

more than twice \$100,000 in completing the work covered by the preliminary report. This year the Local Government Board held an enquiry to see whether this town could pay its fixed charges or not, and every ratepayer interrogated said that the preliminary report had misled him as to the cost of the proposed works.

That "mild amusement" is not the effect on the engineering profession, is evident from an article appearing in a Western journal this month, by a well-known consulting engineer, Mr. T. Aird Murray, M.Can.Soc.C.E. He says: "The method of charging upon a percentage basis has often been criticized both by engineers themselves and others, but no other satisfactory method has been formulated. The danger in engineers underestimating the value of work chiefly exists at the time when the preliminary report and estimate are prepared, and this is more so when two or more engineers may be competing against one another for the work."

Again, in the "Engineering Record" of March 24th, 1917, Sir Maurice Fitz-Maurice, in his inaugural address as president of the Institution of Civil Engineers, is reported to have asked the question, "Are engineers too optimistic in designing their work, and in their estimates of time and cost?" Answering the question, he says that engineers must plead guilty to the charge sometimes at least. Further, I believe that an American engineering weekly recently adversely criticized the percentage system. What further justification do I need?

I also perused, with interest, another letter to you from Mr. Underwood, of Saskatoon, criticizing my article. I wonder if Mr. Underwood ever heard of the case of a town in the southern part of this province, for which an engineer he may wot of, estimated the cost of a waterworks system at a certain figure, and who, when the bids for the work were found to be in excess of his estimate, and that the money to proceed with the work would not be forthcoming, pared his estimates and received bids within the amount available, after assuring all concerned that his first figure was an overestimate for the work proposed.

You overlook entirely the other phase of my article. In it I blame councils for the lax manner in which they enter into arrangements with their engineers, and I attribute many existing municipal financial embarrassments to this cause. One case came within my notice where the only document relating to the engagement of an engineer was a telegram from him stating his terms. And this for work estimated at over half a million, and as a result, when the final settlement came to be made, the engineer did not apparently know to 25 per cent. the exact cost of the work, having merely taken the annual financial statement as a basis for commission, so that he might be claiming on his own fees, legal fees, debenture discount, and all sorts of other things.

I still contend that a fixed sum for the work covered by the original estimate is the fairest all round, and of course councils would expect to pay extra for any additional work performed by their instructions. Can you tell me any good reason why an engineer should receive \$600 extra commission if, between the date of the report and the acceptance of the tender for cast-iron piping and specials estimated to cost \$60,000, the market should suddenly soar, so that the lowest tender was \$72,000; or why, on the reverse, if the market should drop so that the material could be bought for \$48,000, the engineer's commission should be reduced by \$600?

There is a provision in the Municipal Acts of this province, that where special work is performed for municipalities by members of my profession, the bill can be

submitted to the government for approval before payment. My profession sees no objection in this. Would the engineering profession be satisfied with a similar provision?

Happily, nowadays in Saskatchewan, capital expenditure by municipalities is under very strict control, and we do not think we shall have the same trouble in the future from engineers' and councils' extravagance that we have had in the past. Other provinces please note.

Now, in concluding an article already too long, may I say that I am proud my father was an English civil engineer, my brother is, or was, president of a society of civil engineers in China, and that I and all my brothers are, or have been, municipal men. It is not likely, therefore, that I should make an "unjustified attack" upon a profession of which my nearest and dearest relatives are members, unless I felt that an evil existed for which my municipal experience, not merely in my own province, seemed to fit me to draw attention. It is only natural that you, as the mouthpiece of the engineering profession, should to some extent resent my article, but if you are typical of your profession, you are a sportsman and will bear no ill will.

O. J. GODFREY, F.C.A.

Indian Head, Sask., April 23rd, 1917.

[NOTE:—No ill will whatever, Mr. Godfrey. Our previous editorial served an excellent purpose if it did nothing more than to bring forth this interesting and instructive letter from you. Had your previous article been as gently worded as your present letter, our resentment would have been milder.

In your original article you plainly accused consulting engineers generally of succumbing to the temptation to underestimate in order to get appointments on work which would not be undertaken if correctly estimated. Yet now you disavow any intention of saying that engineers purposely underestimate. We all admit the possible existence of the "temptation." What we objected to was your inference that engineers usually succumb to it and that you "have yet to see my first case of the actual cost of waterworks or electric light coming within the original estimate of the consulting engineer."

Also, how about your statement that "with due deference to the engineering profession, I make bold to say that if a limit had been placed on the engineer's fee for the completed work, much of the over-expenditure would not have occurred"? Was that not accusing engineers of dishonesty by inferring that they allowed "over-expenditures" in order to collect their percentages on same? Your meaning was certainly clear, because you elaborated on the point in the following manner:—

"In other words, if on an estimated cost of, say, \$100,000 the council engaged the engineer to supervise the work proposed by his plan, irrespective of cost, at 5 per cent. on expenditures, the total fee not to exceed \$5,000, I feel sure that the work would be done at much nearer the amount of the original estimate than has been the case in the past."

How does this agree with your illustration of the cast-iron pipe purchase? Supposing that the market soared after the date of the engineer's report, and the pipe cost \$600 too much, would the engineer be supposed to "skimp" other parts of the work to make up that \$600?

We recognize your standing in the municipal field, and it was for that reason that we thought your article sufficiently important to require editorial comment. Had your remarks come from a municipal accountant of less prestige and experience, probably no attention would have been given to them.