

EARTHENERGY™



The National Forest Millennium Discovery Centre



The National Forest Millennium Discovery Centre, sits in the midst of a 120 acre forest park in Moira, Leicestershire. This low energy, high tech building, was built on the former Moira Colliery Site.

The building was designed with the surrounding forest in mind. Giant 9.2 metre columns of wood, resembling trees, support the structure. The roof features filtered glass, which emulates the different colours of each season.

The Discovery Centre had a borehole based EarthEnergy system installed in the Spring 2000. The ground heat exchanger comprises 32 vertical boreholes, arranged as four groups of eight boreholes. Four sets of flow and return headers run back to the plantroom and are connected to a four stage, water to water COSFI heat pump, supplied by Clima-Gas. The two sides of this heat pump are connected to large hot and cold water tanks that provide for simultaneous heating and cooling in the building. Once the tanks have received their initial charge, additional heating or cooling requirements are met from the ground loop array. The EarthEnergy system is designed to meet the partial thermal energy loads of the building, with separate boiler and chiller systems meeting any additional requirements. The control system is designed to make optimal use of the ground loop system.

Ground Loop	32 x 50 metre boreholes
Heat Pump	2 x 157 kilowatt Cosfi
Distribution System	
Client	Heart of the National Forest Foundation
Mechanical & Electrical	Hoare Lea & Partners
Commissioned	February 2000