TYPE OF WORK: HORIZONTAL GEOEXCHANGE

PAST PROJECT

Walmart Supercentre

WALMART SUPERCENTRE BURLINGTON ONTARIO

Technology transfer of the Spiderplow to apply to horizontal geoexchange allowed 15 km of geopiping to be installed in 5 days at a fraction of the cost of a conventional vertical borefield.

Year built	**2009**
Client	**Walmart Canada**
Building size	**135,000 SQ. FT.**
Contract size	**$60,000 CAD**
Project size	**$600,000 CAD**
System size	**15 km horizontal loop**

Our founding engineers (with previous firm) played a leading role in the world's first implementation of a horizontal Geoexchange system beneath a retail parking lot - a groundbreaking energy solution deployed at WalMart's Burlington Supercentre. In just five days, over 15 kilometers of Geoexchange piping were installed using SpiderPlow trenching technology, a method previously reserved for oil and gas applications. **This radically reduced the field installation cost and timeframe, transforming an uneconomical 40+ year payback into a viable sub-10-year return on investment.**

The system integrated rollout radiant floor mats, a custom super-efficient HVAC system with energy recovery ventilation, specialized air handling units with dehumidification and heat recovery, and a high-performance building envelope. Extensive TRNSYS modeling was used throughout design and post-occupancy phases to refine performance, verify energy savings, and guide HVAC system integration. The Burlington store went on to reduce its total energy consumption **by approximately 60%** compared to a typical Supercentre model, validating the effectiveness of the geo-exchange field and its hybrid integration with refrigeration heat recovery. The project remains a model for deep energy savings in big-box retail.

PROJECT INSIGHT: Careful coordination and on-site direction are essential during slab construction. In this case, close oversight ensured header pipes embedded in the concrete were not punctured by rebar, preserving system integrity and preventing costly rework.