Air-Source Heat Pumps
Jonathan and Rebecca’s Net-Zero Beebe Lake Home

From Steam to Air-Source Dream!
2018 Ithaca Retrofit Case Study

Major energy efficiency improvements, year-round comfort, and aesthetically pleasing design.

Homeowner quote: “One of the things we were most concerned with at the very beginning was marring the look of the house....The radiators are pretty and integrated into the house and the way we've furnished takes them into account as well. We thought having plastic blowers would be an aesthetic detriment...but we got used to them very quickly.”

- Jonathan, Homeowner

Project Specifics:

Area of Home: 2,800 sqft
Age of Home: Built in 1902
Lake House
Installer Partner: NP Environmental

Other Info: The home originally heated (without any cooling) via 13 radiators throughout the home, which were replaced by just 2 outdoor and 6 indoor air-source units

Previous Systems: Natural Gas Steam-Boiler Fed Radiant Heat

Heating: The home was originally heated by coal, and then by a steam boiler located in the basement and distributed via radiant heat.

Cooling: The home did not have A/C before the two air-source heat pumps were installed.

New Systems: 2 Outdoor Air-Source Units, Each Connected to Three Blower-Heads in the Home

Jonathan and Rebecca wanted to improve their home’s energy performance by replacing their steam boiler with something more environmentally friendly and efficient, reducing their carbon footprint, and adding cooling features into their space.

Aesthetics played a major role in their considerations and felt that, while the air-source indoor units did not fully fit with their taste, they were easy for the eye to get used to, and well worth it by cutting their indoor unit needs in half from 13 radiators to 6 air-source heads.
Jonathan’s home was ready to accept city gas at a very low price and with little necessary maintenance. Though natural gas would have been a more affordable option upfront, Jonathan and NP Environmental decided that a ductless air-source installation would be the right fit for a few reasons. The first, geothermal systems cost more money to install and ended up not being feasible with the geology of the property anyway. Another reason was the reduction of carbon emissions and addition of cooling and dehumidifying features all included in the air-source units.

The bottom line for Jonathan was doing what was best for the environment. In this case, and many cases like this, what is best for the natural environment is also best for the livability of the home’s indoor environment. Unlike this case, many people who switch from fossil fuels to heat pumps can expect operational savings on energy bills and may feel economic relief immediately!

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