

to run and see whether his fire is all right and his gauges are all right; and if about the same heat is wanted it will go on all right without any trouble to anybody. In the test I referred to, the same quantity of pipe was used, and they got 26% in favor of hot water. That is the only test I have seen recorded. It seemed satisfactory enough, but still it would not be an answer to everything. I was not sure whether Mr. Curry said that you could leave steam heating apparatus and it would be perfectly safe at night.

Mr. Curry: I know there are two steam plants in this city which can be kept running eight hours without touching.

Mr. Edwards: That is low pressure steam?

Mr. Curry: Yes.

Mr. Billings: I have seen an apparatus in Ottawa run for eighteen hours, but of course a man couldn't do it every time.

Mr. Curry: It is not a rare thing to have our hot water radiators caught in exposed positions—vestibules, or where the pipes come up near outside walls—partly through the great change in temperature.

Mr. Billings: We don't put our pipes in walls—we keep them in the room. It is very easy to freeze pipes, I know. Of course there are all kinds of objections against hot water; and there are objections against steam. Still, I would very much rather hear any questions on the practice we have been using, than any relative differences between hot water and steam. It is really those who have made up their minds that hot water is best that we intended more to speak to. There are no better judges, I think, of whether, in an ordinary building, one kind of heating is better than another, than the nuns. They like to be warm, and they are in the house all the time, and I have spoken to a number of those that are in command of the heating apparatus, and I never yet found any of them that believed steam to be better. The Superior of the Providence Nuns, in Montreal, came from Boston, and she got Mr. Wallworth to put into the very large building a low pressure steam heating apparatus, which is magnificent so far as fitting and practice are concerned. When they went to build their other house, which was just about the same size, they had been making comparisons with steam, and they found the difference was over a hundred tons of coal in a building of the same size, so adopted hot water instead.

HINTS ON ESTIMATING.

By OWEN B. MAGINNIS.

WHEN figuring on special finished joiners' work, as cupboard fronts, closet fronts, doors, dressers, etc., if in quantity, send the list to the mill for an estimate, and add your own percentage of profit; if one or two only, figure on the time and stuff your own workmen will consume in making them and add profit, and avoid taking mill prices for shop prices, and vice versa.

If you have a job of fencing to do in the early spring, do not make the common mistake of allowing only the ordinary time for digging the post holes. It must be remembered that the surface of the ground is impregnated with solid frost to a depth averaging from 18" to 36", and it is so hard that it must be broken with a crow-bar or pick-axe, which will take twice the time to do; therefore charge twice as much as in summer time. Another thing, before figuring on digging of any description, survey your ground carefully, and if necessary use the boring rod to ascertain what sort of material your men will have to handle, and estimate according to its nature and the time you know from experience it will take them to complete the job.

If a carpenter has doors to trim up to 7' 6" high, which have common straight faced jambs and ordinary corner blocks, trimmed and milled casings, he can safely figure setting the jambs at 15 cents a set and trim at 15 cents a side complete, as a good mechanic will set 20 sets of jambs in a day and put on 25 sides of trim. Figuring wages at \$2.50 per day, the builder will get a good profit.

A good mechanic will fit and hang 12 pine doors in a day of ten hours, and do them right, so with wages at \$2.50 per day, pine doors can be fitted and hung for 25 cents a piece. By following this simple method of estimating labor, any builder who knows his men may calculate his labor very safely.

Never overrate your men, and if you are unacquainted with their capabilities as mechanics, make your arrangements so that if you can't change them for better, you may not lose by their slowness or want of skill. It would be wise to select an efficient staff of rapid and accurate mechanics and retain them while it is possible, and when you must lay them off retain their addresses, so that you may again hire them when necessary.

When approximating nails in quantity, it is wise to allow a certain percentage for poor nails, bent nails, and those lost or spoiled in driving, as this always in all cases tells.

Finally, as profitable estimating consists in providing against the expenditure of time, labor or material likely to be unprovided for, it is judicious to spend all the time possible in making allowance for small details which are absolutely necessary, and which only involve more expense and loss if not provided for in the amount of the estimate when sent in.

"PLASTER AND PLASTERING."

TORONTO, February 13, 1891.

Editor CANADIAN ARCHITECT AND BUILDER.

