

## MUNICIPAL DEPARTMENT

### NEW PLUMBING STATION FOR OTTAWA.

The new auxiliary pumping station at the Ottawa pumping waterworks was set in operation for the first time on Christmas day, and the pumping capacity is now increased by 8,000,000 gallons daily.

The station is a substantial structure of limestone, built immediately adjoining the main station and being of the same height. When the work was started great difficulty was experienced in getting a dry foundation and a lot of blasting had to be done. The total cost of the building and equipment was \$95,000. There are two double action pumps, each with a daily capacity of four million gallons. The pumps were supplied by the Kerr Engine Company, of Wakerville, and the turbines and shafts by the Jenckes Machine Company, of Sherbrooke. Holbrook & Sutherland did the masonry and stone work and the later details were superintended by assistant engineer Cranston. The pumps cost \$22,000, turbines, shafts, etc., \$6,700, building, \$35,000, while the balance of the total cost of \$95,000 was expended on the foundation and incidental work.

The operation of the auxiliary plant will largely obviate the effect of anchor ice on the water supply and pressure, inasmuch as should one set of turbines become clogged so as to prevent the running of a pump, there are plenty of others to do the work and maintain a normal pressure.

### LIFE OF CAST-IRON PIPE.

In answer to a correspondent asking as to the probable life of cast-iron pipe buried in ordinary soil, Municipal Engineering gives the following interesting information on the subject:

The only data from observation at hand are found in reports from St. John, N.B., and Los Angeles, Cal. Gilbert Murdoch, superintendent of the waterworks of the former place, reported in 1892 several observations. In one case a 4-inch main, in use about 33 years in marsh mud, had failed by softening of the outside, and the break took place at some air cells in the body of the pipe.

A 6-inch pipe 51 years old in soft, slaty rock, failed from softening. A 24-inch pipe laid in well-drained, gravelly brick clay, 36 years old, failed from inherent defects in the pipe, the outside of the pipe being sound and the inside having a coat less than 1-16-inch thick. None of these pipes were protected by coatings. The conclusion regarding the 24-inch pipe in well-drained gravelly clay was that, aside from the defects in manufacture, its life would have been practically indefinitely long.

J. H. Dockweiler, city engineer of Los Angeles, Cal., reported the condition of the waterworks in 1897. The pipe was

uncovered in 318 places. Cast-iron pipe 28 years old was found in a perfect state of preservation. In sand or loam the bare pipe metal did not rust. In hard adobe soil there was some rust, but the pipe was practically uninjured. In all cases the original asphalt coating had practically disappeared. A later report of a board of engineers, consisting of J. D. Schuyler, A. L. Adams, A. H. Koebig and J. B. Lippincott, estimated the depreciation of the waterpipe in the city in the better soils at 1.25 per cent. per annum, indicating a life of 80 years, and in the poorer soils at 2 per cent. per annum, indicating a life of 50 years. The effect of the soil upon the outside of the pipe and of tuberculation upon the inside are both allowed for in these estimates.

In case there is opportunity for electrolysis from street railway or other electric leakage, the life of pipe is very greatly shortened. Some chemical conditions of soil which will shorten the life of pipe will doubtless be met with.

### LOCAL IMPROVEMENTS IN OTTAWA.

Local improvement work in Ottawa during the past season has been unusually heavy, even though the total expenditure this year is below that of 1900. This is to be accounted for by the fact that the total outlay of last season included as a local improvement work all the expenditure in connection with the subsidiary system of drainage at the Glebe. The assessment

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commissioner's figures show that the estimated cost of local improvements this year is \$114,763.51, as compared with \$169,483.61, a decrease of \$54,720.10, accounted for as above.

Under the local improvement system 172 works were commenced this year as compared with 91 in 1900. The property owner's share of the cost was \$70,969.21 and the city's \$43,794.30.

For concrete walks, \$57,829.20 was expended; for plank walks, \$3,318.50; sanitary sewers, \$51,246.81; macadam roads, \$2,369.

The town of Collingwood constructed 54,000 feet of cement sidewalk in the year 1901, at a cost of \$5,000.

The city engineer of Ottawa has prepared a statement of the cost of sidewalks constructed during the past year. There were constructed 131.2 miles of granolithic sidewalks, at a cost of 36.55 cents a sq. foot. The relative cost of sidewalks since 1897 has been as follows: 1897, 18c. a foot; 1898, 17c.; 1899, day labor, 15 9-10c.; 1900, 16 7-10c.; 1901, 16.55c.

Architects and engineers will be interested in knowing that you are submitting a tender as the result of the advertisement for tenders published in the CONTRACT RECORD. Mention the fact to them.

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