



Location: Augusta, Maine

Completed: March, 2012

CASE STUDY

O'CONNOR GENERAL MOTORS DEALERSHIP

When planning the new 25,000 square foot facility, the owner of O'Connor GMC was concerned about the facility's operating cost as well as its potentially large carbon footprint. Standard rooftop air-conditioning and propane heating equipment would have resulted in a significant monthly operating cost. With that in mind, a full service geothermal solution was presented by ABM Mechanical of Bangor ME and NextEnergy. After understanding the short and long term cost savings coupled with the reduced environmental impact associated with its selection, a geothermal solution was the clear choice.

A small mechanical room, measuring 8 by 14 feet, houses all of the internal equipment

The Ground Loop

A NextEnergy designed ground loop was installed to accommodate the 40 ton heating and cooling load of building. The loop field was drilled and installed by PineState Drilling located in Athens, Maine. A vertical loop orientation was chosen due to space requirements as well as relative ease of install.

Heat Pumps

- 2 – NextEnergy/ClimateMaster 10 ton water-water heat pumps
- 2 – NextEnergy/ ClimateMaster 8 ton rooftop units with built in air ventilation
- 7 – NextEnergy/ClimateMaster Tranquility 27 water-air heat pumps ranging from 2-5 tons
- 2 – NextEnergy hot water buffer tanks for radiant heating system



O'Connor GMC will see a simple payback in under 3 years!

The Application

The showroom's heating is provided from a radiant in-floor system, fed by the water-water heat pumps, as well as the two rooftop units for cooling and second stage heating. The service area required a higher temperature in-floor system to account for the heat loss associated with the bay doors being regularly opened and closed. The higher temperature floor allows for quicker recovery times resulting in the ultimate comfort for customers.

The Result

When compared to a conventional system utilizing propane as a fuel source and air condensers for cooling the geothermal system will achieve a cost savings of 75% per year. After taking advantage of the Federal Tax Credits and Accelerated Depreciation, O'Connor will see a simple payback of going geo in 2.5 years! O'Connor has a new, state of the art, low maintenance facility, with their own energy source in its back yard.

- 18,000 sq/ft Building
- 40 ton heating and cooling load requirement 25,000 sq/ft Building
- Entire heating and cooling load is met by 13 NextEnergy geothermal units
- Vertical ground loops are located on the property
- Conveniently located in the dropped ceiling throughout the office areas are the 7 water-air heat pumps, providing both heating and cooling for individual offices and conference rooms, each controlled with a dedicated thermostat.



33 Dowd Road, Unit 1
Bangor, Maine 04401
USA
207-992-9250
abmmechanical.com

10 East 40th Street, Suite 1310
New York, NY 10016
USA
1-888-436-3200
nextenergyusa.com

