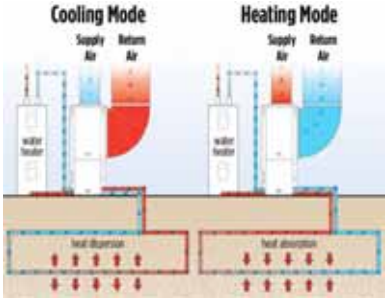
The ground is able to maintain a higher rate of temperature consistency because it absorbs 47% of the suns energy (heat) as it hits the Earth's surface. Our geothermal systems are able to tap into this free energy with an earth loop which is essentially flexible piping buried around your home. This technology is then used to provide your home or office with central heating and cooling.



Heating
During the heating cycle, a geothermal system uses the earth loop to extract heat from the ground. As the system pulls heat from the loop it distributes it through a conventional duct system as warm air. The same heat energy can also be used for a radiant floor system or for domestic hot water heating.

Cooling
In the cooling mode, a geothermal system air conditions your home by reversing the heating process. Instead of extracting heat from the ground, it is extracted from your home and either moved back into the earth loop, or used to preheat the water in your hot water tank. Once the heat is removed from the air, it is distributed through the duct system in your home.

Geothermal Earth loops

Geothermal Earth Loops come in several different configurations depending on space availability and soil properties. Chances are at some point you have either stood over, or walked across a geothermal loop field. Loop fields can be located under parking lots, landscaped areas, or any number of other locations. All Earth loops use high-density polyethylene pipe to circulate either water or an antifreeze mixture. All joints and connection fittings are thermally fused to prevent leaks and most piping comes with a 25 year or longer warranty.

Vertical loops
Vertical loops utilize bore holes drilled to an average depth of 250 feet. Once the loop pipe is inserted into the bore, it is grouted using a Bentonite mixture for maximum thermal conductivity. When space is a limited, vertical loops are the most common type of geothermal loop installed.

Horizontal Loops
Horizontal loops utilize trenches dug to an average depth of four to six feet. As one of the more cost effective loops to install, horizontal loops are commonly found in open fields, parks or under parking lots.

Lake Loops
Lake loops utilize a "slinky" assembly of geothermal loop piping placed at the bottom of a pond, lake, or other large body of water. An extremely cost effective loop system, lake loops are an easy alternative if the option is available.

Well (Open Loop) Systems
Most commonly known as "Open Loop", well systems pump water out of a nearby body of water or water well, and then discharge the water into another body of water or water well. Well systems usually employ a plate heat exchanger inside the building to keep the building water loop separated from the well water. This prevents any contaminates from affecting unit performance and extends system life. Well systems are often the most efficient as the well water is always at the same temperature year-round.