

Vintage 1913 Brick Colonial Home

Approximately 4,950 square feet – Auburndale, MA



THE PROJECT

Our Client purchased a 100-year old brick colonial that was in rough condition. They undertook a gut renovation of the structure updating windows and insulation. Achieve Renewable Energy, LLC. was selected to install a geothermal heating and cooling system. Because our Client wanted groundwater for irrigation and to fill a pool, Achieve designed the geothermal system using a Standing Column Well (SCW). The SCW supplies the geothermal equipment with groundwater and also supports irrigation and the pool. The availability of a private water source saves our Client water and sewer charges.

Together with our Client, Achieve selected the WaterFurnace 7 Series ground source heat pump

- The 7 Series is designed to be highly efficient, using variable speed motors for the compressor and fan.
- A variable-speed pump was also selected for the well. The 7 Series is also very adept at supplying multiple heating and cooling zones.
- 7 Series geothermal unit supports six different heating and cooling zones.
- Most of Achieve's geothermal installations include GSHPs supplying multiple zones. This is cost-effective and energy efficient.
- There are clear advantages to dividing this nearly 5,000 square foot home into multiple zones that are maintained at different desired temperatures.

THE RESULTS

Below is a screen shot from the Internet connection to the geothermal equipment. You can see in the Thermostat Summary section, that the one 7 Series geothermal unit supports six different heating and cooling zones. In the second graphic, we see the energy use for the geothermal equipment over a one-year period. The average monthly electrical use by the geothermal equipment is less than \$100. The pump in the Standing Column Well is not controlled by the WaterFurnace equipment so the electrical use for that pump is not included in the graphic. Typically, in geothermal installations, pumping energy increases electrical use by less than 10%. The energy use of this more than 100 year-old house is a model for reducing energy demands in New England.

