

RESIDENTIAL

# WORLD LEADER

**"USE THE EARTH FOR  
YOUR ENERGY NEEDS"**

## GEOTHERMAL SYSTEMS

INDUSTRIAL • COMMERCIAL • RESIDENTIAL

RELIABLE    ECONOMICAL    RESPONSIBLE



**K&M SHILLINGFORD, INC.**

[www.kms-intl.com](http://www.kms-intl.com)

# HOW DOES IT WORK?

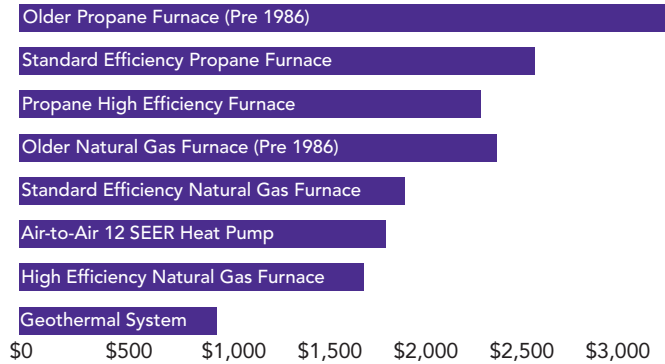
**Geothermal Basics: Down to Earth Technology.** The Earth absorbs almost 50% of all solar energy and remains a nearly constant temperature of 50°F to 70°F depending on geographic location. Working with a customized underground loop system, the geothermal unit utilizes this constant temperature to exchange energy between your home and the Earth as needed for heating and cooling.

In winter, water circulating inside a sealed loop absorbs heat from the Earth and carries it to the geothermal unit. Here it is compressed to a higher temperature and sent as warm air to your indoor system for circulation throughout your home.

In the summer, the system reverses and expels heat from your home into the cooler Earth via the loop system. This heat exchange process is not only natural, but is a truly ingenious and highly efficient way to create a comfortable climate in your home.



## TYPICAL OPERATING COST COMPARISONS



## HOW CAN WE USE GEOTHERMAL?

- **Heating:** The system will provide comfortable warm air from your ductwork to heat your home and is more comfortable than conventional heating systems
- **Cooling:** The system will provide comfortable cool air to air condition your home. It provides greater comfort than a conventional system because it removes more humidity creating a cool drier environment, perfect for comfort
- **Domestic Hot Water:** The system will provide free hot water in the summer and a portion in the winter. These savings will be greater than 50% of your hot water bill
- **Radiant Floor Heating:** The system will make hot water that circulates through tubing under your floor. Radiant Floor Heating is the most comfortable heating available
- **Swimming Pool Heating:** This option will utilize the heat removed from your home in the cooling season and provide heat for your pool, eliminating an expensive gas heater
- **Chilled Water:** The system can make chilled water for use in air conditioning or manufacturing processes
- **Snow Melting:** This system option provides the ability to melt snow from your walkways, patios and driveways

# WHY K&M SHILLINGFORD?

K&M Shillingford Inc. is the oldest Geothermal Heating and Air Conditioning Company in the United States. We have designed, installed and provided service for thousands of satisfied geothermal customers for over 30 years. We have over 350 years of combined experience!

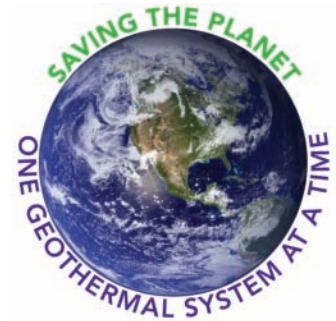
Our customers rely on our experience to provide them with a geothermal system that delivers **comfort, energy savings** and **reliability**. Whether you are building a new home or simply upgrading your heating and air conditioning system K&M Shillingford has the experience and proven track record to meet or exceed your expectations.

