and striping as previously described.

Sometimes the lye remains in the bricks after washing off paint and it may spot up the oil-stain. To avoid this let the job stand for some time (four to eight weeks) before staining.

If marble or stone has been used with a painted wall that is to be washed off, it must be painted with a thick mixture of hydrated lime with a little portland cement added. This prevents the dissolved paint from soaking into the stone and discoloring it. After the paint has been washed off the lime is scraped off the stone.

Cleaning Marble

Marble that has become black and dirty can be quickly cleaned as follows: Get some old and worn out files or defective files from a file maker. Break the end of the file off with a hammer. This will leave a sharp edge. On the pointed end of file attach an old trowel handle. With the sharp end of the file cut the dirt off the marble until it shows up clean.

Wet the marble with water while cutting off the dirt. When the sharp edge on the end of file gets dull break another small piece off the end. After cutting off the dirt with the sharp file, take a small piece of an old grindstone or emery wheel and rub over the marble making it smooth and white. The marble can be easily kept clean, thereafter by rubbing occasionally with pumice stone.

Cleaning Limestone

Dirty limestone is cleaned by brushing with a coarse wire brush and then rubbing with a piece of stone and water as described in cleaning marble. Where black weather grease is encountered cut with a sharp file first.

Pointing Stone Walls

The old stone barn in the picture, built in 1775, was being remodeled into a modern suburban dwelling. First the joints were pointed with portland cement and bar-sand with a joint about 2 inches wide. A few yards were pointed at a time and while the mortar was soft a thin coat of white cement mixed with marble dust was troweled over the portland cement mortar.

A small cutter made out of two pieces of pointed tin tied to the end of a 1-inch stick was used to cut two fine parallel

lines in the wet mortar. With a small trowel the cement mortar on the outside of the parallel lines was neatly trimmed off leaving a 1-inch white ribbon joint around each stone. Part of the work can be seen completed in the picture. If the white finish is not wanted a cement color finish can be obtained omitting the white cement and marble dust. Where the stones in a wall are more or less square a straight edge can be used to guide the cutter, making the joints uniform and square.



Furnace Heating

(Continued from page 195)

tive pressure, and the impossibility under certain circumstances of running separate stacks, has made the consideration of horizontal branches for upper floors important. When a stack is run to two or more floors and is split into two horizontal branches, a T immediately above the stack is necessary.

Branches connect to the T in the same manner as in a hot blast system of heating, wherein a mechanical fan forces air through a bank of steam sections and delivers the supply air to desired points. Rounded corners and gentle curves are required in T's and each branch would best join the stack head as nearly like a Y as possible.

Connection to register is made by what are generally known as register boxes, sidewall types of which are shown in Fig. 4. Flanges supplied with the registers are to be pressed back over the inside edge of the register frames into which the register faces are fastened. In sidewall boxes, flanges are sometimes supplemented by metal clips. The outstanding feature in connection with setting registers is tightness, so that the warm air will pass through the face entirely, rather than through cracks about the frame. When there are cracks wall streaking rarely can be prevented.

The impression has sometimes existed, when walls show dirt streaks, that the furnace method of heating is not clean. This is by no means true, as the atmosphere, even the air we breathe, contains millions of tiny, invisible particles of dust. We seldom think of them, as in our homes they are seen only when a ray of sunshine reveals their presence. No system of heating is free from a certain amount of streaking adjacent to radiators and registers.

When air is moved constantly, as in heating, the opportunity is presented for the deposit of dust on walls and furnishings. Provided joints in warm air piping are made tight, as they are in installations recommended in the Standard Furnace Code, it will be many months or years before dust streaks become noticeable. Tight register boxes will prevent premature streaking and provide good distribution of heat.

Galvanized iron or tin may be used for fittings and these would best be of the same gauge as the straight pipes they join. Nothing lighter than IC tin or 26 gauge galvanized iron should be used. It is also suggested that stacks and fittings be wrapped with not less than one thickness of 12-pound asbestos paper. All studding and woodwork facing stacks should be lined with metal.

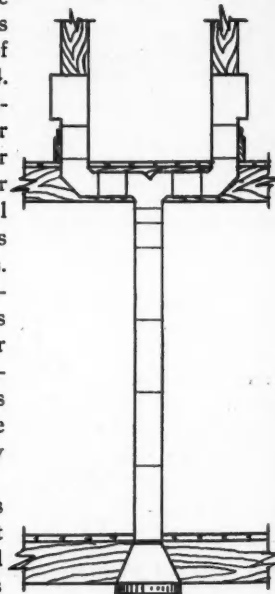


Fig. 5. Elevation to Show Proper Method of Making "T" at Top of Stack Where There Are Two Branches.

FLOORS



Hard-wood, Soft-wood
Open-grain, Close-grain

Dance Floors

Linoleums Rubber Tile

Cork Carpet

Cork Tile Magnesite

Mastic Terrazzo

Cement

ALL FLOORS

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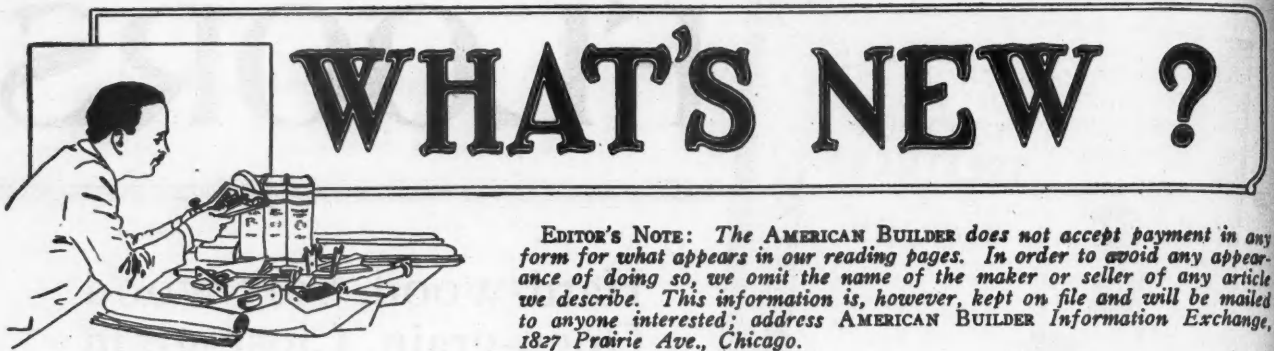
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A New Steel Tile

AN entirely new type of tile product makes possible a tile bathroom wall, which incorporates several advantageous features, at a decidedly low cost. There are three factors which make up this new wall. First an insulated base, second a special cement and third the tile proper, of



Laying Walls of a New Tile, Made of Vitreous, Porcelain Enamel Fused Onto Steel, Over an Insulating Base.

steel with vitreous porcelain enamel fused into it. Each of these factors is in itself permanent and when combined in the wall make a wall of remarkable permanence.

The insulating base is a non-conductor which affords a high degree of insulation against heat and cold, said to be greater than brick, cement or plaster. It is applied directly to the studding or wall construction. This base contains grooves and the special cement is laid on the base to fill the grooves. The tile are then placed against the base, so the flanges on their reverse side fit into the cement filled grooves, and the job is finished.

The tile is the same material as that used in bath tubs. The vitreous porcelain enamel is fused into a steel body to form a permanent tile material which is chemically inert to ordinary agencies of corrosion. It makes a beautiful surface which will not crack or check and is easily kept clean and sanitary by the same methods as used for clean tubs. The cost of this wall is said to be about half that of ordinary tiling.



Portable Floor Type Saw

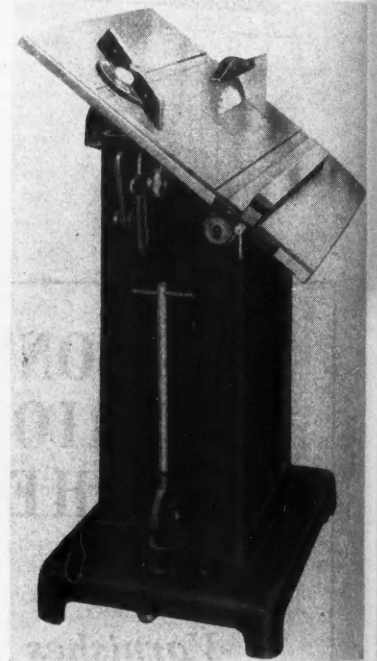
A NEW, floor type, universal saw is the latest addition to a well-known line of woodworking machines. This new saw combines all the advantages of the portable bench machine with the additional advantage of having a rigid cast iron pedestal in place of the ordinary work bench.

This pedestal provides not only a convenient operating position when the saw is in use but a convenient means of moving it out of the way when not needed.

Two rollers at the back and two stationary feet at the front of the base give a firm setting on the floor when in operation. When the handle is pulled forward in position for moving the machine, a cam automatically raises the feet from the floor and brings the weight of the front of the machine onto a third roller which is carried on a swivel bearing moving with the handle.

The motor and all moving parts are built into the upper portion of the machine so as to afford a thoroughly self-contained outfit. The upper part of the machine can be removed from the pedestal and used as a bench type machine should occasion demand.

The saw can be supplied with either a $\frac{1}{2}$ H.P. repulsion induction type motor to operate from a lamp socket or with a 1 H.P. repulsion induction type motor to operate from a power line. When equipped with a power line motor and 8-inch saw, it will handle stock up to 12 inches wide and $2\frac{1}{2}$ inches thick. The motor is belted to the saw arbor, eliminating all noisy, greasy gears and the attendant troubles. The saw arbor runs in the highest grade ball bearings obtainable.



This Floor Type, Universal Saw Is Said to Possess All the Advantages of the Portable Bench Type.

The table is a solid casting 25 by 26 inches, fitted with removable throat plate to allow for the use of dado heads, cope heads, grooving saws, etc. The saw can be raised and lowered to $2\frac{1}{2}$ inches above the table to cut $2\frac{1}{2}$ -inch stock. The table tilts to 45 degrees and can be instantly locked at any desired setting. The saw is properly guarded at all times and a splinter guard is a part of the equipment.

The cross cut gauge can be used on either side of the saw, and can be set at any angle and clamped rigidly in position for cutting off at any desired angle. Holes are provided for mounting an auxiliary wood face piece when desired. The ripping gauge is machined on both sides and can also be mounted on either side of the saw. Tightening of the lever head screws locks the ripping gauge.

The Right Fixture Commends Your Houses

The toilets you install speak volumes for the quality of your houses—if the toilets are "Standard" Purimos.

Install Purimos, along with other "Standard" Plumbing Fixtures, and you have features of cleanliness and sanitation, unexcelled.

Only the "Standard" Purimo, for instance, has these advantages that discriminating women are more and more prompt to look for and to recognize:

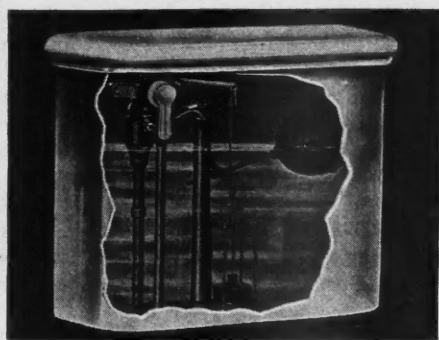
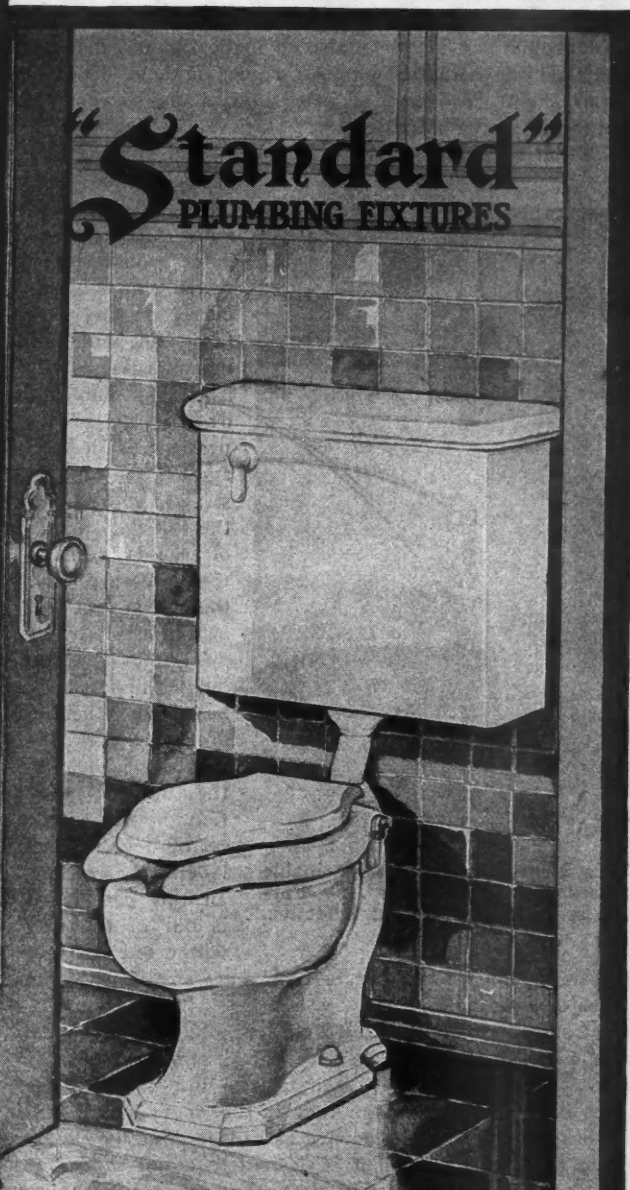
- 1 Extended lip both front and back—making for utmost comfort, cleanliness, and sanitation. In no other toilet is this obtainable.
- 2 White seat divided at the back as well as in front for greater cleanliness.
- 3 Large water area, with minimum of exposed fouling surface.
- 4 The new "Standard" Tank Fitting that insures quiet, efficient action under all conditions.

The Purimo, like all "Standard" Toilets, has the pleasing base design that lends real beauty to the bathroom. Like all "Standard" Toilets, too, it is made complete in "Standard" factories and is backed by "Standard's" reputation as the largest manufacturer of Vitreous China, Brass Fittings, and Enameled Ware.

Specify "Standard" Toilets as well as other "Standard" Fixtures to give your houses that all-around bathroom perfection that has the widest appeal.

Write on your business letterhead for the "Standard" Catalogue.

Standard Sanitary Mfg. Co.
PITTSBURGH

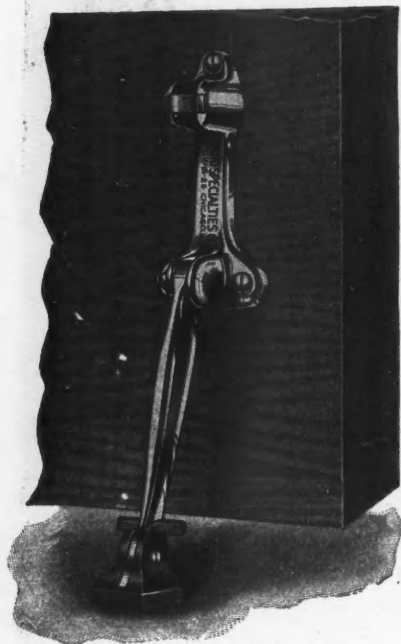


"Standard" Closets named below have the same quiet, efficient fittings. Working parts are above the water line to protect them from the corrosive action of water, and are of heavy red brass. Whether you specify the Purimo, as illustrated, or the Devoro, Siacto, Expulso, or Ejecto, you are sure of the best tank fitting that may be had.

Simple Effective Door Stop

THE door stop illustrated here is a device of particular excellence because of its strength, simplicity, safety and neat appearance. This stop is made in two styles of cast bronze and in brass, also in malleable and in cold rolled steel for garage doors. It comes in lever lengths of from 3½ to 12 inches, to adapt it to doors of varying clearance from the floor.

