

drawings than would be necessary in order to understand the general character of the work and examine particular points.

It would pay the contractors, in view of the time saved to them, to purchase their quantities; but this is sometimes done by adding a percentage to the contract price.

The principal objection to the system, that is likely to be raised, is the possibility of inaccuracy on the part of the quantity surveyors. A builder thinks he can trust himself better than anyone else. That is true, no doubt, under ordinary circumstances. But we are talking now of scientific quantity surveying. A specialist is sure to leave far behind the individual efforts of contractors with their hasty methods of arriving at an estimate. Accuracy and only accuracy is what he is there for. He lives by accuracy, and is likely to attain to it with more certainty than anyone else, as his whole attention will be given to method in attaining to it.

A quantity surveyor's bill of quantities will read something like the accompanying example, taken from the bills of the new Parliament Buildings at Victoria, B.C.

There would be no occasion with bills of this kind for the wide variations that are sometimes seen in tenders, even for small amounts. Their use would probably be more profitable on the whole and certainly more straightforward for all concerned. There would be more certainty and less friction. Even if it cost the builders some trouble at first, to make such new analysis of cost as might be required to estimate in this detailed manner, it would save trouble in the end.

It would be a good thing if the Victoria government's plan, of publishing a volume of quantities, could be repeated in Ontario or Quebec, for the next important building that is erected, so that the system might have a trial.

WILL THE COAL FAMINE AFFECT HEATING METHODS?

In answer to this question addressed to a number of the leading Canadian manufacturers of heating appliances, the following opinions have been received:

BROCKVILLE, ONT., Oct. 8, 1902.

Gentlemen,—Replying to yours of the 6th inst., we beg to say that in our opinion the present coal famine being a temporary difficulty only, is not likely to have a permanent effect on the designing of heating apparatus in the future. There is no doubt that apparatus in which other fuel can be economically used can be produced and in fact have been produced already. There are at the present time in operation successful heaters using both gas and petroleum but the great bulk of the work is still done by the better known fuels of coal and wood, and we think the future will be as the past in this respect seeing that there is still a bountiful supply of both classes of fuel.

Yours truly,

THE JAMES SMART MFG. CO.

GUELPH, Oct. 8th, 1902.

DEAR SIRs,—Answering your kind letter of the 7th inst. I would state that I do not think that it will be possible to invent a heating apparatus that will work satisfactorily with petroleum or gas. These materials are too expensive and the fitting up of the burners so as to work satisfactorily has been found to be very expensive. I have been in the business along while and have followed up every invention and suggestion that has been made and have come to the conclusion that a furnace using coal is the most economical in every way. Boilers have to be so arranged in their construction that it is necessary to have direct contact with the

flame to secure the best results, and with gas or other fuel to do this the distribution of burners would be too great and consequently very expensive.

Yours very truly,

JNO. M. TAYLOR,

President Taylor-Forbes Co. and A. R. Woodyatt & Co.

TORONTO, October 13th, 1902.

Gentlemen,—Replying to yours of October 6th, we would say that we regard the present coal strike as of such a temporary character as not to affect in any large way the styles of construction prevailing in centers close to the anthracite regions. Anthracite coal is admitted to be so much better than any other fuel that in our judgment it will be used very largely notwithstanding the present unpleasantness.

The difference between ordinary furnaces for hard and soft coal is not very great, the chief difference being in size. The soft coal furnace requires to be at least one size larger for the given amount of work.

The burning of petroleum in furnaces can be very successful apart from the noise, which we think will be against it as applied to dwelling house, hospitals, schools, offices, etc., where it would be objectionable. In some New England kitchens, petroleum has been in use successfully for a number of years, but even in a stove it is noisy and objectionable for that reason.

Yours very truly,

EDWARD GURNEY.

LONDON, ONT., Oct. 7th, 1902.

In reply to your communication of the 6th, the present shortage of coal we conclude to be only of a temporary nature, and will only temporarily affect the process of heating as now conducted. There is an evolution going on in heating as well as in other lines, which will be regulated by the value of the fuel and the manufacturers will conform themselves accordingly. Up to the present there has been no more economical way of heating than by using anthracite coal, subsequently however the developments in the production of peat may be perfected to such an extent that it will make this fuel cheaper, and it is certainly cleaner; developments in that respect however have not been as rapid as might have been expected, but the present shortage of anthracite coal may have the effect of urging producers in this line to place this article on the market earlier than they otherwise would do. The supply of oil for fuel is so limited and of so uncertain a nature that unless new fields are developed, no improvements in this line are likely to be forthcoming.

We are at present manufacturing furnaces that will burn bituminous coal and coke equally well; the chief prejudice against bituminous coal being that it is not so clean to handle as anthracite.

THE McCLARY MFG. CO.

MONTREAL, October 8th, 1902.

Dear Sirs:—In reply to your enquiry of the 6th inst., it is our opinion that there is no prospect at the present time of any other fuel or method of heating to supersede the use of Anthracite Coal for individual plants, private houses, etc.

The most economical method of heating is by hot water and anthracite coal can be more easily controlled and requires less care than any other fuel.

Most hot water boilers, especially large sizes, can burn soft coal to very good advantage, but more care has to be taken in firing, and more attention paid to keeping flues clean. Probably for large cities, central plant and heating by steam will be found more economical and more satisfactory to tenants.

It is possible also that non-illuminating gas can be made cheap enough to use in private houses for heating and cooking, but at the present time this does not seem practicable.

Reference is frequently made to the immense deposits of peat which are to be found all over Canada, but so far no process has been invented to expel the water from it, and fit same to burn, at a price that will compete with other fuels.

With regard to the use of petroleum, the supply of this is so limited and in so few hands that should there be any further extensive consumption of it, the price would be likely to rise in proportion. Therefore, for many years to come we must depend mainly upon anthracite coal for house heating, and no doubt when the present trouble is over, it will be sufficiently low in price to be within the reach of all.

Yours very truly,

H. R. IVES & CO.