

COMMERCIAL

WORLD LEADER

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

GEOTHERMAL SYSTEMS

INDUSTRIAL • COMMERCIAL • RESIDENTIAL

RELIABLE

ECONOMICAL

RESPONSIBLE



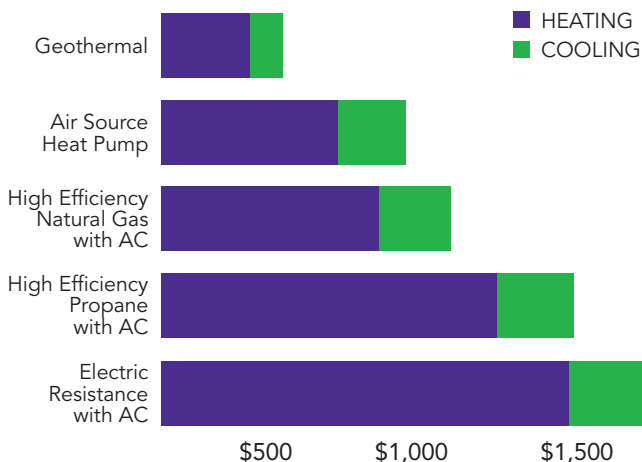
K&M SHILLINGFORD, INC.

www.kms-intl.com

WHAT ARE THE ADVANTAGES OF USING GEOTHERMAL SYSTEMS?

- Utility savings up to 60%
- Increased comfort
- High Return on investment
- Ideal for Industrial and Commercial applications
- No outdoor equipment, no noise
- No vandalism
- Lower maintenance and repair costs
- Balanced building loads energy transfer
- Long system life
- Best life cycle cost
- Geothermal piping has a 50 year warranty
- Green technology, ecologically responsible
- Endorsed by HUD, DOE, EPA, DOD, USDA, and utilities
- The Department of Energy and the EPA recognized geothermal systems as the most environmentally friendly, cost effective and energy efficient heating and cooling technology available
- May be applied for swimming pool heating, radiant floor heating, hot and chilled water, domestic hot water and other applications
- Tax credits available

GEOTHERMAL SYSTEMS COST LESS TO OPERATE



HOW DOES IT WORK?

A prime source of system heat in winter is heat stored five feet or more below the earth's surface. When the building demand calls for heating, water pumped through the loop absorbs heat from the relatively warm earth. This heat is moved via the loop into the building where geothermal heat pumps direct warm air to those areas calling for heat.

To cool, the heat pump (a compressorized refrigeration system) removes heat from the building and transfers it into the temperate earth via the loop. Because of the relative cool temperature on the earth, heat is readily and efficiently absorbed from the loop. This means that geothermal heat pumps in a geothermal system can offer substantial operating savings over other types of air conditioning systems which must reject heat into hot outside air.

Near constant ground temperature all year around is the key to enhanced heating and cooling performance of your Commercial GeoThermal Water Source Heat Pump System.



Vertical Ground Loop System: Vertical Ground Loop may be installed in vertical bore holes 150 to 500 feet deep (46 to 152 m). Each hole contains a single loop of pipe. After the pipe is inserted, the hole is backfilled (or grouted). The number of loops required depends on ground conditions, air conditioning and heating load and the depth of each hole. This design is well suited for retrofit applications where landscaping is already complete and minimum disruption of the site is desired. The completed loop is concealed below ground.

WHY K&M SHILLINGFORD?

K&M Shillingford Inc. (KMS) is the oldest geothermal Design Build Mechanical Contracting firm in the United States. The company has played a major role in the development of geothermal technology, applications, marketing, sales, education and training for the industry. For the last thirty years KMS has shared their knowledge with universities, technical schools, equipment manufacturers, utility companies, government agencies, architects, engineers and the general public.

KMS has a national reputation for being the innovators of several designs and procedures that are used in the industry today.

As a result of being the world leader in geothermal innovation, KMS has the most extensive resume of industrial, commercial and residential customers in the industry. Our customers include military bases, low income HUD projects, airports, universities, high schools, primary schools, commercial buildings, federal building, churches, museums, theaters, prisons, industrial facilities, concrete plants, U.S. post office buildings, casinos, banks, utility companies, hospitals, retirement homes, health clinics, hotels and a variety of additional system types and applications.

KMS has been a leader in providing geothermal energy field leases to customers to overcome the initial first added capital required for geothermal systems. We have several schools and universities paying a monthly fee or metered fee of which is paid for by the energy savings of the geothermal systems.

