

“Green” Features Include Geothermal Heating and Cooling

This home has a number of “green” features—both passive and active, all well proven and reliable. The three-foot roof overhangs provide extra shade for windows during the summer. The 75-foot span white oak tree adjacent to the home to the southwest shades much of the roof from the summer sun. In the winter, as the sun is at a lower angle and the tree has shed its leaves, plenty of warming sun streams through the south and west-facing windows. All windows are dual-pane, and many are low-level awning windows—at just the right height off the floor to give maximum benefit of the cooling summer breezes that ventilate the home.

Most significantly, the home features one of the most energy-efficient heating and cooling systems available: an Energy Star-rated **Geothermal system**.

This proven technology system uses the constant temperature of the earth as its source, which reduces annual heating/cooling bills by up to 70% less than what a conventional heat pump system would cost to deliver the same temperature control.

The cost to heat and cool this 3,570-sq.-ft. home has been **less than an \$70 per month** on average, at current electricity prices. Some of the savings are due to the natural summertime cooling effect, being at 3,100 feet elevation, meaning there is only occasional call for air conditioning. However, winter months are also a few degrees cooler, requiring a bit more heating than a home in town, which is a thousand feet lower in elevation. Most of the operating cost savings are certainly due to the **Geothermal System**.

The efficient, four-zone, single unit system is ideally load-balanced and is compactly and entirely housed in the Lower Level mechanical room. Unlike a conventional heat pump system, there is no noise-making outside unit. The system runs quietly and efficiently, and has been trouble-free through its four-plus years of service.

The blower is seldom heard in any room, due to the sophisticated microprocessor-controlled 3-stage air handler and 2-stage compressor system. The system delivers precisely the optimum level of heating and cooling, minimizing wasted energy usage. Thermo-

stats on each level of the home are all set independently. Air returns in every closed room ensure unrestricted air movement, even when doors are shut.

The original owner particularly appreciated the virtually silent operation in the home theater (which has its own thermostat).

The manufacturer, WaterFurnace International, is a \$100 million company, which has manufactured residential and commercial **Geothermal systems** for over 25 years. This unit is one of hundreds installed over the years by Bullman Heating & Air, one of the most reputable such companies in Western North Carolina. Over a million **Geothermal Systems** are in operation in the U.S.

More information on this elegant, efficient, comfortable system and the principles of operation is available here: <http://www.waterfurnace.com>

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