

**SEPTIC TANKS FOR THE ROYAL MUSKOKA HOTEL.**

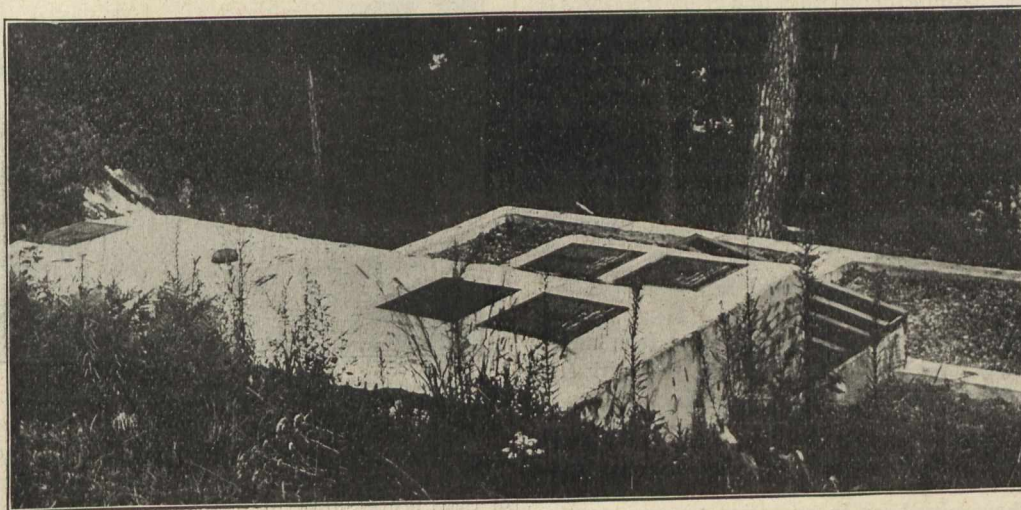
With the introduction of the Septic Tank system of sewage disposal, already described in the Canadian Engineer, there is no longer any reasonable excuse for jeopardizing the health, and often the lives, of guests at summer hotels and similar resorts, through failure to provide safe and efficient methods of sewage disposal. It too often happens, however, that consideration of this important question is neglected until emphasized by the outbreak of an epidemic with its attendant loss of business and prestige.

Among the first to realize the importance of protecting their guests by adopting up-to-date sanitary methods is the

The main sewer from the hotel discharges into an inlet chamber; from this chamber the sewage is admitted through sluice valves to each of the tanks.

**Septic Tanks.**

The septic tanks are each 36 feet long, 7 feet wide and 3 feet deep below the water level, and are covered with reinforced concrete roofs. In the tanks the solids present in the sewage are separated and retained, and the organic matter is acted upon by the liquefying micro-organisms present, by which it is broken down into simpler substances. The liquid effluent, thus freed from solids in suspension, passes off through a line of 3-inch pipes laid horizontally, 12-inch center



**Small Plant Showing Reinforced Concrete Roof.**

well-known Royal Muskoka Hotel, beautifully situated on Lake Rosseau, Ontario.

The Royal Muskoka Hotel is built on the south-east end of an island, and consists of twelve long wings; one extending north-west, the other south-west. The existence of a rocky ridge running east and west from the junction of these wings, made it necessary to provide two systems of sewers; one discharging south of the hotel, the other, and the larger system, being carried westward. The sewage from both systems is passed through septic tanks, and the tank effluents are subjected to aerobic bacterial contact before being discharged, odourless and clear, into the lake. Both plants

to center, through a wall near the end of the tank, 2 feet below the water line, into the effluent chamber.

**Contact Beds.**

There are four contact beds, 29 x 15 feet, all filled to a depth of four feet with slag. The tank effluent is distributed over each contact bed by lines of farm tile laid in the filtering material and fed by main distributors. The filtered effluent is collected by lines of farm tile laid on the floor of the contact beds, discharging into main collectors. The latter are connected with cast-iron discharge wells in the gear chamber.

The tank effluent is delivered to each in turn through its admission valve. Meanwhile the discharge valve is closed



**Contact Beds of Large Plant Built in Concrete.**

were designed by the Cameron Septic Tank Company, of Chicago, Ill.

**Capacity of Works.**

The larger plant is designed to provide for a daily flow of sewage amounting to 25,000 gallons, and consists of two septic tanks and four aerobic bacterial contact beds, all built in concrete, and so arranged that either of the tanks can be cut out without interference with the operation of the other, thus allowing for various flows.

so that the interstices of the filtering material are filled with the tank effluent. The effluent remains in the contact beds for a period of about two hours, according to the rate of flow, during which the impurities present in solution are oxidized by the bacteria attached to the surface of the filtering medium. The discharge valve is then opened, when the filtered effluent escapes, drawing down after it a supply of air into every crevice of the contact bed. The latter then drains and aerates while the remaining contact beds of the set are filling, after which it is again filled in turn. This