SIR,—I have just come across a book in the Public Library, No. 1319 D, entitled "Plaster and Plastering," by Hodgson, and as there are a number of statements in it that are not quite correct, with your permission I will point some of them out.

To be as brief as possible, I have not quoted the statements in the book that require correction, but simply italicized the word that shows the correction. For example, on page 11 it says that "a durbly is a float," so I have italicized the word "not" as follows: "A durbly is not a float." With the above explanation the reader will understand the corrections following:

P. 12.—No mould will finish a mitre.

P. 17.—Laths should not be made of hemlock, as they will often twist off the ceiling.

P. 23.—Very fine sand is not well suited for plastering. Burnt clay should never be used as a substitute for sand in plastering, as it is only a question of time when it will fall off.

P. 27 and 28.—Mastic should not be put on with a brush, but with a trowel. Portland cement and chalk would be far more likely to crack than Portland mixed with sand.

P. 31.—Sands for floating should not be formed close together. The less you have the better, as they get dry, and when you fill in between them, the mortar shrinks and leaves a hollow space between. Any room from 12 to 20 feet would only need one screed in the centre of the ceiling in addition to one running round the angle; and for floating in the wall, if height does not exceed 14 ft., one screed at the top would do, put on horizontally, and the ground at the bottom forming the other.

P. 32.—The floating for stucco should not be left smooth; it should be left level and true, but a good key left in it from the rule.

P. 33.—Putty and plaster for cornices (or any other work) after getting stiff should never be wetted or knocked up to retard the setting. To do so is to kill it.

P. 37.—For outside work Plaster of Paris should never be used, but either Portland, Medina, or Roman cement.

P. 48.—The scratching for first coat of plastering on lath work should be done the same day that it is put on, and not left for three or four days. The second coat does not need scratching.

P. 49.—There is no travel used for hand floating, but a hand float.

P. 64.—Under the head of "Items," the book gives the cost of 100 yards of three coat plastering, with wages for plasterer at the rate of \$3.00 per day. The total cost is \$16.00, or 16 cents per yard. The conclusion is arrived at as follows:

7 bushels of lime @ 30 cents	\$ 2.10
4-5 of a load of sand @ \$1.25	1.00
9 lbs. of hair @ 65 cents (\$5.85?)	3.15
5 lbs. of nails @ 4 1/2 cents	.22
Lathing 100 yards @ 2 1/2 cents	2.25
Labourer 1-5 of a day	.33
Finishing, 1 days' work	3.00
Making mortar and scaffolding	1.50
Plastering, 2 coats, 1 man 3 1/2 days	2.00
	\$16.00

You will notice the hair is of a very fine quality if price is anything to go by. It must surely be "Plasterers' Hair," as we sometimes see advertised, and not "Cov Hair for Plasterers' Use." Then again there are no laths used, although the nails were there, and also the lather who charged his time. No putty or plaster used, and yet the plasterer finished it, or at least got paid for doing so, but it appears there was no labourer, or else he gave his time for nothing.

The beautiful simplicity of the multiplication and addition is a marvel. No wonder it was done for \$16.00. As the book has been written for the benefit of young plasterers, I think it well to call the attention of your readers to the above errors.

Yours truly,

G. M. GANDER.

PUBLICATIONS.

A very interesting Christmas number of the *Australian Builder*, published at Sydney, N. S. W., has reached our table. We shall have the pleasure of receiving the *Builder* regularly in future.

That excellent journal, the *Dominion Illustrated*, is steadily improving under its present energetic management, and is as steadily growing in public favor. The enlargement to 24 pages weekly afforded opportunity for great improvement in its literary contents, the contributors to which now include many well-known writers. Historic sketches, healthy fiction, crisp editorials on current topics, bright correspondence from London, New York, Toronto, and other cities, sports and pastimes, humorous sketches, etc., make up with the numerous illustrations, dealing chiefly with Canadian scenes, events and personages, a charming journal for Canadian readers.

NOTICE TO CORRESPONDENTS.

If the writer of the letter signed "Plumber" forwarded to this journal for publication, will comply with a well-known journalistic rule, by forwarding his name and address, as a guarantee of good faith, his communication will be published. We cannot print anonymous letters without knowing who are the authors.

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