

Trenchless Storm Sewer Rehabilitation

GRP Segmental Liners

Greater Toronto Airports Authority

Lester B. Pearson International Airport, Mississauga, Ontario

Project Description

Construction of the new Terminal at Pearson International Airport, Toronto, a multi-billion dollar project, involved improvement and rehabilitation of underground infrastructure. One major pipeline, a 1650 (66") CSP storm sewer was identified needing rehabilitation due to deflected portions. The Greater Toronto Airports Authority (GTAA) retained UMA Engineering Ltd. to provide preliminary design, design, and contract administration services to rehabilitate the 1676 mm corrugated steel pipe storm sewer outlet at the Lester B. Pearson Airport from Jetliner Road to Mimco Creek. The existing 1676 mm diameter storm sewer is one of the major outfall sewers for the eastern airport area and is approximately 12 m deep. The pipe was over 40 years old and exhibited signs of extreme structural distress. The total length of GRP rehabilitation was 359 m (1,178 ft). The pipeline included one location deflected down to 1350 (53"). This location was used to size the panel OD at 1320 (52") for the full length to be lined. All panels were 28 mm thick.



Due to the depth of the sewer and the fact that there was considerable development over it, it was desired to implement a trenchless rehabilitation solution. After a review of a number of alternatives it was determined that the use of GRP segmental liners would be the least disruptive and most cost-effective long-term solution. As such, a WRc Type I GRP panel lining design was considered the most suitable method. The work was tendered in early 2003 and was completed in October 2003. The approximate project value was \$1.3 million.