With the exception of the cold rolled steel stop, which has a pointed foot, all styles are provided with a corrugated rubber foot which will hold securely on any surface and will not mar the finest polished floor, linoleum or carpet. The pressure of the door against the stop is straight down with the full flat surface of rubber bearing the pressure and the rubber foot will last indefinitely.



This New Door Stop, Obtainable in Sizes and Finishes for Any Purpose, Is Both Simple and Effective.

trip over it, and the rubber foot prevents any injury even in case of a stumble.

This stop is not only serviceable for holding doors open, but is equally useful as a safety catch, serving the same purpose as the commonly seen chain. For this purpose it has the added advantage that if the door is unlocked by a burglar it cannot be opened as can be done by merely cutting the chain. When it is desired to admit some one it is not necessary to first close the door in order to release the stop as is necessary with the chain catch.

The steel stops may be obtained in black or red enamel, the malleable garage door stop comes in black enamel, the brass stop either unpolished, polished, velvet bronze, statuary bronze or nickel finish. The cast bronze stops are finished either polished, natural, bronze or gun metal.



Unglazed Tile

HAND made tiles, of native clay, blended and fired to bring out a wide range of effective colors, blends or ranges, is produced by a company specializing in this product. While these tiles are unglazed they are very dense, close grained and tough and may be used for exterior as well as interior work as frost will not disintegrate them. They may also be used under severe traffic and it is said that hard usage increases their beauty.

The colors are listed as follows: gray—from sage gray through Nile green to cinder black, the blend has the feeling of gray strengthened by darker shades and enlivened with the green shades. Yellow—from golden yellow through buff to the orange shades, the blend is inclined to flashes of pink, brown and green which gives strength and

life. Red—from orange to deep red and gunmetal with flashes, some suggestion of green and brown in the darker shades. Brown—from linoleum brown with flashes to seal and chocolate brown with occasional flashes of the red tints. Full range—all of the blends are included and may be graded either light or dark or with a predominance of the red brown, yellow or gray blends, as desired.



Hand Made, Unglazed Tile Made in a Wide Range of Blends Make Beautiful Floors Which Are Not Injured by Severe Traffic.

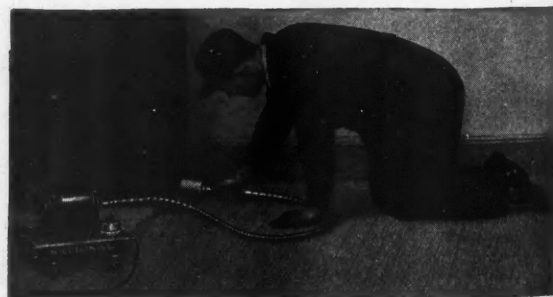
The colors go clear through the tile and are permanent. Standard shapes include squares and rectangles, Gothic hexagons, regular hexagons and Romanesque points. Since these tiles are all hand made other shapes may be designed with only the delay incident to special orders. After setting with a 1:1 mixture of sand and portland cement, the tile are cleaned with a weak solution of muratic acid and when dry are oiled with paraffine oil, and waxed if a polish is desired.



Power Sander Used as Drill

THE value of a well known tool or machine is often increased by the discovery of new uses to which it may be put. This is true of a small, portable sanding machine recently described in these pages. This machine is a small, high speed sanding drum, connected by a flexible drive shaft to an electric motor operated from an ordinary light socket. It is notable for its ability to reach all the odd corners which are ordinarily inaccessible to the power sander and must be finished by hand work.

The manufacturers of this machine now state that it can also be used to good effect for boring holes, for operating an emery wheel and for polishing and buffing. The contractor will be especially interested in its use for boring holes by power. The sanding drum can be quickly and easily removed and a bit of any desired size attached.



This Small Power Sander Which Reaches Inaccessible Corners Can Also Be Used as a Power Drill.

JOHNS-MANVILLE Asbestos Shingles



*10,000 fire chiefs
are voicing a
demand for **FIRESAFE** roofs*

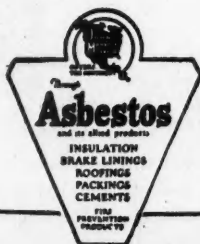
AS surely as time passes, all fire authorities will ultimately demand fire-safety for every roof in thickly populated communities.

In the meantime the public is recognizing the need and asbestos shingle sales are yearly showing a remarkable increase.

JOHNS-MANVILLE Inc., 292 Madison Ave., at 41st St., N. Y. C.

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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Improved Concrete Inserts

THE concrete insert, or ceiling socket, shown in the three small illustrations, is a device of particular merit for attaching objects to concrete ceilings, walls, beams and columns. It is intended primarily for hanging timbers, pipes, radiators, shafting, machinery, motors and electrical equipment but may be used for supporting partitions, hanging trolley track, sprinkling systems, shelving, racks and also for lifting dies and other loads with differential blocks.

The large illustration shows the plant of the National Mfg. Co. at Sterling, Illinois, in the new wing of which 6,000 of these inserts, manufactured by another prominent company in Sterling, were used, and an interior showing the use of the inserts for carrying shafting and sprinkler and a punch press suspended on a single insert.

The head of the bolt is placed in the insert. The nut is on the outside where any loosening can be seen at once and the slack taken up. The bolt remains vertical at all times with the threads down and with a hook motion the head of the bolt is seated in a wrench shaped socket.

The outer shape of the insert is such that the concrete reinforces it and adds strength. The form and depth of the wrench shaped seat socket make it easy to hold the bolt securely while the nut is being put on or taken off. If used in the wall, the bolt is supported in a horizontal position by the side of the insert. The head of the bolt is placed in the insert, where it is held securely, and the nut is turned instead of the nut being held and the bolt turned. This admits of two bolts being placed in a timber at proper intervals and the timber hung in place by entering the two bolt heads in adjacent inserts and sliding them into the seat sockets. The nuts can then be pulled up tight making



A Punch Press in the National Manufacturing Company's New Building Suspended from a Single Insert. The shafting and sprinkler system are also hung in the same manner.



The Plant of the National Mfg. Co. at Sterling, Illinois. In the new wing at the right 6,000 of the concrete inserts described here were used.

a secure and rigid connection.

By using long bolts shelving can be hung in the middle of the room without floor supports, racks can be suspended for light articles and numerous other uses made of the inserts. A special eye bolt can be placed in the insert for raising dies or other heavy loads with a differential. These inserts are made for $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and $\frac{7}{8}$ -inch bolts with standard square heads. With their use there is no chance of the nut becoming rusted in or the thread jammed so the bolt cannot be taken from the insert.



The Improved Mixing Faucet

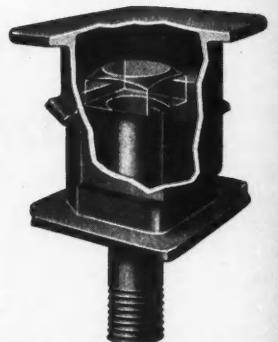
AN addition has been made to a well-known line of mixing faucets which should be welcomed by those who desire the best of modern conveniences. These faucets are operated by a swinging handle which rotates about the pipe. Because of this they can be turned off or on by a push with the wrist or elbow, a feature which will be appreciated by the housekeeper who often finds herself in need of turning the faucet when both hands are engaged. A half turn of the hand handle gives a full stream of water flowing in a straight, smooth, solid stream without splash, it is stated.

The new design is made with double handles, for hot and cold water, and with a swinging nozzle and a soap dish attached, especially for the kitchen sink. The china soap dish is removable. It is built of the best brass heavily nickelplated.

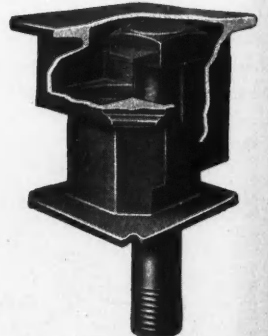
The nozzle is threaded and attached to the body of the faucet in such a manner that it cannot come loose and drop off, a common fault with faucets of this type. Re-washing is a simple operation which can be accomplished in a few minutes by anyone, without turning off the water.



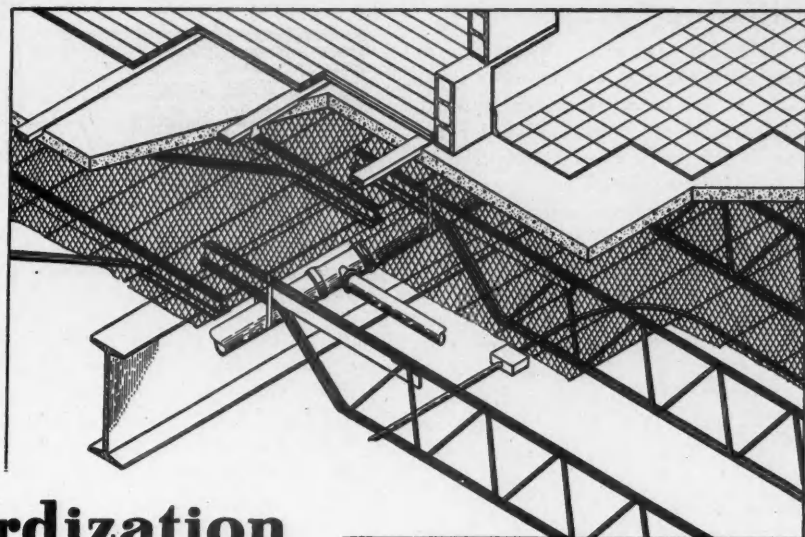
Phantom View of Insert with Bolt in Place.



Bolt Seated in the Insert.



Bolt Entering Socket Chamber.



Standardization is Revolutionizing Building Industry

Fireproof Construction Now Economically Available for Smaller Buildings

NOW the same fireproof floor construction used in skyscrapers is available for smaller buildings. Steel roof trusses, shop fabricated and ready for installation, can be shipped promptly for buildings where clear floor space is desired. Even vault reinforcing steel can be furnished in sections, tagged and with full directions for quick, easy installation.

Massillon Steel Building Products have been used over a period of years in all classes of buildings from coast to coast. They are well known to the architectural and building professions. They are scientifically designed to provide strength with lightness and are easily and economically installed.



Massillon Bar Joists are scientifically designed steel members made up of round bars welded into a single unit and are used for fireproof floor and roof construction in all classes of buildings. They are carried in stock ready for immediate shipment.



Massillon Roof Trusses are standardized, shop fabricated trusses especially adapted to garage and factory roof construction or any place where clear spans are desired. Most sizes carried in stock.

Some good territory still open for active dealer connections

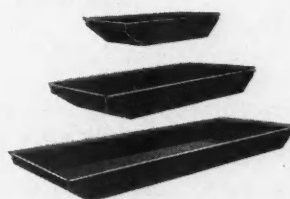
THE MASSILLON STEEL JOIST CO., 909 Beldon Ave., N. E., Canton, Ohio
 Canadian Manufacturing and Sales Agents: **Sarnia Bridge Co., Ltd., Sarnia, Ontario**

MASSILLON STEEL BUILDING PRODUCTS

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Other Building Products—Metal Lath—Both Rib and Diamond Mesh; Lath Accessories—Beads, Channels, etc.; Vault Reinforcing—Basement Windows, Area Grating, Window Guards, Coal Chutes, Steel Sash.

For the Contractors—Mixing Boxes and Mortar Boards.



3 Sizes—Depth 10 in.



3 Sizes—Height 3½ in.

Electric welded from blue annealed steel. Will outlast dozens of wood boxes or boards.

Once in use the boxes are watertight, vertical, and projections prevent slopping over. They present a smooth even surface for mixing and cleaning.

The problem of heating the mix in cold weather is solved by building a fire under the box.

MIXING BOXES

Size	Weight	Price
5' 0" x 2' 4"	80 lbs.	\$13.50
7' 6" x 3' 6"	140 lbs.	17.50
11' 6" x 4' 0"	320 lbs.	27.75

MORTAR BOARDS

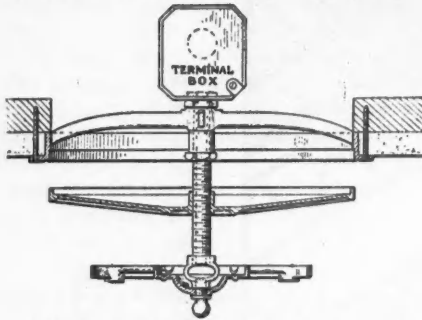
Size	Weight	Price
30" x 30"	32 lbs.	\$4.00
36" x 36"	42 lbs.	5.00
42" x 42"	53 lbs.	6.00

Prices net each, f. o. b. Canton, O.

Send us a sketch or plans of your proposed building for quotation of your building requirements. Descriptive literature of products sent architects or contractors on request.

New Ventilating Fixture

A SIMPLE device, which affords better ventilation, is now being manufactured for installation in most types of buildings. Heated air, without force, moves upward, hence an opening with an adjustable closure disc, located as a fixture, in the ceiling of the room, must aid in keeping the air fresh. Healthful comfort is obtained not so much by lowering or raising the temperature as by keeping the air circulating, replacing



This Ventilating Fixture Can Be Used Separately or with a Ceiling Electric Fixture.

air. In cold weather a small opening is sufficient, thereby conserving the room's heat and affording, at the same time, ample ventilation without requiring the wide opening of windows. Danger of asphyxiation is eliminated and stuffy atmospheric conditions are impossible.

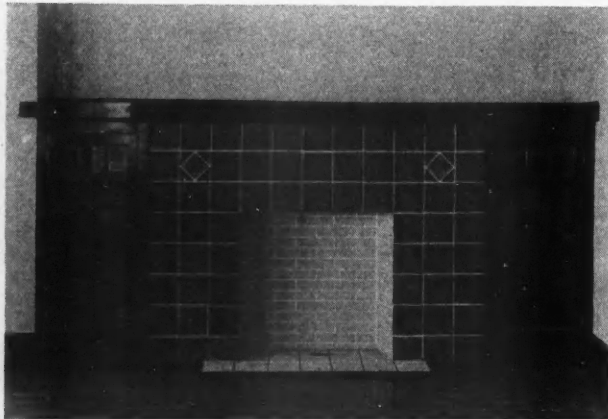
This fixture is made in several types, plain, for rooms lighted from the side, and electrically wired and equipped where illumination from the ceiling is desired. It is possible to attach almost any type of electric ceiling fixture to the spindle around which the disc revolves. The cost, when electrically wired, is comparable to other lighting fixtures, and when plain is quite low.

It can readily be seen that, in top floors of buildings already constructed, installation is simple, free egress of air being provided by most any type of roof opening of sufficient size. In other than top floors, installation can only be made where ducts or vents are provided in floors or partitions. In ordinary planning and new construction, such ducts and vents for its installation are easily provided at small cost.

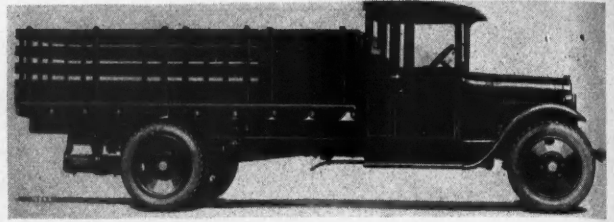


New Two Ton Trucks

THE latest addition to a widely used line of commercial cars and trucks are two new types of two-ton capacity. Like the small trucks formerly comprising this line, the new chassis will be supplied with a variety of bodies



The New Tile Fireplace Can Be Obtained Either Plain or with Bookcase Units Attached at the Sides as Shown Here.



The New Two-Ton Truck Made, by One of the Leading Truck Manufacturers, in Two Lengths and All Body Styles.

suitable to practically every requirement. Two lengths only are made. The shorter, for 9-foot bodies, has a wheel base of 137 inches and the longer, for 12-foot bodies, has a wheel base of 162 inches.

