

PARK ENGINEERING

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An engineer is sometimes called the man who makes the roads smooth for other people. He gets part of the credit for travelling over the rough ground ahead of the proposed railway, with a pair of shoe-packs and an Indian guide, searching for the most suitable valleys and side-hills to keep his railway as nearly level as possible and as nearly straight as practical, so that there will be no heavy grades and no unnecessary curves.

Park engineering seldom requires railways, but roads are often an important factor, as many people use park roads for automobiling, bicycling, sleigh-riding and walking. These roads must be located in scenic parts and must sometimes be on side-hills, often on low ground and occasionally on high lands. In almost all situations the most important work in connection with park roads is to have them well drained. If a road is built over soggy clay and no tile drain is put in, the next winter one is sure to find his road heaved up in spots; and in the spring, when the frost comes out,

seeded. The cinders prevent worms from coming up and destroying the green. Tennis courts are sometimes built of cinders, and often a clay court is built if a good strong clay can be secured from a new sewer or some deep cellar. A cricket crease should be well under-drained with tile pipes and sown with a fine grass seed, including neither rye grass nor clover. About six or eight bushels, or 200 lbs., of seed is required to an acre.

Open-air rinks are an addition to our parks. These should never be made on grass, as the sun in March, shining through the clear ice, will often burn and kill the sod. The city of Toronto operated 92 free skating and hockey rinks



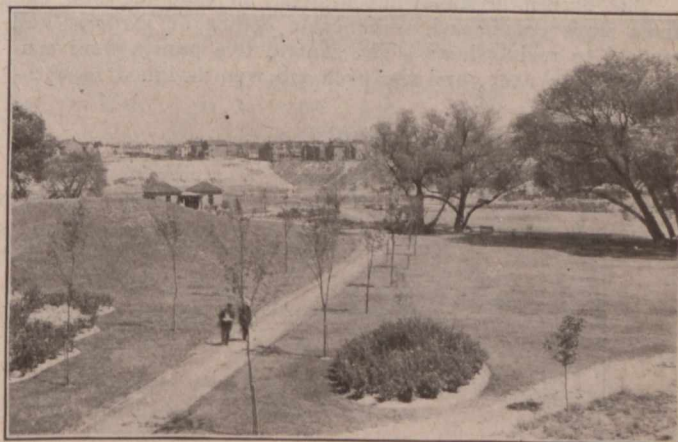
WILLOWVALE PARK, TORONTO, BEFORE IMPROVEMENT

during the season of 1919-20. These were flooded by hose connected generally with a city fire hydrant.

At Exhibition Park, where roads are paved and large roofs shed water rapidly, a good system of draining is required, varying from 6-in. pipe to as large as 24-in. where they empty into Lake Ontario.

The Rosedale lacrosse field was under-drained with tile pipe laid 50 ft. apart some 30 years ago, and it is considered one of the best ball fields in Ontario to this day.

Lavatory accommodation is an important feature of park work. Sometimes, when no sewers are at hand, a system of septic tanks and weeping tile are installed, or the Kaustine system if the land is very low, as on an island.



WILLOWVALE PARK AS IT IS TO-DAY

The lavatory buildings should be designed with fixtures concealed as much as possible to discourage rowdiness. Press buttons can be placed in the wall and lights guarded. Two lavatories may be built close together and one main drain placed between to reduce expense. All water and drain pipes should be constructed so that they can be easily emptied in the fall or whenever desired.

A summer course in civil and mining engineering has been arranged by the University of Toronto, which has bought 75 acres at the northern end of Gull Lake, about four miles from Minden, Haliburton County, Ont., where the students will receive practical training.



ROAD CONSTRUCTION IN HIGH PARK, TORONTO

there is a soft place into which every wheel drops until a pitch hole is formed and the road ruined.

A successful way of draining has been found to dig a ditch along each side of the road about 3 ft. deep, lay a 4-in. tile pipe in the bottom, and fill the ditch with cinders. On a long hill this is not sufficient, but a glazed pipe drain may be put down on one side of the road, say 4 ft. deep, with a brick manhole (and a sump to catch sand) every 100 ft., the top being covered by an iron grating, with the bars running parallel to the road, so that leaves will wash over and will not plug up the grating. A 6-in. glazed pipe should be run from each such manhole across the road to a similar manhole on the opposite side.

Sometimes a piece of land has to be drained for a garden or a ball field. In this case weeping tiles should be laid from 50 to 75 ft. apart and about 2 ft. deep, depending on the soil. They should have a fall of at least 2 ins. in 100 ft. and the material taken from the ditches replaced to within 6 ins. of the surface with cinders. Water pipes are sometimes laid in every second ditch, for watering the grass, etc.

For a bowling green the ground is levelled and 9 ins. of cinders is put on. This is covered with good top soil and