



Concrete Pipe Reused for Markdale Storm Sewer



Photos Courtesy of: Robbie Kitchen, Con Cast Pipe.

Thirty year-old 1350 mm diameter RCP ready for reuse as a storm sewer.

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When specifying pipe material for pipelines and culverts, the design engineer, contractor, and eventual owner of the infrastructure system should consider the durability of that system. This is especially important within the context of designing and constructing buried infrastructure that is sustainable. Reusing products and materials is a fundamental element of sustainable development that results in infrastructure assets with long term value because of durability. Servicing of a site in Markdale, Ontario for a new Chapman's ice cream production facility demonstrates the durability of concrete pipe, and how it contributes to sustainable development.

Chapman's is the largest independent ice cream and ice water products manufacturer in Canada, and Markdale's principle employer of about 350 to 400. In 1973, David and Penny Chapman purchased the century-old creamery that has grown into a multi-million dollar business. A fire that destroyed the facility on September 4, 2009 resulted in the construction of a new production facility on a nearby site.

A 30-year old concrete pipe storm sewer located on the site of the new facility had to be relocated to accommodate the new building. When the pipe was excavated, the contractor discovered that it was in excellent condition. Salvaging the concrete pipe to reduce the cost of servicing the site became an option. After a review of this opportunity by the consulting engineer, municipality and contractor, the decision was taken to reuse any concrete pipe that was not damaged during excavation.

Of the 300 m (approximately 123 units) of 1350 mm diameter reinforced concrete pipe removed from the original storm sewer alignment by Cedarwell Excavating, some 90 units were re-usable. Precast manholes and a precast structure required to complete the construction of the storm sewer in its new alignment were supplied by Con Cast Pipe.

Concrete pipe supplied for pipelines and culverts is designed to last for 100 years or more, and continues to gain additional strength after installation. Because concrete pipe is an engineered product, it can have a capital cost that is more than alternatives like plastic and metal. In the long run, however, it is more cost effective because of a long service life, lower installation costs, and capacity for salvage and reuse.



Buried concrete pipelines and culverts are sustainable systems designed to meet the needs and aspirations of the current generation without compromising the ability to meet those of future generations. The concrete storm sewer that was reconstructed to service the new Chapman's factory is a valuable asset. The durability of a concrete sewer is apparent and there is strong evidence that it is contributing to social progress, environmental balance, and economic growth of Markdale. These are all elements of sustainable development. 