Both chassis are equipped with pneumatic tires, with either single or dual rears optional. When single tires are used 32 by 6-inch size are fitted in front and 34 by 7 at the rear. For dual rear tire equipment disc wheels are standard and 34 by 5-inch tires both front and rear.

These newer and larger trucks embody the same, well tried constructional features found in the one-ton and 1½-ton trucks which have formerly formed this line. The power unit consists of the same four-cylinder engine with a heavy duty, truck type transmission. The heavier frame, springs and other chassis parts insure service with two-ton loads just as satisfactory as that supplied by the smaller trucks hauling loads for which they were designed.

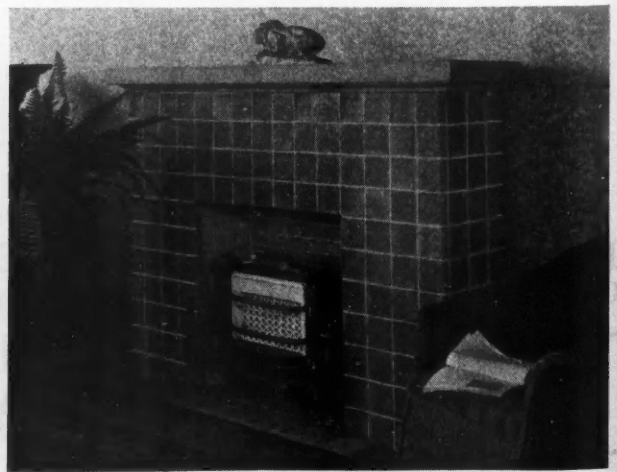


Ready-Built Tile Fireplaces

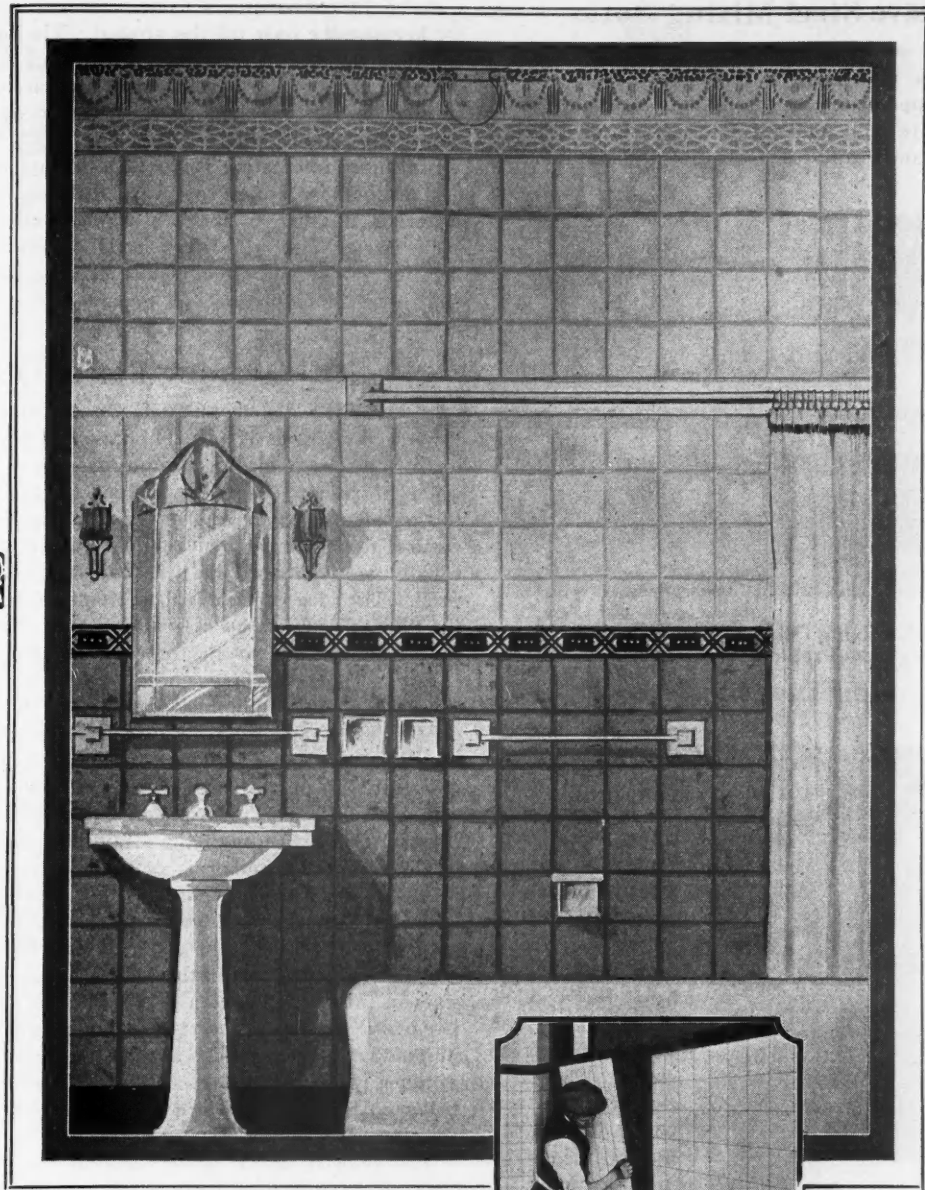
FOR some time one manufacturing concern has been building one-piece, ready-built fireplaces which are crated and shipped to any point. On reaching the building they can be uncrated and carried into the house by two men and easily installed by one man. The services of a skilled mason are not required, that part of the work is all done at the factory before shipping. These fireplaces are furnished in various sizes and designs of brick.

Now this company has developed and placed on the market a new design finished in tile. The new tile fireplaces can be obtained either plain or with ornamental inserts and either with or without bookcase units attached.

When used for gas or electricity, the back lining is shipped attached to the fireplace facing and a cement top or cover is used to protect the wood shelf from the heat. When used with bookcases no tile is sent for the return ends, which effects a considerable saving in cost.



These Fireplaces, Built in the Factory and Shipped Ready to Set Up on the Job, Are Now Being Made in Tile as Well as Brick.



This delightful bath-room illustrates only one of the many practical uses for SANI ONYX. Ideal for every room in every home.



SANI ONYX is a vitreous substance, fused from rock ingredients—more beautiful and enduring than marble, tile or plaster. Just the thing for walls, ceilings, wainscoting, floors, etc. Available in six standard colors—White, Blue, Ivory, Green, Gray and Black; and six textures, Flame Glaze, Semi-Matte, Matte, Tapestry, Polychrome and Embossed. Any special color or design may be had to order.

With this wide range SANI ONYX affords decorative opportunities never before possible. And SANI ONYX designs and colors are *permanent*. They last for a generation without one penny of upkeep cost!

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SANI ONYX
A VITREOUS MARBLE
A PRODUCT OF THE MARIETTA MANUFACTURING COMPANY

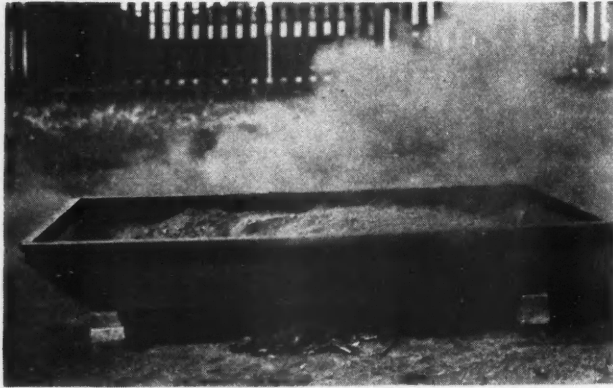
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Office and Works: 91 BROOKSIDE, INDIANAPOLIS, INDIANA

Inexpensive Steel Mixing Boxes

ANY plastering, cement or mason contractor who has faced the task of mixing a batch of mortar on an icy cold day will appreciate the possibilities of a steel mixing box. With a fire built under it, the problem of delivering the mix warm and ready for use is greatly simplified.



With This Steel Mixing Box a Fire Can Be Built Beneath, Simplifying the Problem of Delivering a Warm Mix.



The Construction of These Boxes Makes Them Amply Strong Though Light in Weight.

A new line of electrically welded, sheet steel, mixing boxes is illustrated here. Three standard sizes: 2 feet 4 inches by 5 feet; 3 feet 6 inches by 7 feet 6 inches; and 4 feet by 11 feet 6 inches are available for shipment from stock. The largest of these can be handled easily by two men.

A special joint construction between the sides and bottom of the box makes it a

water tight container. This joint makes a rugged support for keeping the base off the ground. The box serves as an excellent protection for covering sacks of cement and lime on rainy days. The beveled ends are carried up vertically so that loss from slopping a wet mix over the ends is practically eliminated.

Still more interesting is the fact that quantity production has made these boxes cost very little more than the raw materials it takes to make a wooden mixing box of the same size. With no slivers, nails, knotholes, cracking or splitting, these new steel boxes make a decided improvement over older methods in general use.



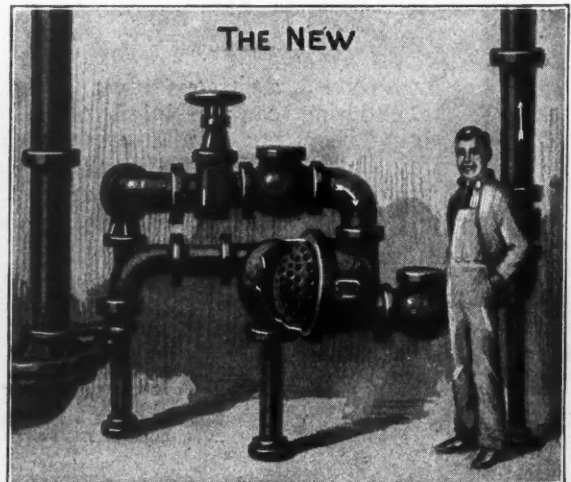
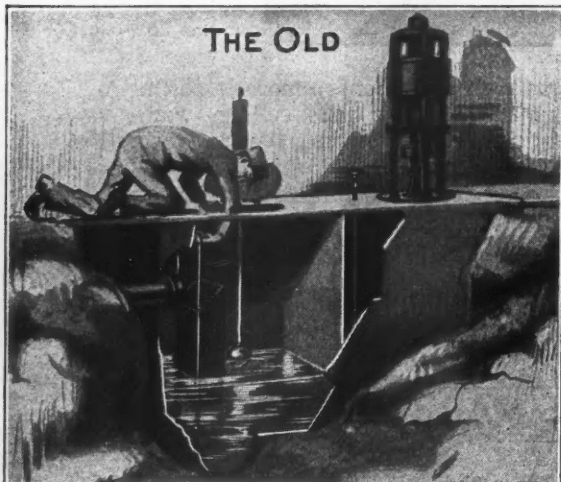
Self-Cleaning Ejector Pump

A RECENT development in the manufacture of sewage ejector pumps is the elimination of the manual cleaning of the sewage ejector strainer baskets or screens. Many years of research and experiment have been devoted to this problem by engineers of the company making this new ejector, to determine a means of eliminating hand cleaning. Finally a plan based on the flow reversal principle was tried. The idea of cleaning a filter or screen by reversing the flow of water is by no means a new one but the adapting of this scheme to ejectors had never before been tried.

The scheme has now been developed, with complete success, and this equipment completely eliminates the need of screens, strainers or strainer baskets which have to be periodically cleaned. The strainer itself consists of a cast iron screen of 1-inch mesh enclosed in a special cast iron housing. The principle of cleaning this screen is the reversal of flow through the strainer chamber.

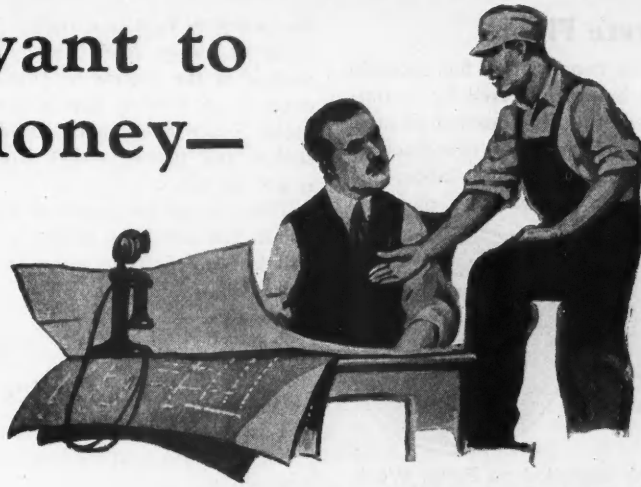
The strainer chamber is connected between the sewage inlet and the pump discharge. This means that all sewage is intercepted on the sewer side of the strainer in the strainer chamber; but the water passes through the strainer and through the pump into the wet basin. When the water rises in the wet basin to a predetermined height, the switch is closed. The pump starts and reverses the flow of water, pumping the water out of the wet basin, through the strainer, into the sewer. All solids and foreign matter collected by the screen are carried away into the sewer by this outward flow of water.

The velocity of the water flowing out of the pump and through the screen is quite great. It is four to five times the velocity of the water when it enters the wet basin. This makes certain that foreign matter caught in the screen will be pushed out of the screen and discharged into the sewer.



The Old Types of Sewage Ejector Pumps Required Hand Cleaning of the Strainer Baskets or Screens. The new pump, described here, cleans the strainer by reversal of the flow.

If you want to
save money—



use **CARNEY**

ANY man who has ever seen Carney Mortar on a job, will go to bat for Carney strong, particularly if he's the fellow who is interested in smaller pay rolls and lower material costs.

Carney shows a big labor saving in mixing. It comes all ready to use—there's no soaking or slaking to be done, and no lime needed. All the mixer needs to do is mix sand, water and Carney. One man with a machine can furnish mortar for a crew of 30 or more masons.

Carney Mortar also shows a marked increase in the speed of the masons. Before going into the wall, Carney sets slower than other cements. This quality makes tamping and tempering on the boards unnecessary, permitting the masons to spend all their time setting up bricks. Carney's unusual plasticity makes possible the carrying of more sand, laying more brick to the barrel and laying brick faster.

All of which goes to give you a decidedly better margin on every job. It's a saving you shouldn't let get away.

THE CARNEY COMPANY

District Sales Offices: Cleveland, Chicago,
Detroit, St. Louis and Minneapolis.

"We have your request for an expression concerning the use of Carney cement on the St. Louis Theatre.

Carney was used for setting all brick and terra cotta. The mortar worked satisfactorily for the bricklayers and proved to be economical to use, in fact more economical than we expected.

The Architects and Owners were also very well pleased and there have been many favorable comments on the brickwork."

JULIUS SCHMITT, Vice-President
FRED SCHMITT R. AND I. Co., INC.,
St. Louis, Mo.

Specifications:

1 part **CARNEY**
to 4 parts sand.

Cement Makers



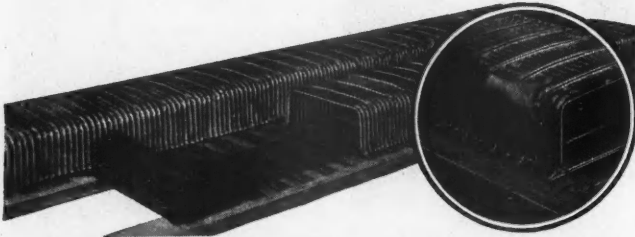
Since 1883

CARNEY
for Brick and Tile Mortar

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Better Concrete Floors

A PERFECTED concrete floor construction has recently been developed and is now being marketed by a company which has been a pioneer in the development of steel products for modern concrete and fireproof construction. This company foresaw the economies in time, labor, and materials that would result from a combination of metal



Roll of the New Pronged Lath Unrolled on Form Work; in the Circle Is Shown the Method of Springing Steel Form to Slip Flange Under Prongs on Side of Lath.

lath and steel forms whereby ceiling and floor construction could be made by one simple operation a truly integral construction.

