

HOW TO ESTIMATE.

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IN pursuance of the announcement made to contractors in the CANADIAN ARCHITECT AND BUILDER for October, I present to the reader the first of a series of articles designed to instruct the contractor in the method of preparing estimates on an accurate basis. The quantities herewith furnished have been taken with the greatest care and accuracy from the accompanying design and specification for a residence, and consequently are reliable. They give the actual materials in the building when completed, and the method by which the quantities have been arrived at. No allowance has been made for what is termed "waste"; this has to be considered by the contractor in his pricing of the several works. No attempt has been made to affix prices, as these vary so widely in different localities. The contractor should be familiar with prices in his own locality. The adoption of this system would place all contractors on equal footing so far as the preparation of their tenders is concerned, and would do away with all guess-work.

SPECIFICATION.

EXCAVATOR, MASON AND BRICKLAYER.

Excavate the ground as required for the cellars, and foundation of walls, chimney breasts, gazed pipe drains, etc. All vegetable mould to be put to one side for future use as directed. Fill in and ram and use the superfluities earth in terracing and leveling the lot, or cart away, as may be directed. The excavation to be 9 in. larger on all sides than the building, and no filling to be done till the stone walls are plastered outside and inspected. The drains marked G. P. on plans to be executed in with the best vitrified salt glazed pipe (Scotch or American), laid to proper fall as may be directed, jointed in cement, with all necessary bends, junctions and traps complete. Connect with sewer in street, contractor paying all fees. Put McGuire's sowing cut trap as shown, pipe from same to be carried to within 18" of surface and covered with stone flag. (A) Sewage drains inside of building will be of iron as per plumbers' specifications. Lay 3" common tile weeping drains as shown properly graded and connected to main drains behind running traps as shown. Foundation walls to have footings of broad, flat stone 6" thick, projecting 4" on each side of wall above, and no stone to be less than half the total width of footing. The walls to be carried up to the height of lowest level of floor or cart away, as may be directed. Approved stone of the best quality, laid in the best prepared mortar, well built and bonded together, and having the joints on each side neatly struck with the trowel; the portion showing above ground and where lined is to be of brown Credit Valley courses in stone, neatly tape pointed in brown mortar, and having one border to at least every superficial yard of wall. The joints to be tooth chiselled and to show a narrow draft on outer face. Plaster or portage outside of foundation walls from footings to finished ground line with 3/4 Portland cement mortar. None but hard bricks will be allowed on the premises. Brick walls in basement to be built of hard clinker bricks, with a neat struck joint. Build in all brick walls in basement a double course of roofing slate on top of footings 1" wider than wall to prevent rising of damp. Pier carrying front steps to be of hard clinker bricks on stone footings. Pier carrying front steps to be of hard clinker bricks on stone footings. The wall under side of plinth to be carried up in brickwork of best hard, well-burned bricks laid in best prepared mortar. Projecting bays to be tied to main walls at every 5th course with stout hoop iron band carried well into walls. Provide four (4) wrought iron straps 2"x1/2" to be forked and built into brickwork, and well spiked to studding of front where prepared for tiles. The walls to be faced with the very best selected Carlton or other equally approved red bricks, selected of dark color, true and straight, laid in English bond, and finished carefully with a best tool joint in mortar of best quality. Color of mortar to be of equally approved dark brown mortar stain; bricks to be well wetted. On completion of gutters, thoroughly clean down with acid. Inside walls of back porch to be faced with white bricks finished with neat head tool joint. Turn relieving arches of at least two rings over all openings of doors, windows, &c., and neat cut and pointed arches at openings as shown. Build in strips for battens at a distance of 2 feet in height, in all outer walls and wherever else desired—strips to be provided by the contractor. Be filled on all walls to underside of floor and roof boarding, making all spaces thoroughly tight and weather proof. Turn proper arches over fire place openings on 2 1/2"x1 1/2" wrought iron chamber bar, all flues to be formed circular 9" diameter, carefully built round moulds 3 ft. long, which are to be drawn up a few inches at a time as the work proceeds. Provide and build in proper galvanized iron collars to one flue in each room (except those having fire places). Flues connected with fireplaces to have proper iron soot doors in iron frames. Form ash dumps from ground floor fireplaces as shown, having iron soot doors set in cast iron frames. Leave 9"x12" opening into vent flue near ceiling of kitchen, and 7" diameter into same flue near ceiling of bath room. Chimneys to be carried up in brickwork of uniform color with projecting courses for caps. Bed in mortar all bond timbers, plates, etc., and build in iron collars to all chimneys, frames, cut stone and other work required to be set in masonry or brickwork. Support foot of iron soil pipes with 9"x9" brick pier, three courses high. Form substratum of concrete floor with a 6" layer of clean broken stone chips, pounded flat and level. The entire cellar floor to be laid in concrete 3" thick, of Portland cement, sharp sand and coarse gravel in proper proportion, and all but laundry and back porch floor set to a smooth surface with a coating of Portland cement and sand 1/4" thick. Laundry and porch joists will be bedded in concrete. All hearths to have 1/2 brick trimmer arches and to be of concrete as specified for cellar floors. Finished hearths will be of tile provided by the proprietor. Brickwork to be built from outside scaffolding which is to be left for the use of other trades till directed to be removed by the architect, special care being taken to prevent walls being splashed from scaffolding. The labels and strings where shown to be one course of plinth brick, set thus: (A).

