Eden Local Agenda 21 Cumbria
Green Build Fortnight 2007

Geowarmth Heat Pumps Ltd.

Geowarmth Heat Pumps Ltd attended Cumbria Green Build Fortnight events at Cockermouth School Eco Centre and the Cumbria Rural Enterprise Agency's offices.

Daniel Thompson and John Withers, from the Company, explained how ground source heat pumps extract heat from the ground, providing for all of a building's space heating and domestic hot water demands. They also described the installation techniques.

> A heat pump is an electrically powered device, which transfers some of the Earth's natural heat from outside a building to the inside. Typically, heat pumps recover heat from the air, the ground, or water. This is heat which has originated from the sun and has warmed the surface of the Earth via solar radiation.
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> Some heat pump systems can be operated in reverse to make buildings cooler in summer: in this mode the heat pump transfers heat from within a building to the outside.
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> A refrigerator works by a similar principle; having a simple, relatively low powered, heat pump.

In a ground source heat pump system there are three independent circuits: the ground loop, the refrigerant circuit and the building's heat distribution system. The circuits are connected via two heat exchangers within the heat pump, which transfer the low grade heat from the ground into useable (higher temperature) heat within the building.

A ground source heat pump is a very low carbon technology. The system is extremely efficient, with minimal maintenance requirements and lower running costs than other types of heating. Heat pumps offer the lowest CO_2 emissions of any method of heating a building.

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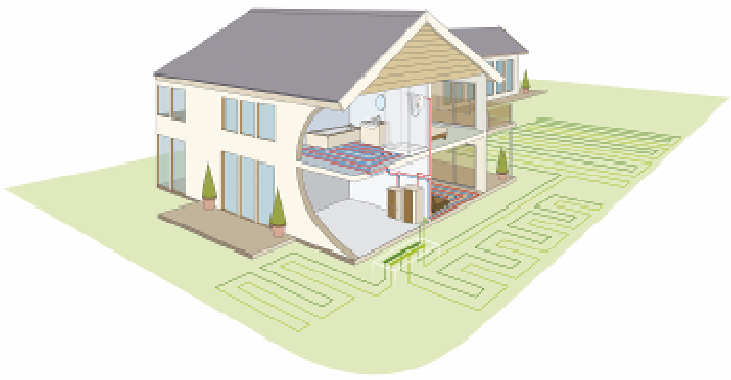

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