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Steel Water Tower of 500,000 Gallons Capacity

Erected at Stratford, Ont., by the Hydro-Electric Power Commission of Ontario—Factors Governing Decision Regarding Location, Height and Type of Structure—Total Weight on Foundations, 2,755 Tons When Tank is Full

By A. S. L. BARNES, A. M. I. E. E.
Hydro-Electric Power Commission of Ontario

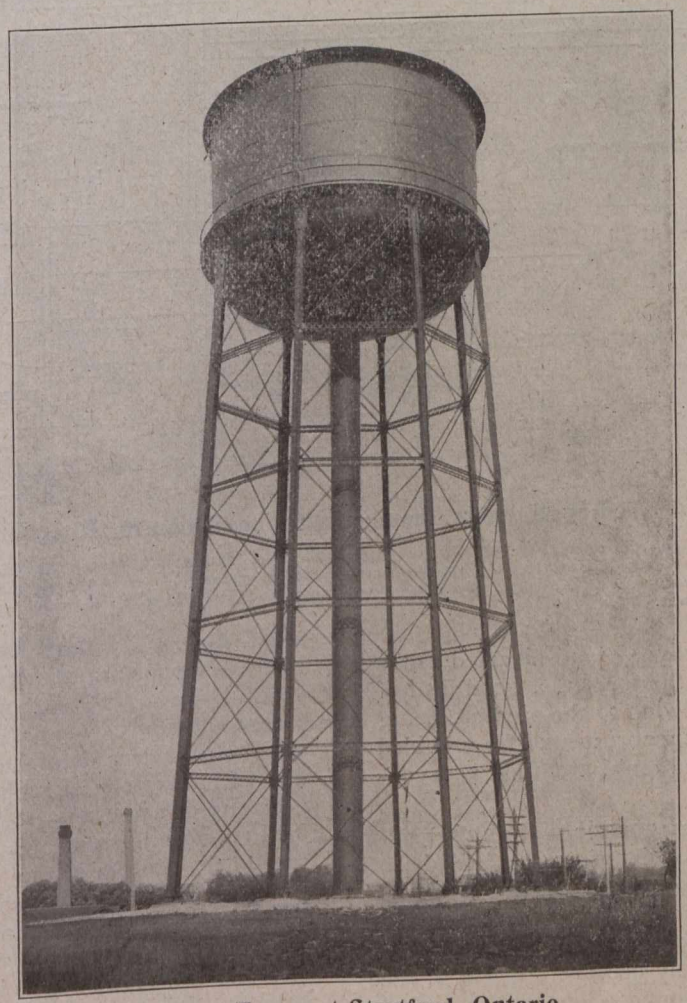
VERY considerable extensions and alterations have, during the past few years, been carried out in connection with the municipal waterworks department of the progressive city of Stratford, Ont., a place of some 16,000 inhabitants.

One important item on the programme of work done has been the provision of a steel water tower, of a height and capacity which are not exceeded in many places on this continent.

Like that of many another small municipality, the Stratford waterworks, prior to the installation of this water tower, pumped direct into the mains, a procedure which, as is well known, is not conducive to economy in operation.

A waterworks system run on this plan is like an electric generating station which, being without storage capacity, has to provide sufficient generating plant to deal with the maximum peak load and also requires some additional reserve capacity for use in case of emergency. The difference between the waterworks and the electric station, however, is that failure to provide suitable storage capacity in the latter case arises from physical disability; in other words, it is almost impracticable, except in the case of d.c. stations, and none too satisfactory there, while in the case of the former it arises either from financial disability, so far as the raising of the necessary capital is concerned, or from lack of mental capacity on the part of the authorities concerned to realize the benefits to be gained by providing it.

It will be well to review briefly what these benefits are. Suitable storage capacity, such that the maintenance of an adequate pressure at all times is assured, has the following advantages:—



Water Tower at Stratford, Ontario

1. More even pressure is obtained on the mains, giving better satisfaction to consumers, as well as better working conditions for the pumping plant.

2. Some reserve capacity is provided which is able to instantly take care of small fires (very many fires are checked by such means); even for larger fires the advantage of this immediately available capacity, if only at a moderate pressure, cannot be despised.

3. The operation of the pumping plant, from a financial standpoint, is greatly improved, because, in the first place, less plant capacity is required, thus reducing capital cost and overhead charge on plant, buildings, land, etc., and in the second place, the load can be maintained practically at a steady value throughout the twenty-four hours, or any desired portion thereof, resulting in increased economy of operation.

A little while previous to the outbreak of the war, it became apparent to the local waterworks authorities in Stratford that various changes should be made in order to comply with the requirements of the fire underwriters as revealed in their report. The matter was taken up with the engineering department of the Hydro-Electric Power Commission of Ontario and the whole question thoroughly gone into. The pumping requirements for fire service were considered but it is not intended to deal here with that part of the work. At the same time it was desirable that suitable storage capacity at some convenient pressure should be provided.

Local topographical features were such that a standpipe or elevated tank would furnish the only means of providing storage, with pressure, within a reasonable distance of the city's mains.