

A photograph of a two-story house with green siding and white trim, set in a winter landscape with snow on the ground and bare trees. The house has a gabled roof, a chimney, and a bay window on the second floor. The text is overlaid on the image.

Air-Source Heat Pumps

122 Judd Falls Road

June 2020

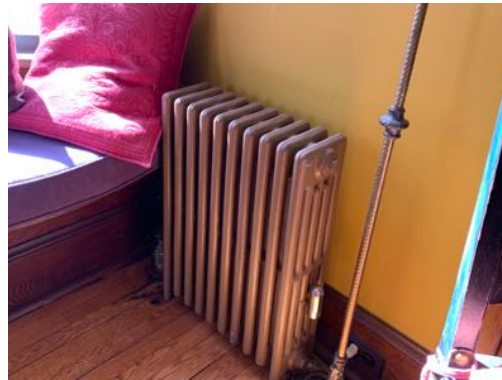
House built c. 1902

- Approximately 2,800 sq ft on .7 acres of land
- 10 rooms plus finished attic



Old heating system: Gas & steam

- House built 1902 with coal fireplace
- Converted to gas-fired steam boiler and 13 radiators
- Current boiler installed 1991 (life expectancy 20-30 years)
- Thermostat in dining room, valve on each radiator
- Water heater and stove also on city gas



New system: Two 2.5-ton outdoor units

- Installed January 2019 by NP Environmental
- \$24,500 price reflected \$1,000 rebate from NYS
- Both units situated on same side of house
- Each feeds maximum of three indoor units
- Hot water and stove still on natural gas



New system: One floor unit & five wall units

- All but kitchen unit on south side of house
- Upstairs units heat & cool rooms across hall



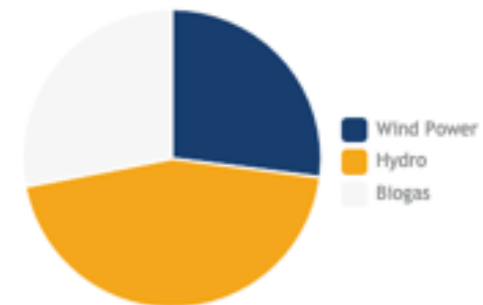
New system: “Zoning” by remote control

- Each indoor unit has its own controller
- Heating, cooling, automatic modes
- Temp, fan speed, direction, daily & weekly timers, movement sensor, etc.
- Boiler & radiators retained as back-up



Electricity from 100% renewable sources

- Renovus Energy solar farm (Trumansburg)
 - Purchased 8 panels (2.64 kW) October 2016 (\$5,517)
 - Tax credit during year of purchase
 - Annual maintenance fee ~\$190
- Energy Cooperative of America
 - Renewable energy ESCO through NYSEG
 - Hydro, wind, biogas from New York State
 - Covers all electricity not provided by solar farm
 - 1 cent more per Kwh than conventional power
- NYSEG charges ~\$15/month delivery fee



Energy cost comparison (before & after)

Rough estimates based on first year of use. Assumes 25-year life of heat pump system, solar panels, and boiler.

2018 NYSEG total bill (gas boiler)	\$1,666
2019 NYSEG total bill (after heat pumps)	2,171
Plus: Solar farm maintenance	190
Plus: Initial investment (ASHP + solar)	30,000
Minus: New boiler (hypothetical)	4,000
Annual difference	<u>+\$1,735</u>