



Corporate Campus

WESTJET'S CORPORATE CAMPUS, CALGARY ALBERTA



PROJECT INSIGHT: The concrete caissons must be filled from the bottom up to avoid damaging embedded borefield piping. Early coordination between structural and MEP disciplines is critical when integrating energy piles into foundation design.

Year built	2009
Client	WestJet Airlines, Calgary Alberta
Building size	314,000 sq. ft.
Contract size	\$80,000 CAD
Project size	\$600,000 CAD
System size	545 tons

Our team (with previous firm) led the geothermal system design for WestJet's iconic head office campus, delivering the first-ever implementation of energy piles in Western Canada. The system used structural caissons as dual-purpose thermal piles, embedding heat exchange piping directly into concrete foundations. **This innovative approach eliminated the need for conventional boreholes, reduced capital costs, and maximized heat transfer via the thermal mass of the building's deep foundation.**

A hybrid geexchange system was engineered to provide up to 545 tons of heating and cooling capacity, enabling year-round thermal balance through heat pump integration and on-site energy storage. The project achieved high energy savings and carbon reduction, contributing to the facility's LEED Gold certification and delivering long-term operational resilience. TRNSYS modeling informed lifecycle cost projections and validated energy performance, while the system's integrated controls optimized efficiency.

This pioneering design showcases the durability and effectiveness of energy pile-based thermal infrastructure leveled cost of electricity below prevailing utility rates, a rare and notable outcome for a public-sector campus at the time, it has been in operation for more than 15 years.