Provide and set sills of Credit Valley stone to basement windows, to be 6"x9" and weathered; fuel doors will have wood sills. The sills to all other windows as tinted brown to be executed in the best quality of Portage Entry stone, or other approved brown stone, threaded, chiselled or rock faced, weathered and seated; rear sills may be of Ohio stone. Heads of fuel doors to be of brown stone 9" high. Head of entrance door to be of Portage Entry stone, 1 1/2 bricks thick, cross tooth chiselled. Corbels at front pilasters to be of similar stone similarly finished. Carefully set in fine mortar and protect the boarding in the same way. Bricklayer to attend on other trades in the execution and for the perfect completion of the work.

CARPENTER AND JOINER.

The lumber for the carpenter's work to be of good description of white pine thoroughly seasoned, free from sap, shakes, loose or large knots, or other imperfections, and to hold the full sizes shown or specified, when fixed in the building; good seasoned hemlock may be used for joists and rafters. The joiner's work (unless otherwise specified) to be of best description of white pine, clear and thoroughly seasoned. Inside work on ground and first floor will be varnished. Provide and fix all necessary centricings and turning pieces to openings of doors and where required. Provide and fix lintels to all openings of doors and windows, cambered at top, and not less than 6" in depth at centre, and resting 6" on walls on each side. Provide straps 2 1/2" to be built into walls to support bearings of joists and elsewhere as required for fixing skirtings, trimmings of doors, windows, etc., and other finishings, and at every 2 feet in height of outer walls, on which to nail battens. Batten all outer walls, (including attic where necessary) and elsewhere as required with 2"x1 1/2" battens, at 16" centres—battens not to be placed till walls are parged. Porches will not be plastered. Provide proper grounds for fixing trimmings, etc. Cellar floors of dry and porch to have 2"x4" cedar joists bedded in concrete. Ground, first and attic floor joists to be 10"x2" at 16" centres properly trimmed at fire places, wells of stairs, etc., trimmers to be 4" thick or double 2" and framed with double tenons. Put a tie of 2"x2" herring bone strutting to each bearing of joists on all floors. Prepare floors for pugging at gables where projecting beyond wall line with one inch boarding. Sloping roofs, 6"x2" rafters, at 16" centres, and valleys 8 in. x 3 in., plates 9 in. x 3 in., and 6 in. x 2 in. at 16 in. centres. Ends of joists or rafters to be dressed where visible. Sloping roofs to be laid with dressed 3/4 in. matched boarding in widths not exceeding 7 in., free from loose knots, shakes, or sap, well nailed. Put saddles behind chimneys boarded as roof and 3 in. rounded roll to ridges. Put dressed fascia and 1 in. beaded soffit to eaves, and bed moulding. (B). Gables to be 4 in. of studding 2 in. in diameter. Gables to be sheeted both sides with narrow matched stuff and lined on inside before battening with a double thickness of sheathing paper well lapped; batten as specified for other walls, sheet soffits with narrow, double beaded stuff matched on double sheathing paper made close and tight at walls, etc., and (C) form eaves and bed mouldings, as shown. Beams, 4 in. in diameter, to be dressed and moulded as shown. Front gables to have detail moulded large boards, as shown, (D), secured in strongest manner. Roof of rear porch to have

