
What are ground source heat pumps? -Background-

Posted by Liesl - 2008/01/23 11:38

Ground source heat pumps (GSHP) are comprised by lengths of pipe buried underground which benefit from the absorption of heat from the Earth. These pipes usually take the form of closed and sometimes open circuits loops. These pipes contain an antifreeze substance as well as water which get pushed around these loops as to absorb the ground heat.

The closed circuit loop heat pump works much like a refrigerator. It is made up of three main parts: The evaporator, which extracts the heat from the water in the ground loop; the compressor which moves the refrigerant around the heat pump and compresses the gaseous refrigerant to the temperature needed for distribution; and finally the condenser which gives the heat to a hot water tank which then feeds the distribution system.

The open circuit systems operates on the same principles as the closed circuit one and can be installed anywhere where there is an available and suitable water supply, benefits are also similar.

These loops can be installed horizontally, vertically or in water pond/lakes depending on the availability of land and rock/soil type at the site.

The heat provided and recovered by these pumps is mainly used for space heating such as underfloor heating but can also be used for water heating.

All ground source heat pumps can provide both heating and cooling from the same system which can be swapped over just by a flick of an indoor switch.

Keep in mind that all this is a low environmental impact project and is also very efficient.

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