Using ETA Geothermal to Heat Your Home

Objective –

Provide warm and comfortable heat to your home at the lowest cost.

Principles Utilized –

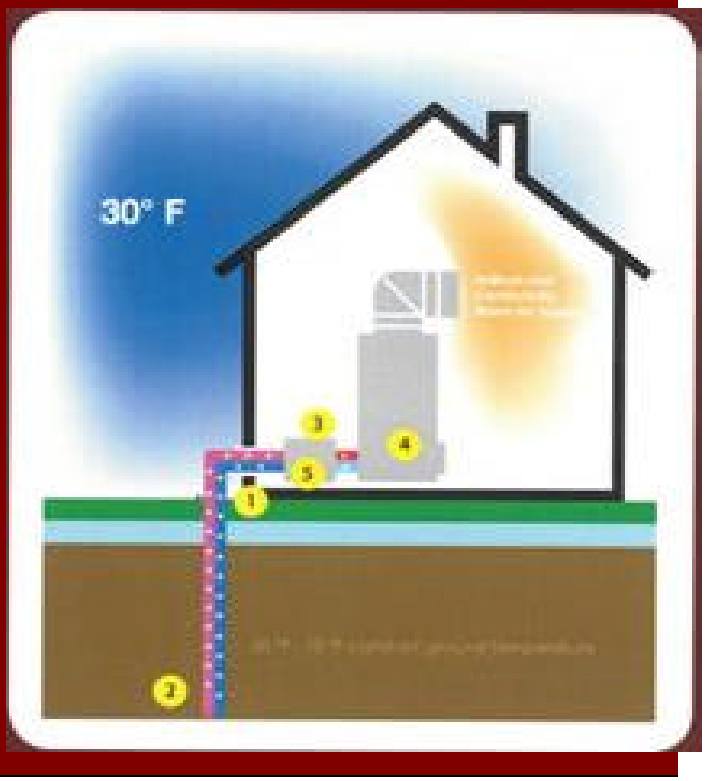
A. Heat will always travel to "cold." The heat from an object will naturally travel to an area with a lower temperature.

B. Any object will transfer heat at some specific rate. The higher the heat transfer rate of an object, the faster it will either absorb or reject the heat. ETA systems utilize a copper ground source heat exchanger as opposed to polyethylene ("PE") pipe. Copper has 1,000 times better heat transfer than PE, which provides ETA technology with a far greater heat transfer advantage within the underground geology. This means ETA systems need less excavation.

C. Expanding a refrigerant fluid will cause its temperature to drop.

D. Compressing a refrigerant vapor will cause its temperature to rise.

Note: A raised letter (e.g.[B]) refers to the corresponding principles outlined above.



1. ETA Geothermal unit sends an environmentally friendly cold refrigerant (R-410A) into a patent copper [B] based ground source heat exchanger (CGSHE)."

R-410A, the new environmentally friendly refrigerant leaves the ETA geothermal unit as a cold liquid, and is then circulated into the ground through ETA's patented CGSHE.

2. The earth naturally removes heat from the refrigerant.

Heat from the earth, which is warmer than the temperature of the refrigerant, is naturally absorbed by the cold refrigerant [A] The cold liquid refrigerant becomes warmer as it absorbs the earths renewable heat.

3. Efficient "phase-change" occurs.

As the refrigerant absorbs heat, a powerful phase-change occurs. This phase change results in the refrigerant changing from a cool liquid to a warmer vapor refrigerant.

4. Naturally warmes refrigerant sent back through ETA geothermal unit.

The warm vapor travels back through the ETA geothermal unit and is compresed into a hot vapor refrigerant. [D]

5. Heat provided to your home's air supply.

The hot vapor refrigerant is sent to the air handling unit. The cool return air from your home is sent through the air handler where it is blown over the hot vapor refrigerant. [A].

As the cool feeling return of air in your home absorbs heat, the resulting warm and comfortable air is supplied back to your home, the hot vapor refrigerant cools and experiences another phase change. The hot/warm vapor refrigerant becomes cool/cold liquid refrigerant and is sent back though the ETA geothermal unit into the warm ground.

This process is repeated until your desired indoor air temperature is achieved, with the earth freely providing the actual heating work.

ETA geothermal systems can also be utilized to heat water as part of a residential radiant system. Using ETA geothermal technologies as part of your radiant design is much more efficient than conventional electric or fossil fuel based designs. ETA systems can also heat your pool at a fraction of the cost of traditional systems.

ETA
EARTH TO AIR SYSTEMS

Distributed and Installed by:

Geothermal Technologies, LLC
PO Box 1115
Weston, CT 06883-1144
Telephone: (203) 221-1144
Email: GeoTechLLC@aol.com
Website: www.earthtoair.com