

Recently Renovated Home

Approximately 5,000 square feet – Dunstable, MA



THE PROJECT

Our Client expanded a family home in Dunstable, MA. The newly expanded home is approximately 5,000 square feet. Our client had available land and good digging conditions. Achieve took advantage of this by designing and installing a ground heat exchanger using a horizontal closed loop. The horizontal closed loop can be less expensive to install if there is available land and favorable conditions for excavation. A surprising amount of space can be needed for a horizontal installation, so it is not the first choice in more urban areas.

Our ground source heat pump (GSHP) design utilized a single WaterFurnace 7 Series GSHP to heat and cool four zones in the home. A separate WaterFurnace 5 Series GSHP is used to provide all the domestic hot water for the home.

THE RESULTS

Use of fossil fuels has been completely eliminated. Our client also installed an approximately 11 kW solar photovoltaic array. The ground mounted solar system and a garden were installed on top of Achieve's horizontal closed loop ground heat exchanger making that plot of land particularly sustainable. The solar system provides all the electricity used by the geothermal equipment and most of the use by the rest of the house. Geothermal and solar go very well together. In fact, for each kilowatt of electricity generated by the solar array and used by the GSHP, over 4 kilowatts of thermal energy are delivered to the house. The geothermal system can be viewed as an amplifier for the solar electricity.