There are two units in the new construction. The first is a lath designed to combine all the recognized qualities of ordinary lath with additional features of quick erection and minimized possibility of loss through defacing in handling. It is furnished in rolls 100 feet long and 2 feet wide with the ribs running the 2 feet width. Into these ribs, at the proper distance from each end, a prong is punched upward.

As the lath is rolled out on the form, the ribs and prongs are on the upper side. The second unit of this construction is a permanent type of ribbed steel. Flanges on this hook into the prongs of the previously placed lath, providing in the one simple operation of placing a permanent bond between the unit of floor construction and that of ceiling construction.

The advantages claimed for this construction are many, but first and foremost is the speed of erection, since no time is lost in making attachment of the ceiling lath to the floor forms. Furthermore, it insures an accuracy in spacing which has never been possible with other methods and materials. An absolutely true and straight concrete joist and a positive attachment of ceiling lath to the reinforced concrete structure is assured by the employment of this new development.

The engineers of the company point out that in this construction the ribs of the lath serve as ties for the arch, making it impossible to collapse an arch during the pouring of concrete. The prongs on the ribs of the lath provide a definite anchorage for the ceiling lath which, due to its rolled form, is free from irregularities, remains perfectly true and flat and, therefore, requires a minimum of plaster.



Removable Steel Clothes Posts

REMOVABLE steel clothes posts are a great improvement over the old fashioned wooden clothes posts of the past. These posts are made of galvanized, high carbon, steel tubing in two sizes, 1½-inch and 1¾-inch and stand 6½ feet above the ground. The post is filled with concrete, insuring ample strength to bear the weight of clothes or carpets.

The post is set into a socket, made in a separate piece. It can be easily slipped into the socket or removed, when through using, but



Steel Clothes Posts Set Into Sockets Can Be Removed at Will.

fits perfectly firm and rigid. The socket is 28 inches long, made of heavy steel tubing, and is driven level with the surface of the ground so that the lawn mower may be run over it. A driving cap is provided for the purpose. The socket brace has a plate attached to it which fits over the socket and prevents dirt from getting in when the post is not in use.

These posts are removed and entirely out of sight when not in use but, even when in use, are not unsightly. They will last indefinitely, many having already been in use for more than 10 years. The cost of these posts is quite reasonable.



This Device Saves Fuel

IT is conceded by authorities generally that the conversion of coal into heat by burning is a wasteful process. Only a small fraction of the theoretical heat units that the fuel contains are actually employed in useful work. The remainder is wasted. Probably the time will never come when a heating plant shows 100 per cent efficiency in the use of heat units, but a great improvement can be made and much of the waste under the present system is entirely unnecessary and can be prevented.

The combustion of coal is a dual or two-step process. The first step is converting the mineral carbon and oils in the inert fuel into a combustible gas. This step consumes heat. The second step is the burning of combustible gases produced. This step not only furnishes enough heat to continue the gasifying of more fuel, but it furnishes a surplus of heat for useful work.

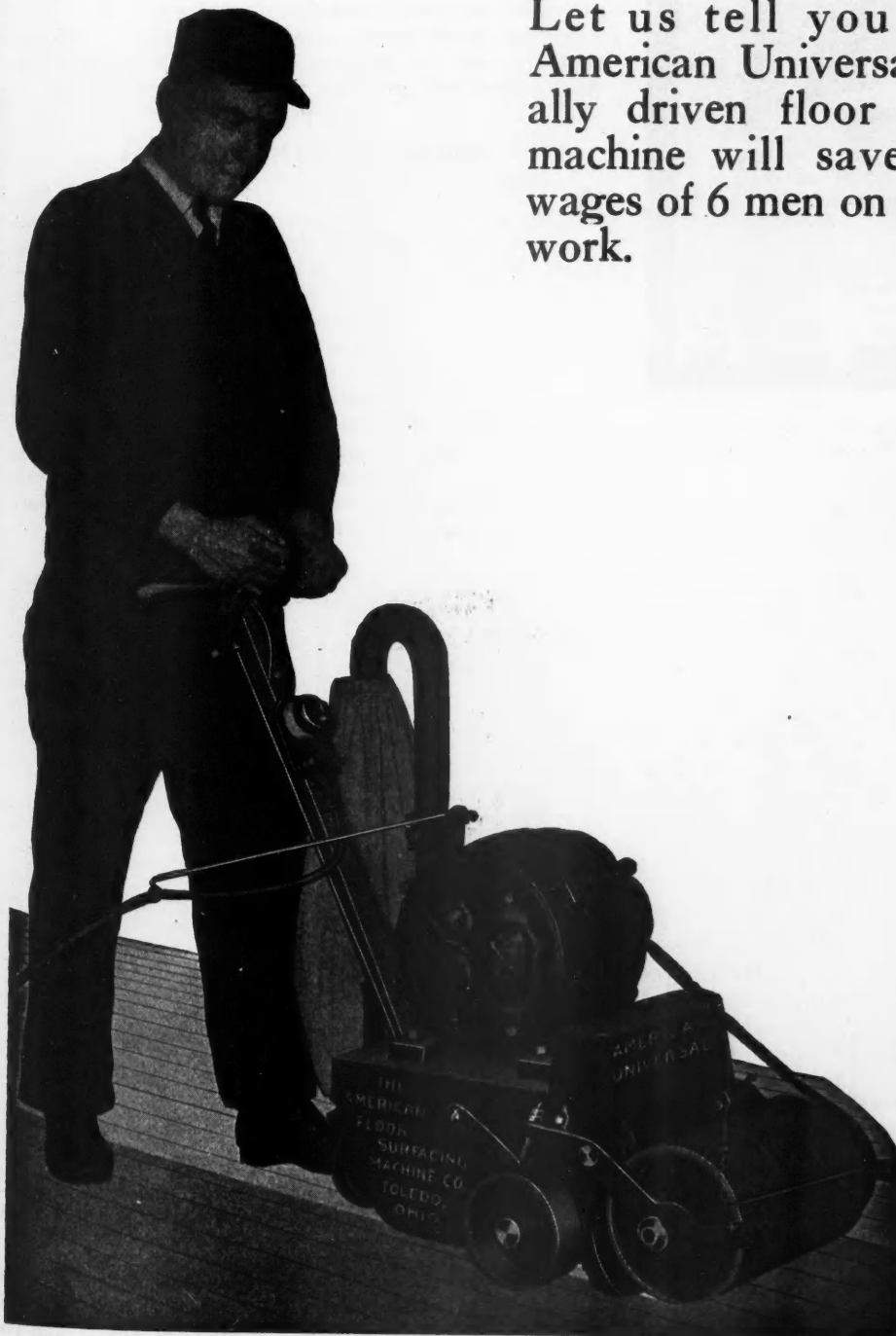
Most heating plants do a better job of gasifying fuel than they do of burning the gases after they have been formed. This is due to an insufficient supply of air (oxygen) at the right time and place, because the gases can not and will not burn without receiving an abundant supply of oxygen.

To meet this condition there has been developed, and tested in actual usage for several years, a novel device. This device is attached to the door of the fire box of a steam boiler plant or domestic hot air furnace. It automatically sucks in air from the furnace room, super-heats it and sprays it above the fire bed. This supply of hot oxygen, mixing with the unburned gases over the fire, causes them to burn with an intense heat instead of rolling up the flue and being lost. It is said that records of actual savings of fuel as high as 50 per cent are not unusual but the manufacturers of this device only guarantee a saving of at least 20 per cent on the ordinary fuel bill.

This device for new house installations should be valuable in increasing the salability and value of the house. It is also available for installation on old furnaces and should find a ready market because of its ability to increase the efficiency of heating plants and reduce the cost of heating.



This Method of Supplying Heated Air to the Fire Bed Increases the Efficiency of the Furnace.



Let us tell you how the American Universal electrically driven floor surfacing machine will save you the wages of 6 men on your floor work.

Write or mail this coupon today

The American Floor Surfacing Machine Co.,

515 So. St. Clair St., Toledo, Ohio

Please send me, without obligation on my part, full information about the "American Universal" Floor Surfacing Machine.

I am a building contractor.

I am interested in becoming a floor surfacing contractor.

Name.....

Street.....

City.....

State.....

The American Floor Surfacing Machine Company

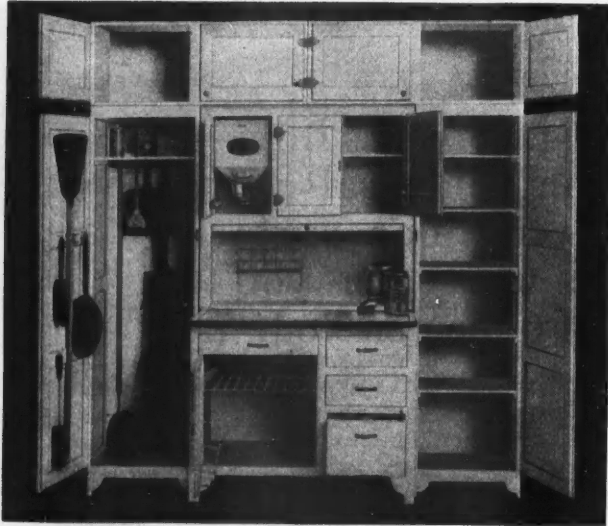
515 South St. Clair Street, TOLEDO, OHIO

The Originators of Floor Sanding Machinery

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Combination Kitchen Units

KITCHEN units which can be purchased and used separately or in any combination make possible a variety of arrangement to fit the requirements of any kitchen. Five units are shown in the illustration and these are designed to meet all the needs of the kitchen. They



Here Are Five Units, Which Can Be Combined in Any Manner Desired to Make Up a Complete Kitchen Installation.

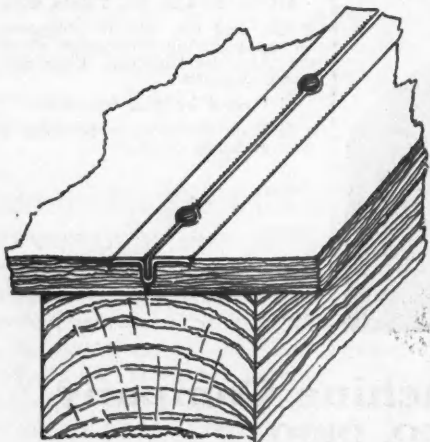
are a broom closet and a dish closet at the sides, two storage units above and the kitchen cabinet unit in the center.

These units are all of solid construction, not knock-down, and are supplied in either white or gray enamel. They are constructed throughout of seasoned and kiln dried hardwoods. The hardware is all heavily nickel plated and the enamel is waterproof. The side units will set flush with the sides of the cabinet which offers a working space 35 by 38 inches when the porcelain top is extended. The cabinet is fully equipped with a drop flour bin, metal bread box, six-piece spice set, glass sugar jar, with scoop and wire stand and trays, racks and holders for other equipment.



Economical Wall Board Fastener

AN inexpensive and highly efficient method of fastening wall board and covering the joints has been developed which eliminates the use of wood mouldings and other seam covering materials and permits satisfactory



This Sketch Shows How the Edges of the Binder Are Embedded in the Wall Board.

papering or other wall covering. This fastener is a thin metal strip $\frac{5}{8}$ of an inch wide and furnished in standard lengths of 8, 9, 10, 11, 12 and 15 feet. It is so formed that the edges embed in the wall board making a perfectly flat surface and a tight joint.

In application, the wall board is fitted to the wall with $\frac{1}{8}$ to $\frac{3}{16}$ inch spacing be-

tween boards and temporarily tacked with a few brads. The space along the edges is then moistened with a small brush dipped in water. This softens the material slightly allowing the fastening strip to embed itself flush with the surface forming a smooth air-tight joint. The strip, or binder, is then placed between the panels, nails are inserted and driven down. They are then hammered flush with a wood block furnished for the purpose.

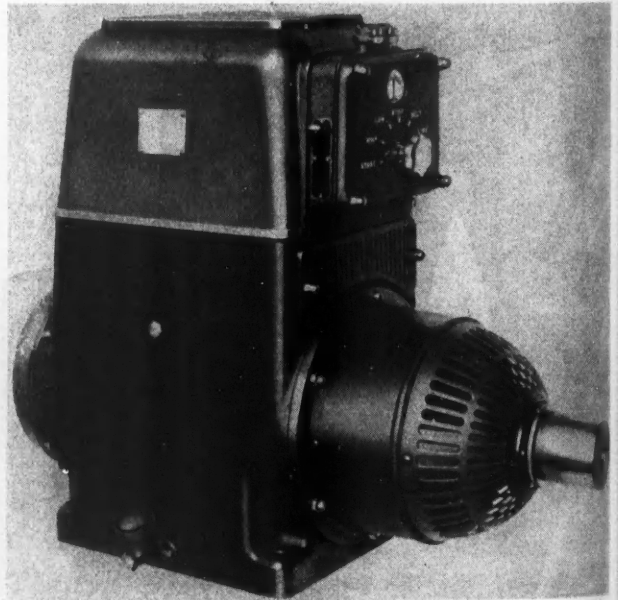
The binder strips are made in three shapes for a flat wall seam, inside corners and outside corners. The edges embedded in the board make the seams entirely air-tight and the wall paper can not crack as there is no shrinkage of materials. It is stated that finishing a room in wall board, with these metal binders, costs less than half the price of plastering and the work of applying wall board in this manner takes less time than nailing by other methods.



Perfected Lighting Plant

A NEW home electric power plant has recently been announced by a company which has for many years been prominently identified with home light plant development. According to the manufacturer it represents the result of years of research which has had as its objective the development of a plant incorporating every feature of ideal service for the home beyond public service lines.

A feature of this plant is its compact and simple design with fuel tanks, oil reservoir and cooling system all built compactly into the plant, making it completely self-contained and ready for quick installation. Every rotating part, with the exception of the belt pulley, is entirely enclosed making it safe for anyone to operate. At the same time every part is easily accessible.



This Home Electric Power Plant Is Compact and Simple and Gives Light without Flicker Even When Current Is Supplied Direct from the Plant.

A specially designed governor has been developed which is said to be so effective that the lights are entirely without flicker even when the current is supplied direct from the plant without the use of a storage battery. A "vapor" or "steam" cooling system affords clean, odorless combustion even when burning kerosene for which this engine is designed.

Plants of this type are built in sizes of 750 to 1,500 watts. Units of either size can be used either as direct lighting plants without batteries, or in the usual way with batteries.

Especially to carpenters are these things important

SMOOTH, fast, true cutting! A keen blade that follows the line. A tapered blade that clears the cut. A balanced saw that works with your arm.

More than any other man the carpenter needs that kind of saw.

It was for carpenters that Henry Disston worked out his first saw; trained his own saw makers; melted his own saw steel—

To give them a saw that *cut*,—without hacking, binding or chattering. A saw that saved their strength and improved their work.

Carpenters tried it; then chose it as their own. For 86 years it has stood every test of carpentry.

The nearest hardware store has your Disston. Any size. All shapes. Suit yourself . . . just be sure it's a Disston Saw.

Henry Disston & Sons, Inc.
Makers of "The Saw Most Carpenters Use"
Philadelphia, U. S. A.



Disston D-25. A straight-back narrow-bladed model for those who prefer a light, well-balanced saw.



Disston D-115. The finest hand saw Disston makes. Highly polished blade. Genuine carved rosewood handle. A beautiful and a practical saw.



Disston D-8. The favorite model of carpenters. The keen, sharp teeth cut into the work at any angle.

