

## **New System Uses the Earth's Temperature to Heat, Cool**

By C.L.Chase of the *The Montgomery Post*, Wednesday, October 21, 1992

A Collegeville resident is the first in this area to have a new system installed that transfers heat to and from the earth to heat his home in the winter and cool it in the summer. Charles Zak of the 300 block of Level Road said the Great Aire Comfort System, which Jay Gress Inc. of Conshohocken installed in early September, should shave about \$125 per month from his electric and oil bills. Philadelphia Electric Co. will also be giving him a discount because he uses ground source. Zak said the new system replaces an aging oil burner coupled to a hot air system and a central air conditioning unit.

The new system, manufactured by Advanced Geothermal Technologies of Reading, uses small-diameter insulated copper pipes containing a refrigerant, which are inserted into the ground. At depths of 10 feet or greater, the earth temperature in this region remains at about 52 degrees F year-round. In the winter, the constant earth temperature may be approximately 30 or more degrees warmer than the outside air temperature, and this difference can be used to heat the interiors of homes and businesses. In the summer, the earth temperature may be approximately 30 or more degrees cooler than the outside air and unwanted heat can be removed from home and business interiors and transferred to the cooler earth.

The system also has an optional hot water heating unit, which the manufacturer claims can make domestic hot water at less than one-third the cost of using an electric hot water heater. The company claims that a family of is with a yearly hot water electric utility cost of \$700 can save more than \$500 per year. It also projects savings of over \$600 for heating and cooling or a total of over \$1,100 per year.

Michael W. Moore of Norristown, the local sales representative for Advanced Geothermal Technologies, said a rock drill is used to put in four, 60-foot long U-tube earth taps per ton of cooling. The average home needs 12 to 16 such taps, he explained. Moore said the manufacturer considers its system to be more efficient than conventional heat pumps and does not project a need for either supplemental heating or cooling.

The system works with new construction as well as existing homes and buildings. As for payback, Moore estimated up to a three-year period for the additional cost of the system versus a conventional heat pump system. For oil or gas systems, he put the figure at four to five years.

The Great Aire Comfort System has been on the market for three years following a five-year development period. Jerry Keller, service manager for Jay Gress Inc., which has been in business for nearly 60 years, said that his firm has taken on The Great Aire Comfort System as a new line. Gress, a heating and air-conditioning contractor, also sells fuel oil, gasoline, and motor oil. "We're working on other installations," Keller said. "The Collegeville job at the Zak residence took us about four days to complete. It's an economical, trouble-free system, good and reliable, and we stand behind it with service as needed."