

Far too small a portion of the engineering work in Canadian municipalities is dealt with by trained engineers, either as consultants or as resident engineers.

Municipal boards and provincial boards of health are chiefly appointed from members of the legal and medical professions, who "employ" engineers when they want engineering advice. Taking Ontario as an instance, there are few, if any, engineers holding administrative positions on boards dealing with engineering matters, such as the Railway and Municipal Board and the Provincial Board of Health. Why should engineers not be chosen to act to a greater extent on these bodies as they are in other countries? Why is it that engineers do not insist on representation on expert boards? When in Winnipeg, in 1916, I brought a proposal before the government that the Provincial Board of Health should make its sanitary engineer a member of the board. I have made the same suggestion on other occasions. Surely that was not slighting the engineer.

In the conclusion to Chapter VII., I contend that there should be a more scientific organization of rural life and rural industries; that increased responsibility should be placed on expert permanent officials (i.e., engineers, etc.), and that departments of municipal affairs should be set up in each province with skilled advisers (i.e., engineers chiefly). It is a direct step from this chapter and its conclusions to the general recommendation which is made on pages 237 and 238, to which the editorial refers.

The point of the paragraph to which objection is taken may be summed up as follows:—

That there should be a skilled municipal department in each province, with greater reliance placed on engineers as expert advisers. How does this convey a "slight" on the consulting engineer? The writer of the article quotes the following phrase in a critical manner: "Until there is a skilled municipal department in each province, to advise and help local authorities with engineering advice, we cannot expect satisfactory improvement in the status of the municipal and sanitary engineer nor effective local administration of public works and sanitation."

The above phrase is immediately preceded, on page 241, by the following, which is *not quoted*:—

"Much of the work now being performed by the medical officer of health should be undertaken by the sanitary engineer. The medical officer has full scope for his skill and energy in fields which are essentially his own, and much of the municipal and sanitary engineering work he is doing is a burden of which he would rather be relieved, and which would be more efficiently performed by properly qualified engineering officers giving whole time service."

Is it a slight on the engineer to advocate that more engineers should be employed than at present, and that the status of the profession should be improved? *The Canadian Engineer* has itself devoted a large amount of attention to advocating these two things. I have said not one word nor made any hint that the work of consulting engineers employed in advisory capacities is defective.

In rural districts particularly, and even in many towns, no consulting engineer nor resident engineer is employed. I can quote many examples, but I will merely refer to one town of no less than 8,000 inhabitants within fifty miles of Toronto which has no resident engineer, and does most of its work through contractors directed by amateur committees without the aid of a consulting engineer.

I believe the taxpayers in that town think it is an economy to do without an engineer. Therefore, we have not only to face a situation which means that the citizens of that and hundreds of smaller towns lose largely be-

cause of want of engineering advice, but actually do so from the mistaken notion that the engineer is not worth his salary, and that engineering work can be done by anybody. Is it desired that this kind of real "slight" on the engineer should be continued? If so, then I admit I am rightly criticized for expressing my dissatisfaction with such a system.

Incidentally, I may mention two other matters regarding which I have expressed dissent in different parts of Canada. One is the employment of contractors in the double capacity of engineers and contractors, thus placing them in the position of being both employers and employed. In such cases the proper relationship of the contractor and engineer is reversed. The former is the "boss" and employs an engineering assistant to keep him right, whereas he should be doing his work under control of a consulting engineer. A second matter is the expensive habit in Canada of appointing legal arbitrators to determine purely engineering questions—a proceeding which has been largely abandoned in Great Britain, where great economy and efficiency is obtained by the employment of consulting engineers and surveyors as arbitrators. A single engineer can often determine a question which, according to the older method, would require a bench of lawyers, an array of counsel, and a number of expert witnesses. It is in such cases that the "slight" is given to the engineer.

The real objection of the writer seems to be to the proposal that expert departments of municipal affairs be created in each province, on the ground that this reflects on the consulting engineer, who at present is apparently presumed to do the work which would be undertaken by these departments. I have shown that he does not do the work, even in fairly large towns, and that he is not consulted properly, even on provincial boards. On page 197 I also point out that the small municipalities cannot afford to employ expert engineering advice, even if they desired to do so. I say:—

"In view of the enormous expenditure on municipal development it seems extraordinary that there is so little effort made to avoid the waste which results from lack of co-operation and from want of the knowledge which can only be derived from wide experience. Small municipalities, with scattered populations and few resources, have not the means to employ men of adequate skill and are compelled to undertake highly technical work without knowledge of mistakes or successes made by other municipalities. It is no excuse that these small and poor municipalities have inadequate means to employ experts or obtain knowledge; in so far as this lack of means exists the need should be met by the aid of the provincial governments. In view of the great issues and large expenditure involved it is of urgent importance to Canada that each province should have a well-organized municipal department with expert advisers on all kinds of municipal affairs. One of the special tasks of such a department would be to advise and assist small municipalities."

The intention in creating provincial departments of municipal affairs is primarily to secure the more extended employment of the engineer and the increase of his power as an official so that he can effectively apply his knowledge. Such extended employment is necessary to prevent "dishonest officialdom" from continuing evil practices.

In the final paragraph of the editorial there seems to be an objection to engineers serving except in an individual and competitive capacity. That is a point on which opinions among engineers may differ. Personally, I have seen the profession of consulting engineer become strengthened in the Old Country as a result of the more extensive use of the official engineer. Why should this

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