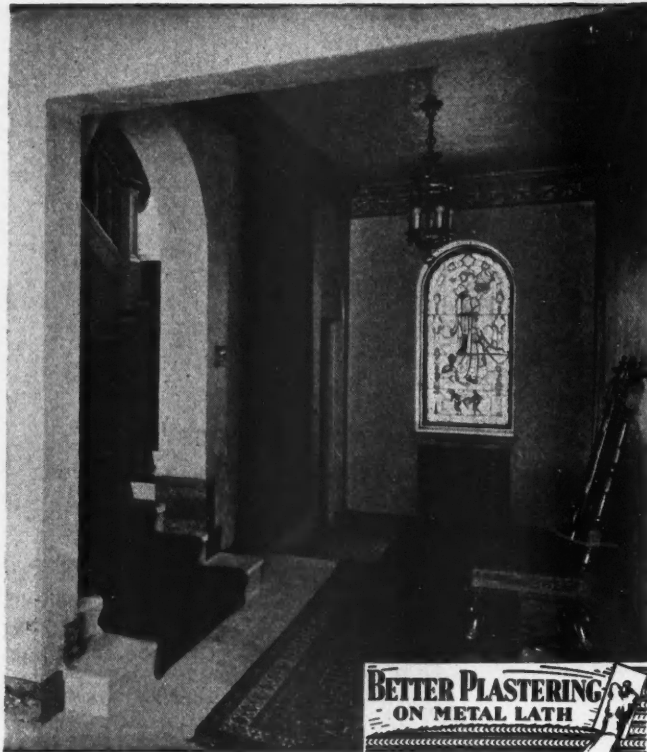
DISSTON

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

TRUSCON STEEL COMPANY

YOUNGSTOWN OHIO ~ WAREHOUSES AND OFFICES IN ALL PRINCIPAL CITIES

Foreign Trade Division, New York The Truscon Laboratories, Detroit, Mich. The Trussed Concrete Steel Company of Canada, Ltd., Walkerville, Ont.

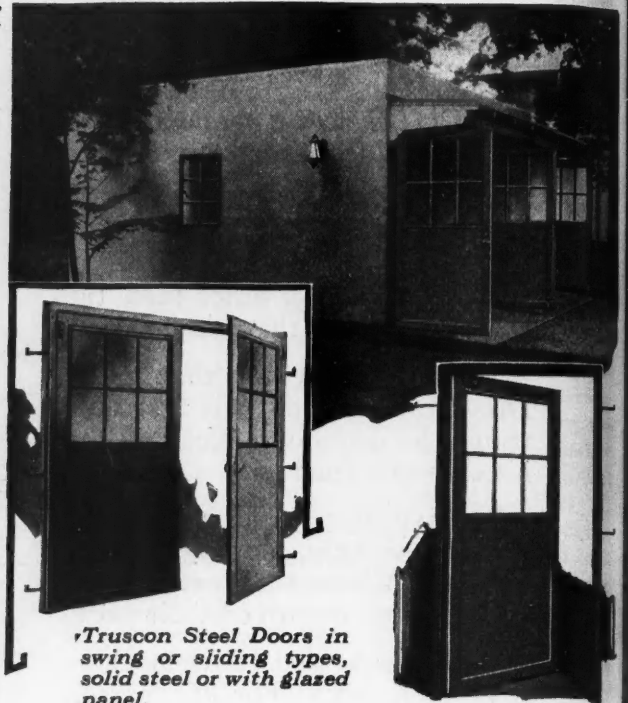


A Metal Lath for Better Building

YOU will satisfy your customers and make money for yourself by building walls and ceilings with Truscon 1-A Hy-Rib Metal Lath. Not only will this Metal Lath give you permanence, fire safety and beauty in your finished work, but you will find it easy to work with—a fast base for plastering and very saving of plastering materials.

Ask for our catalog

TRUSCON
1-A HY-RIB
METAL LATH



Truscon Steel Doors in swing or sliding types, solid steel or with glazed panel.

Steel Doors for Added Safety

YOUR building needs the additional fire protection that Truscon Steel Doors provide. Use these doors on garages, at alley, rear, and service entrances, in fire room partitions and wherever great serviceability and assured safety are demanded. Standard sizes to meet your needs. Easily installed—always satisfactory.

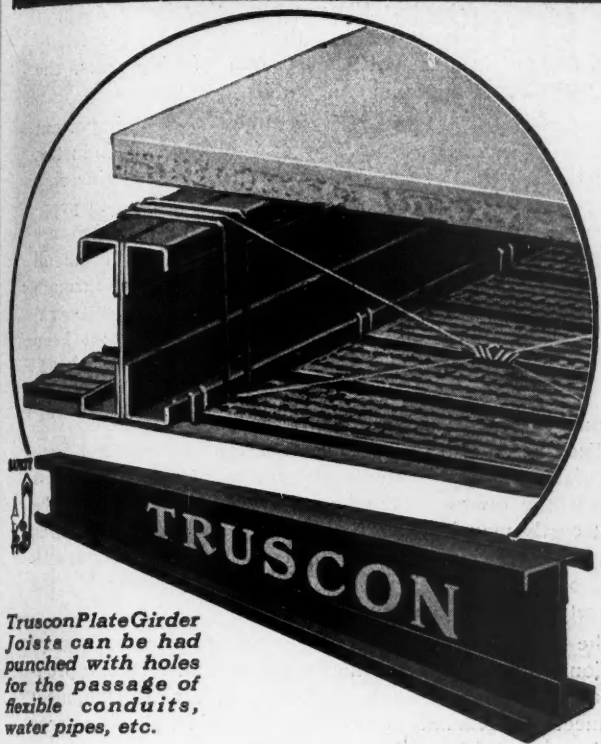
Ask for free catalog

TRUSCON
STANDARD
STEEL DOORS

TRUSCON STEEL COMPANY

YOUNGSTOWN OHIO ~ WAREHOUSES AND OFFICES IN ALL PRINCIPAL CITIES

Foreign Trade Division, New York The Truscon Laboratories, Detroit, Mich The Trussed Concrete Steel Company of Canada, Ltd., Walkerville, Ont.



Truscon Plate Girder Joists can be had punched with holes for the passage of flexible conduits, water pipes, etc.

Plate Girder Joist Floor Construction

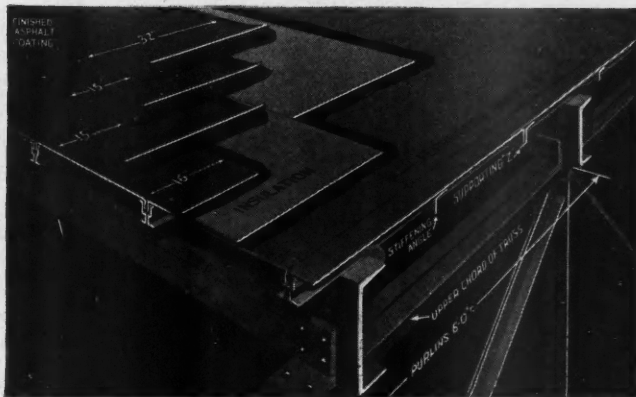
FIRE safety and permanence at low cost. Soundproof floors. Minimum dead weight. Swift erection in any season. Lighter supporting members. Simple construction. Cold weather building. Easy inspection. Elimination of form work. Minimum field labor. Erection of any number of floors at once. Easy installation of plumbing and wiring.

Catalog free on request

TRUSCON STEEL JOISTS

Truscon Roofs of Security (STEELDECK ROOFS)

For Light Weight and Permanence
(Patent Applied for)

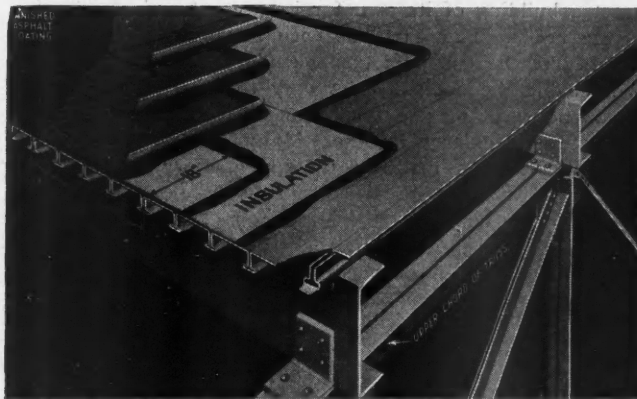


TRUSCON Ferrodeck

INSULATED & WATERPROOFED

Trademark Reg. U. S. Pat. Off.

IN Truscon Ferrodeck you secure a permanent roof construction that can be quickly erected in any season of the year without delay. Ferrodeck roof plates are fabricated with one-inch flanges along the two edges. Substantial I-shaped sub-purlins support the roof plates every two feet, providing unusual strength and rigidity.



TRUSCON I PLATES

INSULATED AND WATERPROOFED

TRUSCON I-plate roof construction offers in one unit both roof plate and I-shaped support members. Rapid construction, absence of nuts, bolts and rivets, fire-safety, weather-tightness, light-weight and low cost recommend this type of roof deck.

Catalogs free on request

NEWS of the FIELD

Overcoat Plan Campaign

DURING the past year the National Steel Fabric Company, Pittsburgh, Pa., inaugurated an Overcoating Plan for the improvement and preservation of houses by the method of overcoating with stucco, a field offering a market of probably 18,000,000 jobs, it is estimated and a market for many products and materials in addition to the metal lath made by this company. The 1925-26 campaign has proved so successful that the company will repeat it this year on a more elaborate and extensive scale.



Open New Building

THE Kimball and Prince Lumber Company, of Vineland, N. J., recently celebrated the completion of its new office and store building which is of the most modern and efficient design for this type of building. It is a two-story building fully equipped with wall cabinets, display boards and other aids to sales promotion, on the first floor, with offices above.



Occupy New Building

THE Wood-Regan Instrument Company, Inc., has completed and is moving into a new factory and general office building at South Orange, N. J. Because of the rapid expansion of its business the company has been forced to erect a building of its own for its present and future needs. Provision has been made for a large increase in manufacturing equipment that will enable the company not only to increase production on its present instruments, but also to materially enlarge its line. Many improvements have been made in the manufacturing equipment and these improvements will be reflected in the quality of the instruments manufactured. While the general offices, as well as the factory, are being moved to South Orange, an office will be maintained at 154 Nassau Street, New York City.



New Steelcrete Plant

THE Consolidated Expanded Metal Companies, located for 25 years at Braddock, Pa., are moving to their newly erected plant at Beach Bottom, W. Va. This new plant, they believe, is the largest and by far the best equipped expanded metal mill in the country, and will be devoted to the manufacture of metal lath, Steelcrete concrete reinforcement, Steelcrete armor mat for bank vault protection, Steelcrete road mesh, and, Steelcrete mesh for machine guards. The new offices of the company will be located at Wheeling, W. Va., in the Steelcrete Building.

Metal Lath Shipments Leave Construction Record Far Behind

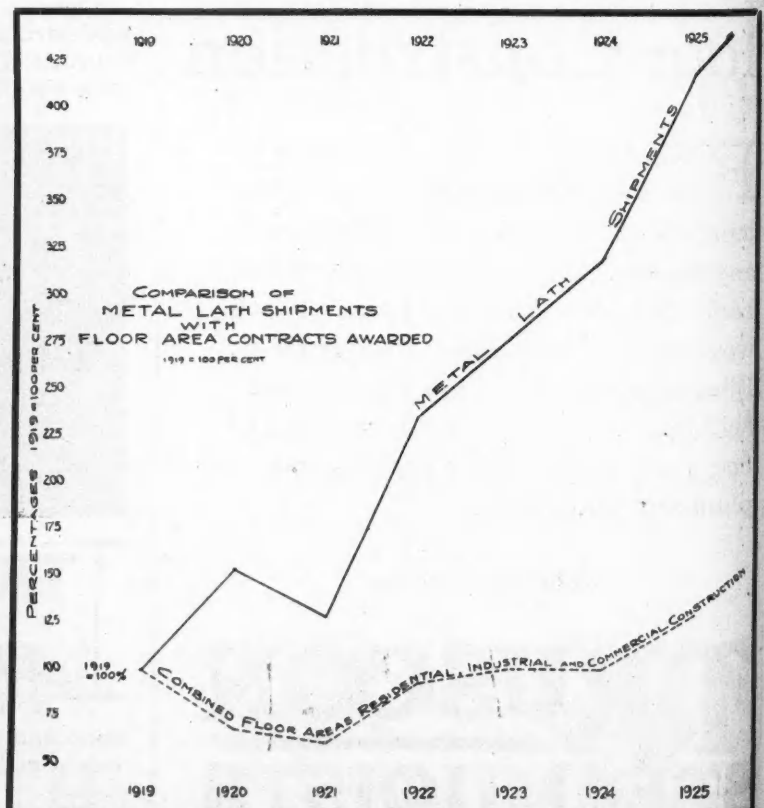
A STRIKING feature of the tremendous post-war building expansion is the record of phenomenal increase in the use of metal lath during this period. Starting with the shipments of 1919 at 100 per cent, that being the first fairly normal year after the war, there has been a practically uninterrupted increase with the curve of shipments, the first half of 1925 approximating to 425 per cent.

Promotional work through membership on important committees connected with the construction industry, through a well developed architectural and engineering service to assist those in the technical professions to properly specify metal lath, technical research to develop fire retardance, crack resistance and other properties of metal lath construction, all of these merchandised both through association office activities and through splendid co-operation by the individual member companies, have all been factors in the splendid achievement.

Fostering the Better Plastering Campaign first through national magazine advertising and later by nation-wide localized newspaper advertising, the Associated Metal Lath Manufacturers have widened the market for their products so that the owner of the humblest home, as well as the most costly mansion, heard the story of metal lath used as a base for better plastering in order to avoid plaster cracks and costly upkeep, as well as to increase measurably the fire retardance of the construction.

The producers of metal lath have long since made preparations to provide for an increased demand for their product and at all times have a substantial reserve of equipment to meet all demand of consumers, besides having large stocks of metal lath always on hand.

Such a rapid increase within a relatively few years in the use of a material that has been on the market for 30 years shows the value of modern promotion methods.



This Chart Shows in Graphic Form the Tremendous Increase in Metal Lath Shipments, as Compared with Building, Since 1919.



Blue Print Plans and 24 Page Book "How to Read Blue Prints" Sent FREE

Our gift to every man in the building game. Sent absolutely free. For we want you to see for yourself... at our expense how easily and quickly you learn to read blue prints... and can get the knowledge that will make you more money. Don't send a penny. Just mail the coupon.

The Book Tells How

"How to Read Blue Prints" is written in plain, every day English. It is easy to understand... and will prove to you immediately how quickly you can get the training that has given other men the chance to work with their heads... and to make more money than just the wage scale.

We know this is true. For 23 years we have been training men... in their spare time, at home... to advance and succeed in the building field. Many have now got good contracting or building businesses of their own. Many are salaried men, foremen or superintendents.

This book is really a Free Trial Lesson in Plan Reading... written by a practical building expert. It costs you nothing... will teach you how to read Blue Prints... and may point the way for you to big money. It will show you how easy our instruction is... how quickly you can become an expert... can get the practical knowledge that you must have to get ahead quick.

Another Book FREE

We will send you also a book about the Chicago Technical School for Builders. It is free, too. It tells you all about our method of training by correspondence. It shows you how you can make

your spare time pay you a handsome profit in a very short while. It tells all about our practical instructors... shows every branch and department of our Builder's Courses... gives you photographs of our men and departments... tells what others have done and what you can expect to do.

Chicago Technical School for Builders is one of the oldest and best equipped schools of its kind in America. Many big builders owe their first step to success to our training. Hundreds of practical men from the building trades attend our day and evening classes at our school for builders here in Chicago. You get this same training... from the same practical instructors... in your own home by mail.