K&M Shillingford will provide you with the proper information so that you can make the best decision for your home or business. Since K&M Shillingford provides you with the design, economic analysis, installation, and service from a **Single Point of Responsibility** you don't have to worry about the performance of your new geothermal system. We have the best trained and experienced technicians to handle the complete project.

K&M Shillingford has played an active role in the geothermal industry that we see today. Our knowledge of the industry has been shared with homeowners, business owners, building contractors, universities, technical schools, equipment manufacturers, utility companies, local, state and federal government, architects, engineers and several others.

## BENEFITS OF A KMS GEOTHERMAL SYSTEM

- **Proven Technology:** Most energy efficient and cost effective space conditioning system available according to the EPA and DOE.
- **Efficient:** Reduced heating and cooling costs up to 60% over conventional equipment.
- **Comfort:** Geothermal heat pumps provide higher indoor comfort than conventional equipment in both summer and winter seasons.
- **Reliable:** Lower maintenance costs due to no outdoor equipment. All equipment is located indoors.
- **Long Life:** Expected equipment life of 25 years versus 13 years for conventional equipment.
- **Responsible:** The most environmentally friendly of all heating and cooling systems by using the natural energy of the earth.
- **Green:** Geothermal technology is the lowest in CO2 emissions and HCFC22 emissions of all heating and cooling systems.
- **Great Investment:** The best investment! On a new home, the monthly savings will exceed the increased mortgage costs. The return on investment will be well above average investments.
- **Quiet:** No outdoor equipment thereby eliminating undesirable visual and noise problems and effects of weather extremes.
- **Satisfaction:** Owners of geothermal heating and cooling systems show the highest level of customer satisfaction. They are excited about their systems.
- **Smart:** Increased real estate value in the home. Resale value is increased with a geothermal heating and cooling system.
- **Solid Future:** Great investment for retired or people on a fixed income. A sure fire hedge against inflation.



A typical geothermal heat pump

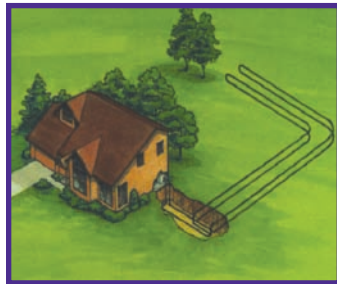
**YOU SEE A YARD. WE SEE A POWER PLANT!**

# GEOHERMAL LOOP TYPES



## VERTICAL LOOP

Vertical loops are used when space is limited. Holes are bored using a drilling rig, and a pair of pipes, with special u-bend fittings on the ends, is inserted into the holes. A typical home requires three to five bores with about a 20-foot separation between the holes.



## HORIZONTAL LOOP

Used where adequate land is available, horizontal loops involve one or more trenches that are dug using a backhoe or chain trencher. Polyethylene pipes are inserted, and the trenches are backfilled. A typical home requires 1/4 to 3/4 of an acre for the trenches.



## POND LOOP

If an adequately sized body of water is close to your home, a pond loop can be installed. A series of closed loops can be coiled and sunk to the bottom of a nearby pond. A 1/2-acre, 8-foot-deep pond is usually sufficient for the average home.



## OPEN LOOP

An open loop is used where there is an abundant supply of quality well water. The well must have enough capacity to provide adequate flow for both domestic use and the Water Furnace unit.

## FASCINATING FACTS ABOUT GEOHERMAL SYSTEMS

- The first recorded geothermal system was a 1912 Swiss patent.
- The ground absorbs 47% of the sun's energy that reaches planet Earth. This amount of energy represents 500 times more than mankind needs every year.
- About half a million geothermal systems have been installed since 1980.
- Installing a geothermal system in a typical home is equal, in greenhouse gas reduction, to planting an acre of trees, or taking two cars off the road.
- Current geothermal installations save more than 14 million barrels of crude oil per year.
- If one in 12 California homes installed a geothermal system, the energy saved would equal the output of nine new power plants.

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