

# Virginia Energy Services

## Geothermal Heating and Cooling Design and Installation

### What is Geothermal

Geothermal heating and cooling is an innovative technology which uses the earth to provide comfort conditioning. It uses the earth's ability to store and reject heat to condition homes and commercial and governmental facilities. It is the most efficient and economical heating and cooling system you can buy today. A typical geothermal system can pay for itself in five to seven years while providing many other benefits. It is also endorsed by both the Department of Energy and the Environmental Protection Agency.

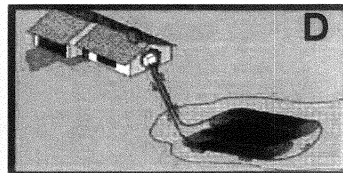
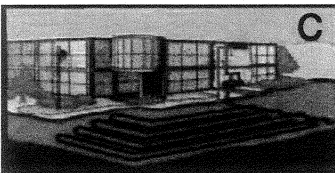
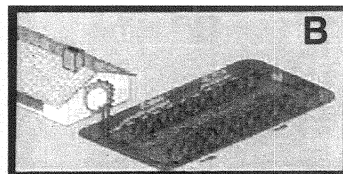
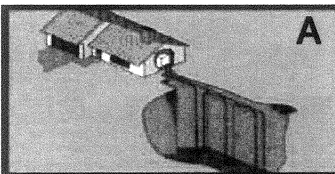
### How it works

Geothermal systems are effective because temperatures below the surface of the earth remain around 60°F. In the winter, 60°F is relatively warm when compared to outside air temperatures. In the summer 60°F is reasonably cool. This gives the geothermal system a great advantage over traditional air-to-air heat pumps and air conditioners which have to operate under more adverse conditions.

The geothermal system extracts heat from the earth by circulating fluid through piping installed in the ground. In the winter, the fluid travels through the piping gaining heat from the earth. Once this fluid reaches the geothermal unit, the heat is extracted from the fluid and pumped into your home. In the summer, the process is reversed – heat is extracted from your home and rejected to the earth.

### Benefits of Geothermal

- ◆ Most efficient system available
- ◆ Lowest life cycle cost
- ◆ Very low maintenance and service requirements
- ◆ No outdoor equipment exposed to the elements
- ◆ Quiet operation
- ◆ Environmentally friendly
- ◆ Warm air temperatures in winter
- ◆ No combustion or carbon monoxide inside
- ◆ No refrigerant or gas lines to run
- ◆ Provides comfortable environment



Common geothermal loop configurations – A) Vertical B) Slinky C) Horizontal D) Lake Loop

### How to get started

Virginia Energy Services is an experienced geothermal design/build contractor. We can provide a turn key system or work with your existing mechanical contractor to provide you the most efficient heating and cooling available.

Contact us at:

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International Ground Source Heat Pump Association Member



Geothermal Heat Pump Consortium Member