Train by Mail

Go right on with your work. Your spare time... as little or as much as you wish... is all you need. Our practical lessons and actual blue print building plans come to you by mail. And the cost is little.

Send the coupon... today. It will bring you with the free Blue Print Plans and the two books, full information about the Chicago Technical School for Builders. Shows what we have done for hundreds of other men, gives the facts about their success. Tells how some became superintendents in a few months. How others established contracting businesses of their own. Gives all details of this practical builder's course with descriptions, photographs and illustrations.

Start now. It costs you nothing to find out what this practical builder's course is... and what it can do for you. If you want to make more money in the building game... get the facts about the Chicago Technical School for builders.

You Can Become a Building Expert

Plan Reading. Every man who has got very far ahead in any building trade can read blue prints. No man can expect to be a first rate foreman or superintendent until he knows what every line on a plan means and how to lay out and direct work from the architect's plans. By the Chicago Tech. Method you quickly learn to read any plan as easily as you read these words.

Estimating. Of course a man who wants to be a contractor or to hold a big job in a contracting organization must know how to figure costs of labor, material, and everything else that goes into any kind of building. The Chicago Tech. Course covers every detail of this important branch—shows you just how it is done from actual blue print plans.

Superintending. How to hire and direct men, how to keep track of every detail of construction as it goes on, how to get the work done in the least time at the lowest cost is also fully covered in the Chicago Tech. Builders' Course.

Also special courses in Architectural Drafting for builders, taught by practical men. These explained in Special Catalog "D" sent on request.

If You Live in or Near Chicago

Visit our School for Builders, open day or evening. 500 carpenters and builders attend each year. You can get the same training at home, by mail. Same plans; same lessons; same instructors. The Coupon brings all facts Free.

Mail the Coupon—NOW

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Please send me without obligation your Free Book and Blue Prints for men in the Building Trades. Send postpaid to my address below. It is understood that no salesman will call on me.

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MOTOR TRUCKS AND TRAILERS

Trucks Used in Handling and Distributing Materials

By E. K. ABBERLEY

Assistant Engineer of the Turner Construction Company

EDITOR'S NOTE—In the construction of the home office buildings of the Massachusetts Mutual Life Insurance Company, the Turner Construction Company, of Springfield, Mass., recently employed a method of handling and distributing building materials which was a distinct innovation and which proved to be highly efficient. This method, which employed seven light trucks, is fully described by E. K. Abberley, assistant engineer of the Turner Construction Company, in the article which follows.

IN deciding on the plan layout and methods for handling such materials as brick, mortar, partition tile, plastering materials, and items of like nature on the home office building of the Massachusetts Mutual Life Insurance Company, Springfield, Mass., the predominating factor taken into consideration was the size of the operation in plan.

The main office building was spread out over a large area, being approximately 292 feet by 388 feet overall, with two central courts each 87 feet by 157 feet. The building was only four stories above grade.

To handle these materials in the usual way, by the installation of hod hoists capable of carrying two wheel barrows each, would have meant the installation of six hod hoists, in order to reduce wheeling of barrows on the floors to a practical minimum.

Due to the nature of the building and small number of interior columns and corridor layouts, large open floor areas were available, and if a more mobile unit of transportation could be used on the floors, such as a small truck, longer hauls could be made economically on the floors.



Delivering Brick by Motor Truck on One of the Upper Floors of the New General Office Buildings of the Massachusetts Mutual Life Insurance Company, a Highly Efficient Method of Handling Materials Which Was Introduced by the Turner Construction Company.

International Tower at the Fort Wayne plant, one of the largest and most perfectly equipped factories in the automotive industry



International Trucks & Service

THE builder who is interested in good motor truck service will be interested by the letter below, from the Simons Brick Company of Los Angeles, one of the leading building material concerns on the West Coast. They own 26 Internationals and are standardizing on them.



THREE OF THE INTERNATIONAL TRUCKS IN THE SIMONS BRICK COMPANY FLEET

INTERNATIONAL HARVESTER TRUCKS will be profitable trucks for your hauling. The full line ranges from the Special Delivery and the Speed Truck to the 5-ton Heavy-Duty unit. Served by the world's largest company-owned truck service organization—120 branches in the United States.

Drop us a line for specific information.

INTERNATIONAL HARVESTER COMPANY
of America Chicago, Ill.
606 So. Michigan Ave. (Incorporated)

International Trucks & Service

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Simons Brick Company (Inc.)

MANUFACTURERS OF BUILDING AND FACE BRICK, ROOFING TILE AND HOLLOW TILE

MEMBER OF THE BUILDERS EXCHANGE
OFFICE TELEPHONE: MAIN 128
LOS ANGELES, BRICK BLDG. 207 7TH AND 8TH ST.
PASADENA: COB. BLDGMENT & COVER
SMOKE: ON MARKET ST.
MONTEBELLO: ON S.A. & S.L.R.R.
SANTA MONICA: ON PACIFIC ELECTRIC RR.
EL CENTRO: ON BUSINESS PACIFIC RR.
OFFICE: 128 WEST THIRD STREET
SANTA MONICA: ON PACIFIC ELECTRIC RR.
MONTEBELLO YARD: BRICK 2871
SANTA MONICA: ON PACIFIC ELECTRIC RR.

LOS ANGELES, CAL. April 17 1926

International Harvester Co.,
Los Angeles, Calif.

Gentlemen:

We are now using 26 International Motor Trucks in our business which is two-thirds or more of all the trucks we ordinarily use. We are gradually replacing our other make trucks with Internationals.

There are a number of good reasons for our standardizing on International transportation equipment, but the main one is the excellent service that these trucks have always given us. Our Internationals are always on the job.

We also like the attention you give your trucks after they are in use. The courtesy extended by the members of your organization in our past dealings is very much appreciated.

Yours truly,

SIMONS BRICK COMPANY (Inc.)

By *Walter J. Malone*
Superintendent





Truck Entering the Single Elevator Used for Raising the Materials for This Big Four-Story Building.

Working on this basis, the trucks had to be raised to the floors of the building either by ramps or elevators. In this particular case, it was decided to use an elevator, and a regular garage elevator, having a capacity of 5,000 pounds and a speed of 40 feet per minute was installed in an outside tower as shown in accompanying photograph. Experience indicates that it would be better, in future installations of this kind, to increase the speed of the car to about 80 feet per minute.

Comparison of the items involved in the regular hod hoist equipment and the elevator and truck equipment decided on, justifies the use of the latter.

In the use of hod hoists the following items are involved for each hoist:

Equipment : Hod hoist complete, including tower, platform, hoist, motor and wheel barrows.

Labor: Hoisting engineer, bell man, together with six men on the ground and six men on the floor.

For six units of this kind considerable expense would be entailed. On an average four of these hoists would be working all the time.

In handling materials with a hod hoist, materials would be received at the site in the usual manner. They would then be wheeled in barrow to the hoist, raised to the floors, wheeled on the floors, dumped, and hotted to mechanics.

Considering the elevator and truck method, the following is involved:

Equipment: Tower, elevator machinery and car, seven trucks. Also, there is an offsetting item of salvage on the elevator and trucks.

Labor: One hoisting engineer, seven chauffeurs, one



Truck Leaving the Elevator from Which It Carried the Materials to the Point Where They Were to Be Used.

service man, 12 men distributed on the ground or floor as required.

Using this method, materials were received on the job as usual, the trucks loaded on the ground, elevated to the required floor, driven to point required, materials dumped in piles and hotted to mechanics. On the return trip, trucks were loaded with debris and rubbish from the building, carrying a useful load both ways.

A fleet of seven small trucks, of a well-known make, kept this job in operation. These trucks were used also for general use about the job in addition to delivery of materials in the building. Four of these trucks had open seats and dump bodies; two had closed cabs and dump bodies, and one had closed cab and regular delivery body.

It was found advisable to have a man on the job whose duty it was to keep these trucks in repair.

It can be readily seen that, in comparing the operation of the trucks and elevator with the regular hod hoist equipment, there is a considerable saving in labor and handling of materials; and for jobs large in area and of a reasonable height, this method works out very satisfactorily.

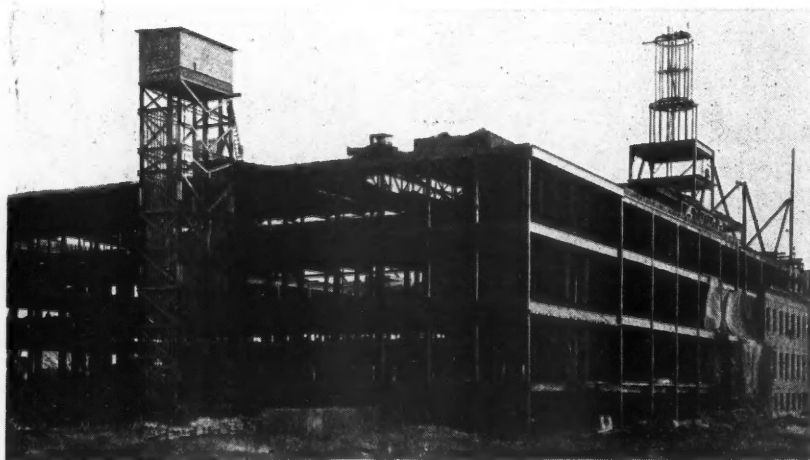


Wood Utilization Problems

AMERICANS can not expect to find in Europe ready-made answers to their wood utilization problems, according to G. M. Hunt, chief of the wood preservation section of the Forest Products Laboratory, United States Department of Agriculture, who has recently returned from a five months' investigation of European wood preservation methods. In his opinion the methods by which

Europeans utilize "everything but the rustle of the leaves," are applicable only where labor is far cheaper than it is throughout any considerable section of the United States.

"While it may be very comforting to reflect that other nations are as wasteful of labor as we are of wood," says Mr. Hunt, "the recognition of the fact does not excuse our waste of wood. It merely defines more clearly the nature of the improvements which we must make. Our problem is to learn how to save wood without wasting labor. Increasing costs of timber and lumber and freight will force us to be more saving as time goes on. But we must search out and develop opportunities to save wood and money and not wait to have them forced upon us, if we are to avoid becoming dependent upon imports for a large proportion of our wood requirements."



This Single Elevator Served in the Place of Six Hod Hoists Which Would Have Been Required if the Ordinary Method of Handling Materials Had Been Used on This Building.



Discovered real tire service by standardizing on Kellys

CHARLEROI LUMBER COMPANY
 Contractors and Builders
 WALTER BYERLY, MGR.
 CHARLEROI, PA.

March 27th, 1926.

Kelly-Springfield Tire Co.,
 250 West 57th St.,
 New York, N.Y.

Gentlemen:

We have been using solid truck tires for ten to twelve years. For a number of years we tried first one make and then another, trying to find a tire that would give consistent good service. We got some pretty good tires but it was not until we standardized on Kelly-Springfield Tires exclusively that we discovered what real tire service could be.

We are using Kelly-Springfield Tires on our entire fleet at the present time and getting from twelve to eighteen months steady hard service from them, which we consider all that could be expected. It is always a pleasure to say a good word for a good product and we can sincerely say that good word for Kelly-Springfield Tires.

Yours truly,

Charleroi Lumber Co.,
Wm. R. Lyman
 Treas.

KELLY-SPRINGFIELD TIRES

New Unit Steel Bridge Protects Sidewalk During Construction

ONE particularly interesting feature of the new Stevens Hotel in Chicago hitherto unnoticed on account of the importance of the main structure is the new standardized steel sidewalk canopy or bridge for the protection of the passing public. It has required 1,000 feet of bridge to protect the walk on all four sides of this new giant soon to be completed as the world's largest hotel.

Practically all cities have ordinances requiring that a temporary sidewalk protection bridge be erected over the sidewalk around the building site before the structure has been carried beyond the two floor level. Public opinion now demands that these structures no longer be thrown up of rough unsightly materials and uncertain design, presenting eyesores to the passersby.

To meet these dual requirements of safety and beauty, contractors and owners have been obliged to spend considerable money, for materials with very little salvage value, and on the erection and dismantling of the bridges. It appeared that if some form of standard steel supporting structure could be developed that would meet the varying conditions, a considerable saving would be affected. Mr. F. A. Davidson, a civil engineer and practical scaffolding expert, applied himself to the task for seven years. The result is a bridge which will save the contracting interests thousands of dollars in labor and materials every year.

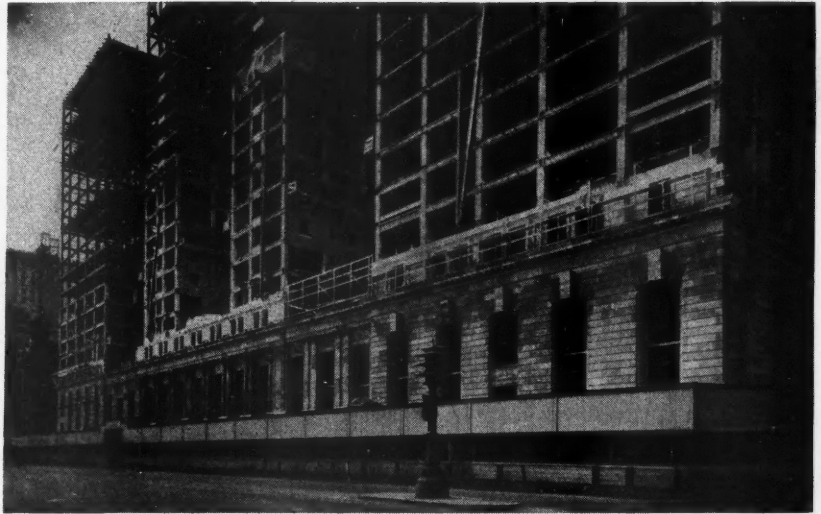
The cost of this protection is no greater than that required to put up even the crudest type of wooden structure. The bulk of the material is available for use on future jobs with just a nominal depreciation charge as opposed to the considerable loss entailed where wooden structures are employed. This equipment can be furnished on a rental basis to jobs as they come along.

Because conditions at each job site vary in a multitude of details, careful planning was necessary to develop a bridge that would give universal satisfaction. In order to make this type of structure practical, it was necessary that it should be constructed of standard units which could be erected

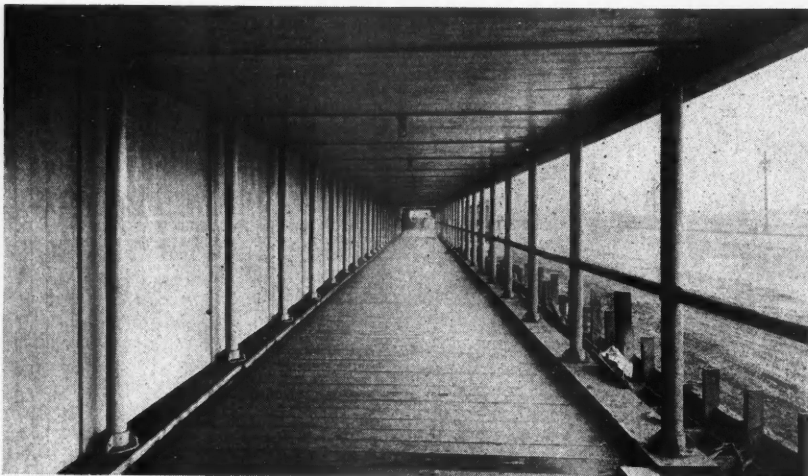
in such manner that the width of the passageway could be varied to suit conditions, that the distance between columns could be varied in a longitudinal direction to provide for obstructions, driveways, etc., and further, that the structure could be erected with equal facility on level or sloping sidewalks.

These conditions are met by the clamp arrangements which enable the various members to be fabricated to suit the actual requirements on the ground. In other words, there are no connections that require the drilling of bolt holes, etc. All of the parts are of steel which prevents breakage in handling, such as would likely occur in cast iron. The columns are 4-inch steel pipe and the supporting beams are 8-inch, 25½ pounds per foot, steel I-beams. The connecting pieces are 1½-inch steel pipe. On the steel I-beams a wooden nailing strip is bolted to provide for attaching the wooden beams.

