

the work, divert the river through to completed part of the work, and so make a start to put in the cofferdam to the eastern section, that constitutes the dam. Owing to the rapid progress of the work on the west section, and that now being up to the grade required, a start was made on the superstructure or pumping station to the following dimensions (inside) 39 feet wide, 110 feet long, 28 feet high, with a 10-ton travelling crane from end to end.

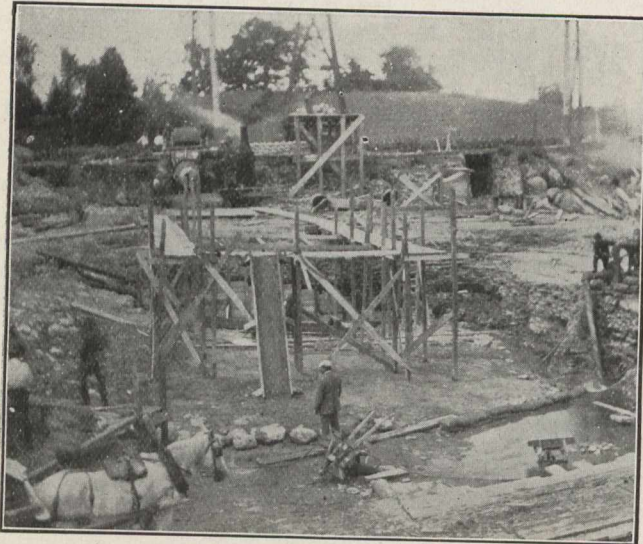


Fig. No. 3.

The superstructure is a series of concrete pillars, intervening space filled in with windows and brickwork, with a concrete belt course above the windows.

The roof is of concrete supported on 12-inch I-beams. The top portion of the concrete roof is boarded with match lumber with an air space between the concrete and the lumber, thus reducing the condensation to the ceiling to a minimum, a roofing felt of an approved quality is laid on the boarding, thus making a good even watertight roof. Fig. No. 5, 27th November, 1909, shows the forms removed from the

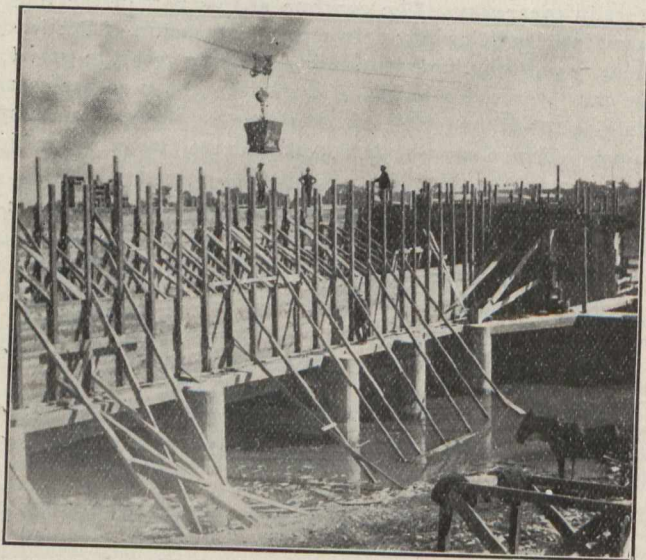


Fig. No. 4.

concrete, some of the windows in place, and a start made on the brickwork, which is Milton red pressed on the outside, and Milton buff on the inside.

A start has been made to install the machinery which consists of two 62-inch Samson wheels, two 68-inch Samson

wheels, one McDougall pump, with a pumping capacity of 3,000,000 gallons of water per day, one Wm. Hamilton pump, with a pumping capacity of 3,000,000 gallons per day, and the two pumps from the existing power house with a pumping capacity of 2,500,000 gallons per day, thus giving the city a pumping capacity of 10,500,000 gallons per day in their new development; the following figures give the approximate efficiency of the wheels:—

62.12 ft. head, 323 horse-power water cub. ft., 17.574 speed, 91 revolutions per minute, 68.12 ft. head, 388 horse-power water cub. ft., 21.138 speed, 83 revolutions per minute. The building is heated by a 30 horse-power tubular boiler, connected to a series of radiators along the north and south sides of the building with a radiation of 1.460 sq. feet.

Passing from the building of the pumping station we find that the eastern section of the work that constitutes the dam made good progress as on November 12th, 1909, we commenced to erect forms for the lower dam or apron, the same quality of concrete was put into this work as on the west section, the construction being a series of piers and sluices.



Fig. No. 5.

The grade at base of piers 57.06; grade at bridge floor, 83.00. The piers are 4 ft. thick, sluices 20 ft., with a log slide 6 ft. wide. The bridge floor is 15 in. thick of concrete with reinforcement longitudinal and cross way of floor, the whole of the stop-log channels are connected together by channels that cross the sluices and bolted to the stop-log channels in a continuous line as shown on Fig. 6, 29th November, 1909; this also shows the work nearing completion, and within a few feet of the required level 83.00. In constructing this development provisions have also been made for future development for electric power by the addition of two supplementary sluices 20 ft. wide by 60 ft. long, with a capacity of development about 1,200 horse-power.

The situation of the new dam being about 800 feet lower down the river than the old dam, and the water having to be raised to a level of 81.60, it was necessary to build a watertight embankment along the west river bank with a concrete core wall running the whole length of the embankment 800 ft. also to divert a creek that emptied into the river just below the old dam, the diversion of this creek was a tedious matter owing to the waterway having to have an outlet, and the ex-