

Health House Energy Estimate Fact Sheet

Heating load calculations provided by the Ohio Department of Energy HERO program estimate the total home heat loss for the heating operation at 83,800 BTUH and the Air-Conditioning load at 63,600 BTUH.

Energy estimates using an average First Energy winter electric rate of \$0.05/kWh winter and \$0.11/kWh summer for « All Electric Homes » and a year round average of \$0.11/kWh for homes with gas heat. Natural gas rate as estimated from Columbia Gas is at \$0.65/Therm.

	<i>Heating</i>	<i>A/C</i>	<i>Hot Water</i>	<i>Fan</i>	<i>Total</i>
WaterFurnace Geothermal with domestic hot water assist	\$395	\$394	\$213	\$111	\$1,113
High Efficiency AirSource Heat Pump with conventional Domestic hot water	\$873	\$723	\$399	\$643	\$2637
90% Eff. Natural Gas Furnace Gas domestic hot water High efficiency A/C	\$1,006	\$642	\$185	\$1,027	\$2,860

- **Constant fan is essential for an air filtration and heat recovery ventilator operation. The WaterFurnace system uses variable speed fan motor which operates at a 30 to 40% saving vs. Conventional fan motors.**
- **Differences between the « All Electric » winter and summer rate and fossil fuel rates allow the WaterFurnace geothermal system to operate at a 60 to 62% savings vs. High efficiency natural gas and conventional air source heat pump.**
- **The WaterFurnace geothermal system shows a 58% savings when compared with a conventional air source heat pump.**
- **The WaterFurnace system operates at a cooling efficiency of up to 18.9 BTU/Watt and a heating efficiency of up to 360% at closed loop temperatures.**
- **Approximately 75% of the heating and cooling energy used on the Health House is obtained free from the earth by way of 16 closed loop vertical heat exchangers drilled in the backyard. A non-toxic antifreeze solution transfers heat from these heat exchanger wells to the geothermal unit. Inside the home, the geothermal unit uses a refrigerant gas, (R-22) and a compressor to amplify the temperature to provide comfort heating and cooling to the home.**
- **The WaterFurnace geothermal system provides free domestic hot water all summer long as a side of air conditioning. In the winter the system continues to provide hot water along with heat to the home at one-third the cost of operating an electric hot water heater.**