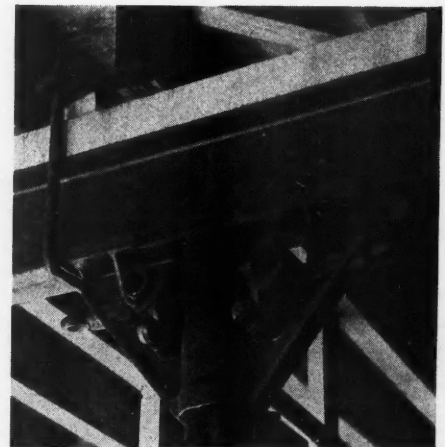
In general, this structure affords as good looking a temporary structure as can be obtained, and at a cost very much less than that of wooden structures.



For the 1,000 Feet of Bridge Required to Protect the Sidewalk During the Construction of the Stevens Hotel, Chicago, a New Steel Unit System Was Employed Successfully.



The Bridge Protected Sidewalk Made a Neat Appearance, Was Effectively Protected and the Cost of Protection Was Low Because the Material Was Not Wasted.



No Holes Need Be Bored for Bolts Are Replaced by a System of Clamps Adapting the Bridge to Any Building.

*for Economical Transportation***CHEVROLET**

Making Good in the Building Field, Too!

Each day brings to light some new record of the remarkable economy of Chevrolet truck units—some new measure of their amazing endurance and reliability in every field of activity!

The most recent evidence of the reasons underlying Chevrolet's ever-increasing popularity in the building field is supplied in a letter received from the Van Dien-Young Co., building material dealers in Santa Ana, California. They say:

"For quick deliveries of small lots of building materials, the Chevrolet 1-Ton Truck is completely satisfactory in every way. We expect to use it for several years to come—and will replace it with another Chevrolet when necessary."

If you're in the market for new or additional delivery equipment you can safely let the

experience of the Van Dien-Young Co. guide you in your purchase—because their success with Chevrolet trucks is typical of the satisfaction enjoyed by Chevrolet owners everywhere!

Providing such essential truck-type advantages as rigidly braced channel steel frame; extra-leaved rear springs set parallel to the road; oversize brakes; extra-strong rear axle; reliable semi-reversible steering control; positive three-speed transmission; powerful valve-in-head motor; water pump and combination pump and splash system of lubrication, the Chevrolet Ton or ½-Ton Truck can't fail to give you uninterrupted delivery service at low cost.

See your nearest Chevrolet dealer—get all the facts and figures—ask for a demonstration! Then you will understand why builders all over America are standardizing on Chevrolet.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Division of General Motors

½-Ton Truck (Chassis Only) \$375

1-Ton Truck (Chassis Only) \$495

Prices F. O. B. Flint, Michigan

World's Lowest Priced Gear-shift Trucks

Building Active on Coast

FRANK F. HASE, president of the C. H. & E. Manufacturing Company, has just returned from a five weeks' trip to the western coast and he reports that this section of the country is growing fast. The city of Seattle at the present writing is building 16 big buildings made up of moving picture houses, office buildings and hotels.

The West Coast is growing fast and this building program requires a great deal of machinery such as saw rigs, pumps and hoisting equipment. Mr. Hase reports that his business on the coast has more than three times doubled itself and he is shipping his equipment via New York and the Panama Canal to save the freight rate which is considerably cheaper than by railroad direct from Milwaukee to western points.

Mr. Hase further reports that building in Canada is on the increase, the cities of Vancouver, Calgary and Winnipeg having doubled in size in the last 12 years. He reports that his trip from a standpoint of business was very successful and that the people as a whole were ever ready to meet him in showing him their beautiful city.



Massillon Service in Canada

THE Sarnia Bridge Company, Limited, at Sarnia, Ontario, is furnishing the same service to the builder in Canada that the Massillon Steel Joist Company furnishes

the builder in the United States. This company manufactures Massillon bar joists, Massillon standardized steel roof trusses and the other Massillon products from Canadian steel to the same rigid specifications that are used in the United States plants. Its engineering department closely co-operates with the engineering departments of the Massillon Steel Joist Company and renders a complete service to the Canadian builder in preparing engineering drawings of buildings for the various Massillon products. ✦



Frank F. Hase, President of the C. H. & E. Manufacturing Co., Who Reports Great Building Activity on West Coast.

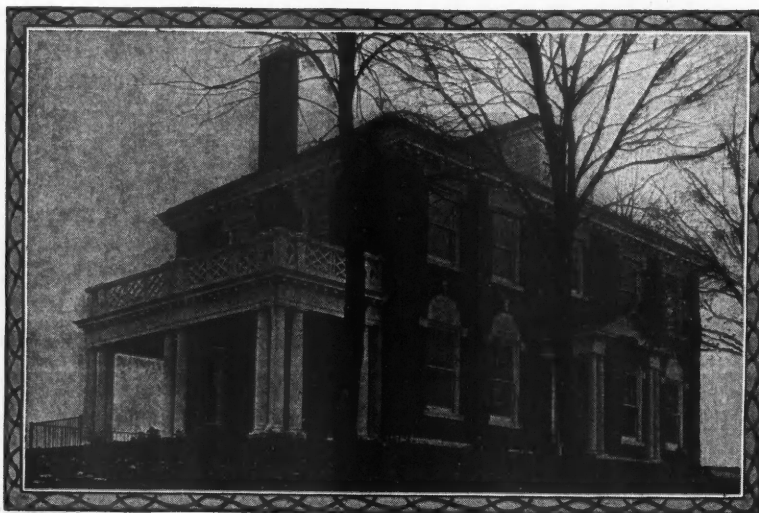
Introduce Improved Frames

THE Anderson Lumber Company, Bayport, Minn., has embodied in the window and door frames it manufactures a new feature which is the invention of Fred C. Anderson, president of the company. This invention consists of an improvement which enables the patentee to furnish a frame partly assembled as before but so constructed that the frame can be furnished not only as a standard, narrow blind, stop frame, but, without removing any of the parts, it can also be furnished as a wide blind, stop frame, for stud wall construction or as a brick veneer or solid brick wall frame. The

special construction on which this patent is granted makes it possible for these various types of frames to all be furnished out of one stock by simply adding standard common pieces of lumber from any lumber yard stock.

Beautifying the Old Battle Line

ATOP-MISSIONARY-RIDGE



COST IS SOON FORGOTTEN—QUALITY NEVER!

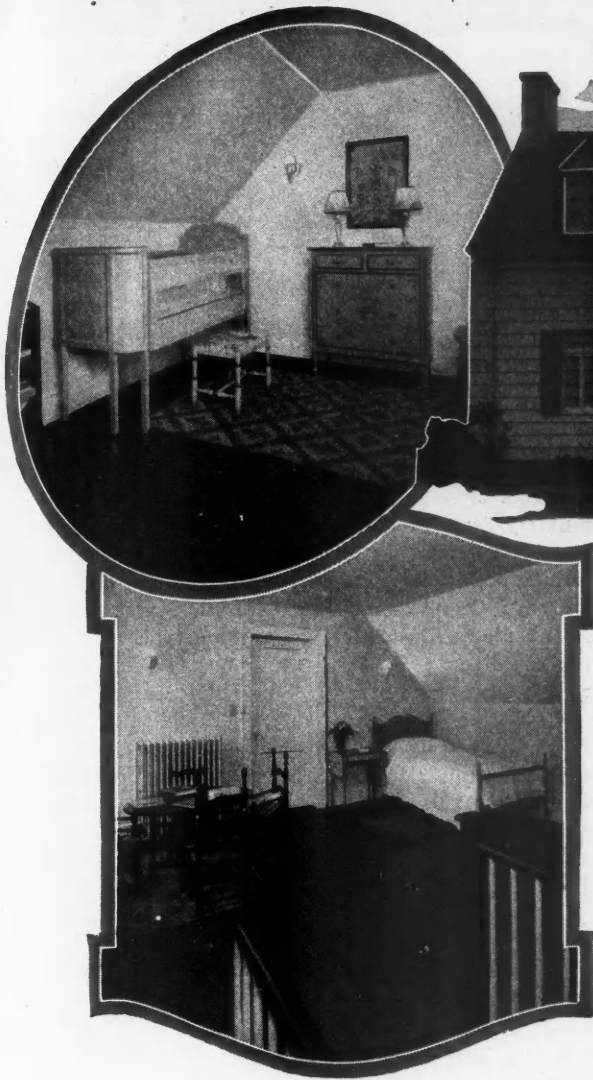
Architect—LOUIS BULL
Brick—CARLYSLE-LABOLD
DARK CHOCOLATE
Mortar Color—
PARAMOUNT CHOCOLATE 536

PARAMOUNT COLORS

in shades to harmonize with every make of brick.

Used by exclusive dealers thruout U. S. A.

THE LOOKOUT PAINT MFG. CO., Chattanooga, Tenn.



A gift to France—this model American home. Its floors are of Maple, Beech and Birch

A model American home for France—floored with Maple, Beech and Birch

Across the seas to France! This ten room model American house, with complete furnishings, has made the journey—a gift of good will from America.

FOR the floors of this interesting Colonial style structure, three popular woods were chosen—as representing the utmost in American flooring materials—Maple, Beech and Birch.

White Clear Maple Flooring—for one bedroom and the nursery. Red Clear Beech Flooring—for the dining room, the study and one bedroom. Red Clear Birch Flooring—for the living room, halls and one bedroom.

Maple, Beech and Birch offer the satisfactory answer to every flooring need. Maple in its natural color gives the airy golden color of captive sunlight. Beech and Birch, of warmer hue, lend themselves readily to color stains and are strikingly attractive when waxed or varnished.

All three woods are remarkable in qualities of wear. They will not sliver, splinter or develop

ridges. Their permanent smoothness makes them the easiest of floors to keep clean.

For lasting beauty and comfort, for utmost satisfaction in flooring—use Maple, Beech or Birch.

Let our Service and Research Department assist you with your flooring problems. Write for any of the following booklets you wish:

- Color Harmony in Floors
- New Floors for Old
- The Floors for Your Home
- How to Lay and Finish Maple, Beech and Birch Floors
- Three Native Hardwoods of Sterling Worth

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1053 Stock Exchange Building, Chicago

Guaranteed Floorings

The letters **MFMA** on Maple, Beech or Birch flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and ad-

here to manufacturing and grading rules which economically conserve every particle of these remarkable woods. This trademark is for your protection. Look for it on the flooring you use.

MFMA

Floor with Maple Beech or Birch

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Blaw-Knox Company, 605 Farmers Bank Bldg., Pittsburgh, Pa., has issued a wall poster illustrating its new Tru-Tye steel bridging and the method of application under different types of joist construction.

The Master Builders Company, Cleveland, Ohio, has prepared a new set of specification books on concrete hardeners and on concrete waterproofings for the use of architects, engineers, contractors and builders.

"Ship Model Making," by Captain E. Armitage McCann, published by The Norman W. Henley Publishing Company, 2 West 45th Street, New York City, is a practical book describing, with full scale drawings, how to make two of the now popular ship models. The author is an expert on old ships and model making. Price \$2.50.

The Century Electric Company, 1806 Pine Street, St. Louis, Mo., offer a series of pamphlets and catalogs covering their products which include a complete line of alternating current motors and a complete line of alternating and direct current fans.

"Concrete Masonry Construction" is the title of a new booklet published by the Portland Cement Association, 33 West Grain Avenue, Chicago, containing concise information about methods that architects, contractors and builders everywhere are using.

Van Kannel Revolving Door Company, 250 West 54th Street, New York City, has prepared a "Manual of Revolving Door Construction and Architectural Design with Architects' Standard Specifications," issued in a folder for convenient filing.

The "White" Door Bed Company, 130 North Wells Street, Chicago, has prepared a large folder showing its kitchen cabinet units with plans and specifications.

"The Story of Oak Floors" is a pamphlet published by the Oak Flooring Bureau, 828 Hearst Bldg., Chicago, setting forth much information on oak flooring and illustrating in color various modern finishes.

"Your Big Market for Cornell" is the title of a booklet published by Cornell Wood Products Company, 190 North State Street, Chicago, telling the many ways in which its wall board may be used in homes and other buildings.

The Chain Belt Company, Milwaukee, Wis., offers two pamphlets on its line of mixers under the titles "Rex Mixers" and "More Yards Per Day."

"A Common Brick" is a bulletin prepared by The Common Brick Manufacturers' Association, 2121 Guarantee Title Bldg., Cleveland, Ohio, explaining in detail the distribution of cost in the manufacture of common brick.

The Safety Stair Tread Company, Wooster, Ohio, offers two pamphlets descriptive of their "Wooster Security Nosing" and "Wooster Safe-Groove Stair Tread."

The Dodds Granite Company, Milford, Mass., has prepared color plates illustrating the various types of granite which it supplies.

The American Engineering Standards Committee, 29 West 39th Street, New York City, has published its 1926 Year Book containing a complete report of the past year.

The Woodworkers' Tool Works, 222 South Jefferson Street, Chicago, offers a catalog of its various machines and accessories, in handy pocket size.

Todhunter, 414 Madison Avenue, New York City, offers two booklets under the titles "Lighting Fixtures" and "Early American and English Lights," which catalog the hand-made fixtures manufactured by this company.

Build and Sell Homes in the Suburbs Now —Don't Wait for Sewers

"Out to the suburbs," is now the nation-wide cry. The city dwellers want plenty of lawn, green grass, garden, orchard, sunshine and blue sky. Folks are tired of living where they daily toil for their bread and butter.

People realize that it is not necessary to live in the city nowadays just for the sake of city comforts and conveniences. Modern homes with sanitary plumbing are now easily procured anywhere.

The problem of sewage disposal is perfectly solved with the safe, modern, economical

San-Equip Septic Tanks

for all unsewered districts. Don't let lack of sewers worry you.

San-Equip Septic Tanks follow U. S. Public Health Service design. Thousands are in use. No failures. Fully guaranteed. Easily installed.

Write for Our Free Plan Sheets

Sell San-Equip Septics with the lot or use our free plan sheets to help you sell. Our advertising is telling more than half your prospective home buyers about the San-Equip idea of sewage disposal.

San-Equip Septic Tanks are rust-proofed copperoid iron tanks—correct design—water tight—unbreakable—ready to connect.

Look one over at our risk. Prompt shipment from warehouse near you.

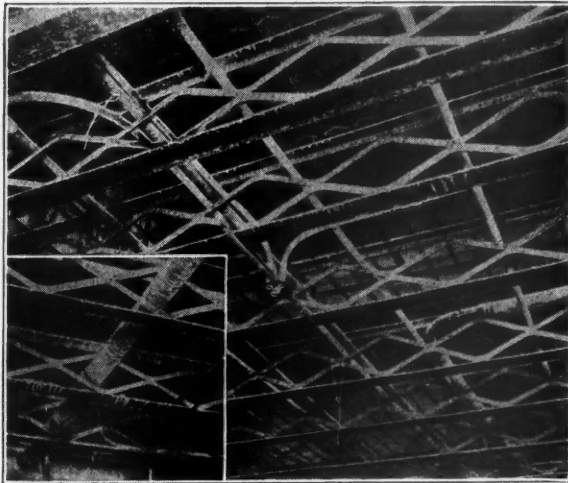
CHEMICAL TOILET CORPORATION

941 FREE STREET, SYRACUSE, N. Y.

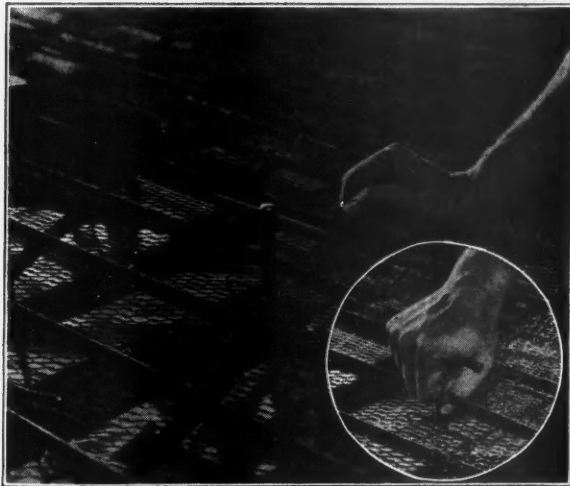




The light weight and sturdiness of the Bates-Truss Joint makes erection easy and cheap, and practically eliminates the possibility of damage in handling.



