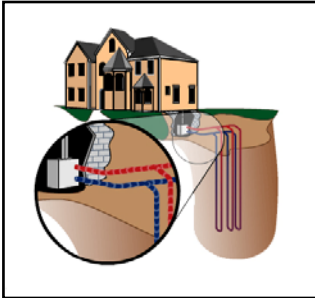


## Geothermal Heat Pump Systems



Geothermal heat pumps use the earth's relatively stable temperature to shed heat in the summer or to gain heat in the winter. By using the natural energy stored in the earth the home owner can save money and eliminate their dependence on fossil fuel. These systems can be used for any size home that requires heating and cooling. Geo can also produce domestic hot water for additional energy savings.

The closed loop Geo system consists of three basic components:

1. The indoor heat pump
2. The ground loop
3. The flow center that interconnects #1 and #2.

The heat pump works like a reversible refrigerator removing heat from one location and placing it in another location. The ground loop serves as the heat exchanger between the earth and the heat pump. The loop length can vary from 250 – 1000 feet per ton depending on soil conditions. The ground loop installation can range from \$4,000 to \$11,000 to supply a 3 ton system. Equipment installation costs vary according to size and optional control packages. Options like variable speed blowers and multi-speed compressors can substantially improve comfort in areas where heating and cooling loads are quite different.

A high degree of occupant comfort combined with high efficiency and low operating costs makes these systems a viable option for anyone considering an upgrade or for new construction. According to the EPA, geothermal heat pumps can save a homeowner 30 – 70% on heating costs and 20 – 50% on cooling costs over conventional systems. There are other attractive incentives for geo conversions such as low cost financing and rebates offered by the state as well as federal tax credits.