The combined design, construction, and service experience at KMS is second to none in the geothermal industry. KMS intends to continue to be a leader in the geothermal industry for many years to come.

SERVICES PROVIDED

K&M Shillingford Inc. offers our clients a complete geothermal HVAC solution for their projects. We will work together with the building owner, architect, and engineering staff to provide the most cost effective geothermal system for the building application needs.

- Complete turnkey design/build geothermal HVAC systems including design, installation, and follow up services
- Design and installation of ground heat exchangers including vertical, horizontal, lake loops, open loops, and hybrid systems
- Energy performance contracts
- Capital investment and system financial analysis
- Energy field lease purchase agreements to provide the energy field up front and paid for with energy savings
- Project financing
- Troubleshooting services
- Start up and commissioning



YOU SEE A PARKING LOT. WE SEE A POWER PLANT!

GEOTHERMAL SYSTEMS

FOR THE DESIGN OF AN IDEAL HEATING AND COOLING SYSTEM THAT OFFERS INDIVIDUAL ZONE CONTROL, RECOVERS AND UTILIZES EXCESS HEAT FOR SPACE CONDITIONING OR ALTERNATIVE USES, AND SERVES MULTI-TENANT NEEDS SIMPLY AND EFFICIENTLY, THE GEOTHERMAL HEAT PUMP SYSTEM IS THE RIGHT CHOICE.

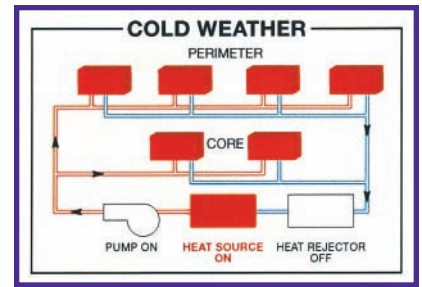
Purchasing a KMS geothermal system is not only an investment in affordable comfort, but also an investment in the preservation of our environment for generations to come.

The U.S. Environmental Protection Agency recognizes geothermal systems as the most energy-efficient, environmentally friendly and cost-effective comfort systems available.

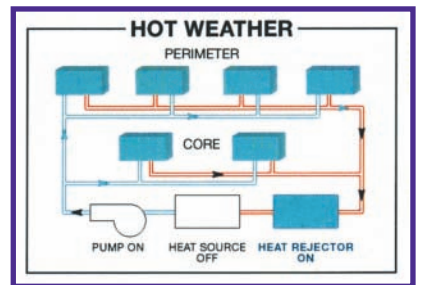
The "secret" of this clean, efficient operation is based on the earth's ability to store heat. In fact, 47 percent of the sun's energy that reaches our planet is absorbed into the earth. This represents 500 times more energy than mankind needs every year. This unlimited source of energy can provide your business with clean and affordable comfort year-round.

Installing a geothermal system in a small building is the environmental equivalent of planting 750 trees, or taking two cars off the road. That's because geothermal systems burn no fossil fuels and emit no carbon dioxide, which has been associated with the greenhouse effect and global warming. The Geothermal Heat Pump Consortium says current geothermal systems save more than 14 million barrels of crude oil every year. And because the only energy needed to run geothermal systems is a small amount of electricity, they reduce the need for new coal-powered electric power plants, which means cleaner air and less acid rain.

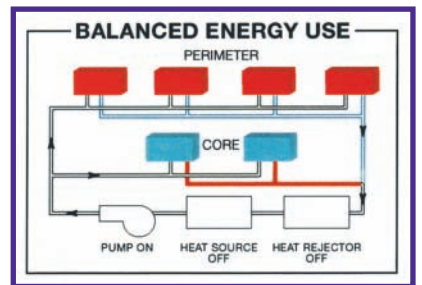
In cold weather, the heat pump removes heat from the water loop via the unit's specially designed refrigerant-to-water coaxial heat exchanger and transfers it to the air.



In hot weather, the unit removes heat from the air in the zone and transfers it back into the water loop through the coaxial heat exchanger. The circulation of water in the closed-loop moves heat energy from zone to zone for use where needed. Since zones have different cooling and heating requirements, the system balances energy use based on the needs of the entire system.



During certain times of the year, the constantly changing combination of units in the heating and cooling operating modes may balance the system so that no additional heat injection or rejection is required to maintain the water loop at satisfactory operating temperatures.



K&M Shillingford is the world's leader in geothermal heat pump technology. We offer a broad range of systems for commercial, industrial, and residential applications - for new construction, expansion, or renovation. Our systems are the right choice for the design of ideal heating and cooling systems that offer individual zone control and recover and utilize excess heat simply and efficiently.

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