The convenience of running pipes and conduits through Bates-Truss Joists is an important feature of this open web truss.



The Patented Bates system of lath attachment provides a quick rigid anchorage method, requiring only a small, single, easily manipulated locking wrench tool.

BATES-TRUSS JOISTS

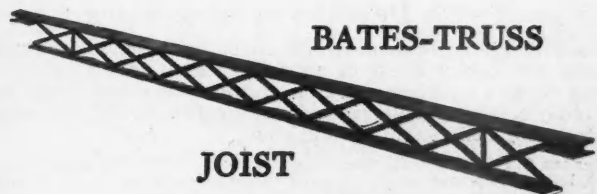
THE Bates-Truss Joist is an expanded open web lattice truss of one piece of steel. Rivets, bolts or welds are not relied upon in stress of shear or tension. Welds are employed only as tacking to hold the stiffener rods and bearing plates in position. Architects and engineers will readily appreciate the many advantages of this one-piece joist and its open web.

Bates Joists are furnished in standard sizes, 8 inches to 18 inches in depth, and in lengths up to 35 feet. Each joist has an 8-inch variable length.

The expanded open truss web permits cheap and easy stringing of pipes and conduits. Reports made by electrical and plumbing contractors show, from actual experience, that this feature of the Bates-Truss Joists is of great importance. The crisscross lattice truss permits carrying of pipes and conduits at three levels and seldom requires hangers or bridging for support.

Your inquiries will have our careful and prompt attention.

The expanded section is covered by basic commodity and process patents, owned, controlled and operated under exclusively by this company.



Bates **E**xpanded **S**teel **T**russ **C**o.
 General Offices and Plants
 EAST CHICAGO, INDIANA, U. S. A.

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

"Clinton Wire Lath" is the title of a very complete "handbook for architects, builders and plasterers, containing descriptions, drawing, tables, methods and specifications relating to furring, lathing and plaster, published by the Wickwire Spencer Steel Company, 41 East Forty-second Street, New York City.

"The Saw Kerf," is a new periodical, published quarterly by E. C. Atkins & Co., Indianapolis, Ind. The first issue is dated July, 1926. Its purpose is to help the company keep in touch with its many friends in the industry.

"WindoWalls," house organ of the Detroit Steel Products Company, Detroit, Mich., is an interesting monthly periodical containing much information of value to all who are interested in building.

The Domestic Engine & Pump Company, Shippensburg, Pa., has published three bulletins, No. 25-T, on "Domestic Trench Pump Units"; No. 25-A, on "Portable Air Compressor Units," and No. 26-H, on "Dependable Hoist Units."

The Delco-Light Company, Dayton, Ohio, presents a booklet of "Model Kitchens as Submitted in the Frigidaire Competition," containing some thirty or forty designs considered worthy of publication.

The Brasco Manufacturing Company, 5025 Wabash Avenue, Chicago, has prepared two special catalogs, No. 31 and No. 32, covering in interesting and attractive form the "Brasco Standard Construction" and the "Brasco All-Cop-per Construction" store fronts.

The C. F. Pease Company, 813-821 North Franklin Street, Chicago, offers Catalog M-26 of its blueprinting machinery and blueprinting accessories of all kinds.

The Republic Brass Company, Cleveland, Ohio, has published two very attractive booklets, "When Beauty Weds Utility" and "Modern Conveniences That Insure Your Income," illustrating and describing its bathroom fixtures.

The Deming Company, Salem, Ohio, offers two booklets on Deming water supply installations in golf and country clubs, private estates and summer homes and its Catalog G of Deming water supply systems.

"Anchor Steel Buildings," is a handsome booklet prepared by the Anchor Corrugating Construction Company, 145 West Forty-first Street, New York City, showing the application of its products in buildings of all types.

"Hitchings' Ventilating Devices," is Catalog No. 8 of the Hitchings & Co., Elizabeth, N. J., covering its ventilating devices for all types of building.

"J. & L. Junior," is a complete booklet of information and tables relative to the use of the new structural steel beams being manufactured by the Jones & Laughlin Steel Corporation, Pittsburgh, Pa., for all construction uses, especially for floors and roofs of office buildings, apartments, dwellings, garages, schools and similar buildings.

The Herman Nelson Corporation, Moline, Ill., has prepared a very handsome book, under the title of "Herman Nelson Invisible Radiators," for engineers and architects. It is beautifully illustrated in color. A smaller "Mechanical Data Book" is being distributed among the trade and to the general public.

"Lammert Oil Burning Equipment" is fully covered in Catalog No. 16 of the Lammert & Mann Co., 215 North Wood Street, Chicago.

The Silent Automatic Corporation of Chicago, 159 North Michigan Avenue, Chicago, has prepared two attractive pamphlets illustrating its oil burners.

The Truscon Steel Company, Youngstown, Ohio, offers a revised catalog of "Truscon Permanent Building Products" containing twenty-eight pages of carefully compiled data for dealers and builders.



What it means to you

to paint with DeVilbiss spray-painting equipment

For years DeVilbiss equipment and organization have been outstanding in character and completeness of service rendered to the contract and other painting fields. . . . These years of most extensive experience are combined with today's greatly enlarged and unequalled DeVilbiss engineering and manufacturing facilities in serving you.

Consider the full value of such experience and production facilities to you. . . . DeVilbiss spray-painting equipment enables you, with absolute certainty, to do an improved quality of work—to do faster painting and greatly increase earnings—to have the best possible working outfit and a more satisfied crew of painters.

Further facts about DeVilbiss equipment and organization, and what they offer to you, will be gladly mailed. Address—

THE DEVILBISS CO.

238 Phillips Ave.

TOLEDO, OHIO

New York
Chicago
Detroit
San Francisco
Cleveland

DeVilbiss
Spray-painting System

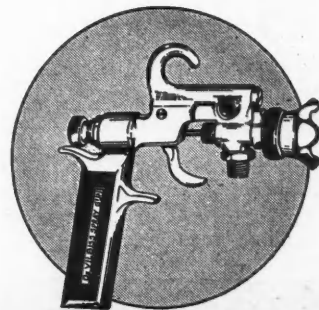
Indianapolis
St. Louis
Milwaukee
Minneapolis
Windsor, Ontario

The DeVilbiss Spray Gun

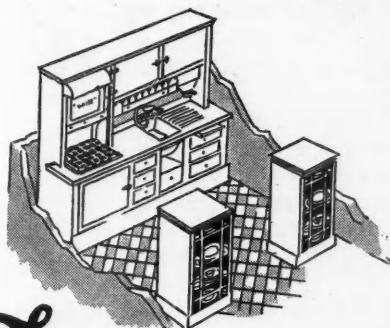
The Type A DeVilbiss Spray Gun is the biggest single development ever brought out for painting the modern, improved way. . . . It is a DeVilbiss quality product throughout.

All nozzle parts are self-centering, insuring a permanent perfect alignment of nozzle and the production of a non-splitting and correct spray. . . . With this and the Gun's many other unparalleled, exclusive mechanical and working features, a wider range of work can be done and far greater results achieved in the application of paint, varnish and lacquer materials.

The design and construction of this DeVilbiss Spray Gun make for the simplest possible operation, cleaning and care.



Let us show
You how
"WHITE"
BUFFET CABINETS
make every foot
pay



The "WHITE" Buffet Cabinet

With
Refrigerator

Architects and Builders:
Pin this to your Letterhead

"White" Door Bed Company,
130 N. Wells St., Chicago.
Give me full information (without any
obligation) about:

- "White" Buffet Cabinets
- "White" Door Beds
- "White" Kitchen Cabinets
- "White" China Cabinets
- White Ironing Boards

for:

- Apartments
- Homes
- Hotels

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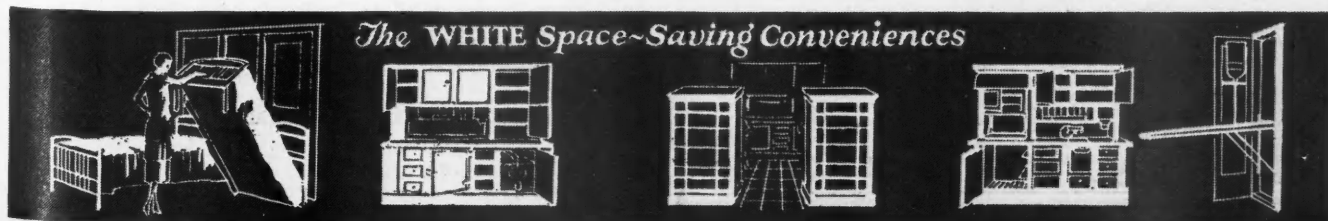
A COMPLETE kitchenette in a single unit!
The "White" Buffet Cabinet combines a
range, a refrigerator and a sink with all the
regular features of a kitchen cabinet.

Builders and Architects report that the
"White" Buffet Cabinet saves on building
costs and also makes rentals easier. It ap-
peals to every woman. Its compactness and
labor-saving features make any kitchen attractive.

Let us show you how "White" Buffet Cabinets
will fit your plans. Check and send the coupon
for catalog and full information.

The "White" Door Bed Company
130 North Wells Street ~ Chicago, Ill.

Sales Agents in the Principal Cities



Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

"Flooring Excellence for 40 Years" is the title of a booklet published by The Wisconsin Land & Lumber Company, Hermansville, Mich., containing interesting information on the hardwood flooring manufactured by this company.

The U. S. Department of Agriculture has issued a bulletin, Circular 393, on the subject of "Industrial Outlets for Short Length Softwood Yard Lumber."

The Mueller Steam Specialty Co., Inc., 502 West 126th Street, New York City, has published a new catalog, No. 22, covering its line of specialties for steam, water, oil, air and gas.

"Early English and Colonial Hardware" is the title of a new catalog prepared by P. & F. Corbin, The American Hardware Corporation Successor, New Britain, Conn., describing its line of period hardware formerly supplied to architects and others and now being offered to the country at large.

Frank S. Betz Co., Hammond, Ind., has issued a booklet describing its "Whitekraft Kitchunits" and showing their space economy in the kitchen.

The Chain Belt Company, Milwaukee, Wis., has published an "Instruction Book and Parts List for 27-E Rex Mixers" listed as Bulletin No. 142 and also a catalog, No. 143, covering the Rex 28-S mixer.

The Portland Cement Association, Chicago, has published a very handsome booklet entitled "Town and Country Houses of Concrete Masonry" which illustrates many beautiful examples of homes of this type.

The Duro Pump & Manufacturing Co., 537 East Monument Avenue, Dayton, Ohio, has issued two pamphlets on its water softeners and water systems both of which are fully illustrated.

"Sanitary Sewers" is the title of a book just published by the W. S. Dickey Clay Mfg. Co., 111 West Washington Street, Chicago. It is a very handsomely gotten up publication and a complete treatment of the subject covered.

"Wrought Iron of Distinction" is the catalog of The Florentine Craftsmen, 45 East 22nd Street, New York City, manufacturers of hand wrought fixtures in period designs.

The Zapon Company, 247 Park Avenue, New York City, has prepared a booklet in form to fit the A. I. A. filing system, covering Zapon architectural specifications for odorless brushing and spraying lacquers and lacquer enamels for finishing interior surfaces.

The Coburn Trolley Track Mfg. Company, Holyoke, Mass., has issued a very complete new catalog, No. 140, of its sliding door hardware.

The Consolidated Expanded Metal Companies, Braddock, Pa., have published a Condensed Catalog of Steelcrete Products, including metal lath, corner beads, channels and wall ties.

The "White" Door Bed Company, 130 North Wells Street, Chicago, has prepared a catalog for A. I. A. filing covering "White" door beds and space saving conveniences.

The Penn-Greg Manufacturing Company, 809-811 University Avenue, St. Paul, Minn., offers a pamphlet illustrating and describing its complete line of "Mailo-Box" built-in mail boxes.

The Copper & Brass Research Association, 25 Broadway, New York City, has published a very handsome book on ornamental store fronts and building entrances in bronze with examples of modern American design and craftsmanship.



These HEAT WAVES show how the heat RISES and ESCAPES through the roof and walls of your house

That's what makes the snow melt so fast on your roof. Do you like to buy coal to melt snow? This is sheer waste, and you can stop it by insulating the roof and walls of your house with

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You can lay Quilt under your shingles, siding, tiles or boarding, or between your studs or rafters or under your attic floor. It will save enough coal to pay for itself in two or three Winters, and keep on saving heat and doctor's bills and making you comfortable as long as the house stands.

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They are in universal demand—easiest to apply and the most satisfactory spring hinges made.

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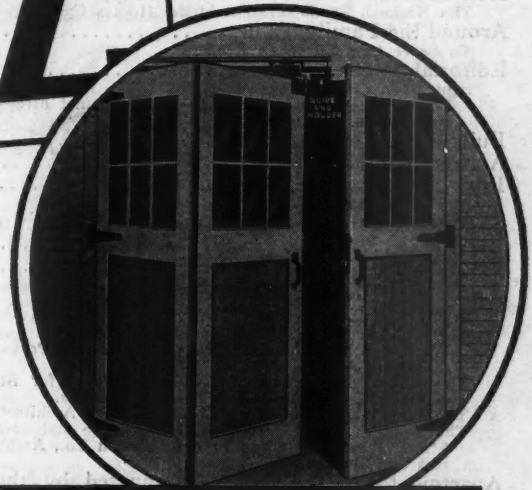
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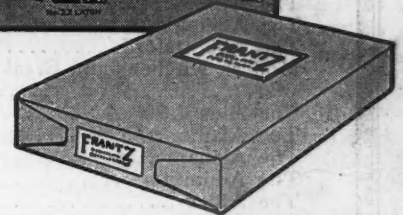
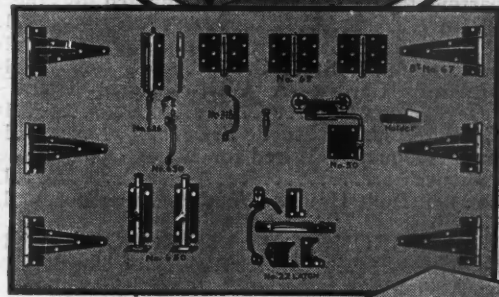
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FRANTZ Hung Doors

Open and Close Easily —Under All Conditions

The FRANTZ Red Label and Sign in Authorized FRANTZ Dealers' stores is your best guide to guaranteed quality and dependability in Builders' Hardware. Don't let anyone hurt your reputation by foisting off inferior hardware on you. Assure yourself and your customers a square deal and be sure of getting your money's worth by trading with FRANTZ Dealers or insisting that your regular dealer furnish you FRANTZ Guaranteed Builders' Hardware.



Complete E-Z Set Packed in This Strong Fibre Box

3-door set includes hanger and bolts; 3 pairs 8 in. No. 67 hinges; 3 offset butt hinges chain bolt; 2 foot bolts; chain pull; latch; 2 padlock eyes; all necessary screws; socket wrench; end stops for track; directions.

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