

Ground-Source Heating and Cooling

Gay's Greek Revival, Revived for the Modern Age!



From Fuel Oil to Vertical Geothermal 2016 Ithaca Retrofit Case Study



“I consider all of my clean energy investments part of my financial security during retirement. By greatly shrinking my utility costs, I will be more economically resilient even in the face of our uncertain times.”

Gay, homeowner

Project Specifics:

Area of home:	1,440 square feet
Age of home:	Built in 1810
Era of home:	Greek Revival
Installer partner:	NP Environmental
Other Info:	No preparatory work to the home envelope was needed before installing the geothermal system, as insulation and air-sealing were updated years earlier.

New Systems:

TTherm 2-ton geothermal sized at 90% of capacity

- Gay's new TTherm 2 ton geothermal allowed her to retire her fuel oil forced air furnace, saving her considerable money and work.
- She still likes to have the cozy wood stove going on the coldest days of the year and for backup in case the electricity grid goes down.

Gay has been working to fight climate change in her professional life since the 1990s, progressively shrinking her carbon footprint over time. She's had two rounds of insulation and air sealing done on her 200-year-old home. She initially invested in an on-demand water heater and then added solar electric in 2008, switched to a solar hot water heater in 2012, and installed her geothermal ground loop in 2016!

Cost / Usage:

Before: \$1200 / year

After: \$700 / year

Project Cost (reflects 2016 incentives):

Cost Category	Initial Cost	Incentives	Final Cost
Installation of Vertical Geothermal Ground Loop and interior units	\$17,885	30% Federal Tax Credit	\$12,520

Project Specifications

TTherm Geothermal system 2-ton,
Ecobee smart thermostat, Aprilaire model 600 whole house humidifier,
TTherm Auxiliary Strip Heat

Project Highlights:



Year-Round Comfort with Heating, Cooling, and Dehumidification



Major CO2 Reductions



Lower Energy Bills

Gay has celebrated her transition away from fossil fuels every day for the past four years. She got rid of a stinky fuel system and aging large fuel tank in her basement and now has a quiet and hyper-efficient heating system powered by solar electricity.

What Gay is extra glad about is the whole house air conditioning it provides. The installation company ran an extra duct up to her second-floor office, knowing that it would need a little extra help to cool compared to heating, and that space stays comfortable even on the hottest days.

She uses the geothermal system for even more of her heating than her prior system, and the house now only requires burning one cord per year, compared to 2–2.5 cords previously. This has resulted in a significant labor savings. Now, Gay only uses the woodstove in the coldest weather or when guests occupy that area of the house.

For questions about this project or program, contact:
607-500-HEAT or visit HeatSmartTompkins.org