dressed rafters, and 1 1/2 in. matched and beaded dressed roof boarding. Partitions to have heads, sills and braces 4 in. x 3 in., door studs 4 in. x 4 in., or double 4 in. x 2 in.; common studs 4 in. x 2 in., 16 in. centres, all to be properly framed and cross braced, these carrying joists or rafters to have heads 3 in. x 4 in., and upper studs to be carried down to them and to be well braced. Studs to be placed on flat in confined places. The ground and first floors to be laid with 3/4 in. dressed, tongued and grooved seasoned flooring of the best quality, in boards not exceeding 5 1/2 in. in width, blind nailed to joists, and properly cleaned off on completion; attic and basement, (where called for) to be laid with 3/4 in. matched flooring of good quality, in boards not exceeding 5 1/2 in. in width, floors in attic to extend to wall line. Ground and first floors to be laid on thickened 1 in. boarding laid diagonally with a double thickness of carpet felt between. Carpenters not to lay any floors till all gas or other pipes are put in, and finished floors to be laid till completion of plastering. Put mitred margins to hearths. Main stairs to be built on 1 1/2 in. moulded strings, 1 1/2 in. wall strings to have 1 3/4 in. treads, rounded and returned nosings, cavetto and fillet and cut brackets, 3/4 in. risers, two 7 in. gannelled and moulded newels; set foot and the rest 5 in. turned and moulded cherry newels, 3 in. x 3 in. moulded cherry handrail with 2 in. roll, and 2 in. turned pine balusters. Stairs to be built on proper carriages, well bracketed with 1 in. brackets nailed to each carriage under each step. Spandril at side of stair and forming enclosure to coat closet of 1 1/2 in. framed and moulded panelling, all according to drawings; pannelled door to closet under. Bed of stair facing entrance to have mouldings as shown. (E). Back stairs to have 3 in. rounded hardwood mil, 4 in. hardwood newels, and square balusters, to have 1 3/4 in. treads, rounded and returned nosings and scotia 3/4 in. risers, put together in the best manner, with 1 1/2 in. wall strings. Stairs to cellar to have close strings, 2 in. treads, 3 in. rounded rail, 4 in. x 4 in. chamfered newels. The kitchen, back stairs and pantries to be sheathed with 1 1/2 in. matched and beaded sheeting 3 ft. high, and bath room 5 ft. high, blind nailed to proper grounds, and finished with moulded capping; boards not to exceed 4 in. in width, except in bath room, where they will not exceed 2 1/2 and to be double beaded or moulded. Drawing and dining rooms, hall, vestibule and staircase to have to in. double fascia moulded skirtings, and the rooms and hall on first floor 9 in. single fascia 3/4 in. thick, all properly scribed to floors and nailed to proper grounds. Bed all fillet to floor base. Base in attic 7 in. turns. Trim at registers and cut for plumbers, and hot air pipes. Put 3/4 in. staff beads to all projecting angles in kitchen and attic. Bracket down for plaster arches on ground floor and first floor, as shown by dotted lines, bracket down for cornice. The cellar windows (except where otherwise specified) to have 6 in. x 4 in. solid rebated and chamfered frames, 1 1/2 in. sash

