

Engineering Department

A. W. CAMPBELL, O. L. S., C. E., M. C. S. C. E.

BRACEBRIDGE POWER DEVELOPMENT

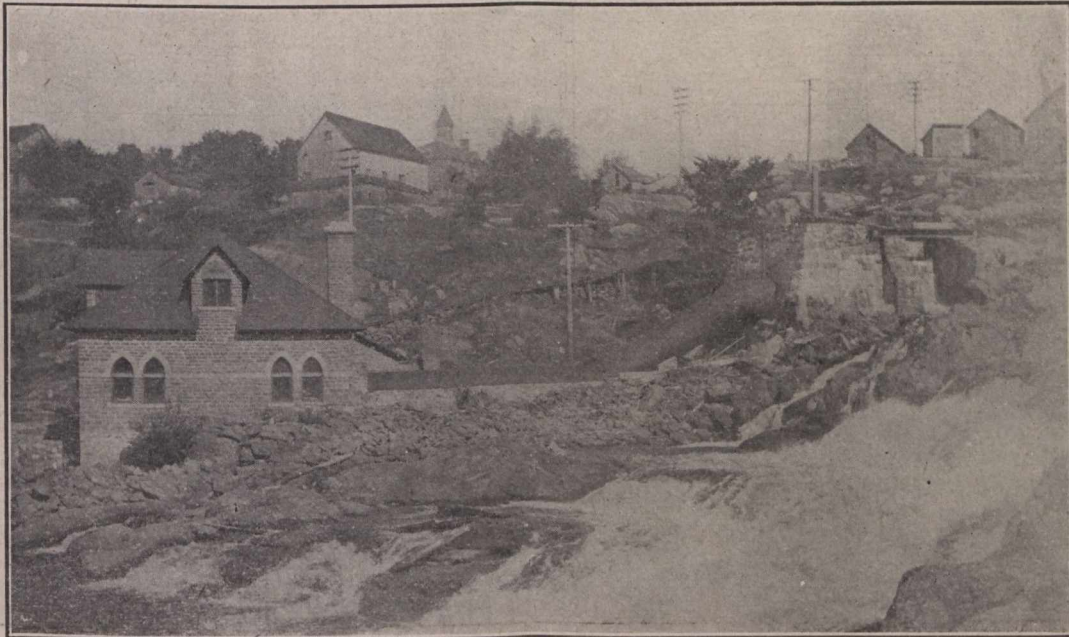
Nearly fifteen years ago the town of Bracebridge was first lighted by electricity, a small steam plant being installed by a private citizen. The service as then given was both expensive and unsatisfactory, the charge being \$7 per year, per light, flat rate. In 1894-95 the municipality bought out the electric business, constructed a more efficient electric plant, and installed a system of waterworks, operated by water power. For this work \$25,000 was voted by the people; \$17,000 for the waterworks and \$8,000 for the electric plant.

A 1,000-light dynamo was installed but this, in a few months was found to be too small and a 2,000-light machine was purchased and used for seven years.

Current is generated at 2,200 volts and is transformed to 104 volts on the secondary wiring. The present head at the dam is 37 feet but this can be increased to 56 feet. The minimum flow of the river is 240 cubic feet per second. The plant will now develop 750 electrical horse-power.

Waterworks

When the new power was installed in 1902, the waterworks pump was kept in the old pumping station, also situated on the Muskoka River, a short distance above the new power station, and operated by water power. The water supply flows to a small covered reservoir at the pumping station from springs about a mile distant. But as the fall from the springs is not sufficient to give good domestic pressure in all parts of the town, additional



BRACEBRIDGE POWER PLANT

In 1901, the town decided to enlarge its electric plant, and secured additional water rights on the Muskoka River, the falls being in the heart of the town. In the extension scheme, a new dam was built, a new flume, a new power house and a new dynamo was installed. The general plan comprises a head race 205 feet long, leading from the dam; and steel pen stocks, six feet in diameter and 101 feet 6 inches long, from the head race to the power house. The new power house is a handsome building both inside and out. The exterior is of stone, quarried in making the dam and head race; and the interior is lined with brick. The equipment as installed in 1902, consisted of one 250 kilo-watt, 2 phase, alternating generator, driven by a pair of 20 inch Jeucks turbines, with an 8 K. W. exciter and a nine inch wheel. Provision was made at that time for increased capacity, which has this year been carried out by adding a pair of 25-inch Kennedy turbines, a 300 K. W., 2 phase generator, and an 11-K. W. exciter driven by an 11-inch wheel. The electrical machinery is supplied by The Canadian General Electric Company.

power is provided by the turbines. The turbine at the waterworks is a New American, 110 h. p., and a Northy power pump of 1,000,000 gallons capacity in 24 hours. Only about 75,000 gallons, however, are consumed daily. Very little attention is required, the bearings being oiled each morning, and the station is then locked up for the rest of the day.

The electric power plant represents a municipal asset of \$52,000 and the waterworks, \$36,000, not including this year's extensions. Electric light rates in 1905 amounted to \$6,714.58, and from power, \$1,607.09. Water rates amounted to \$3,232.82. In 1905 after paying the annual debentures and interest, and all charges for operation and maintenance, the electric plant transferred \$2,200 to the municipality, or over \$1,200 in excess of the charges for public lighting. All rates are moderate, the charge for electric power being \$12.50 per h. p. for ten hours service and \$15 for 24 hours. The electric lighting schedule is from sunset to sunrise. The procuring of a greater supply of water and increased pumping facilities are now under consideration.