The Noble House

Hal Smith, Halco CEO
Matt Dennis, Home Energy Advisor
Noble House

305 East Genesee St.
Fayetteville, NY 13066
Owner: William Sunderlin
Why We Feel This Project is Top-Job Worthy

- Retrofit job, not new construction. If we are going to bring geothermal to scale, there are a lot more homes to be retrofitted than new homes being built.
- Whole home makeover following historical guidelines, including major shell work.
- Tight village application drilling in driveway of home in Fayetteville (Syracuse area)
- Pearl Platinum Certified Home (1 of 2 in the state)
  - NYSERDA Pilot
- HeatSmart CNY - NYSERDA program
- 4 separate GSHP systems
  - 1-DHW, 2-split systems, 1-centralized system for main living space
- We used all GeoStar equipment, the sponsor of this top job competition!
Challenges

- Design challenges due to historical significance
- Tight city lot
- Original and period specific windows
- Lath and plaster walls
- 3 separate attic spaces
- 2 crawlspaces and dirt floor basement with stone laid foundation
- Attached carriage house converted to apartment
Addressing the building envelope

- Attic-
  - Installed new pull down stair hatch
  - Cleared out loose insulation
  - Spray foamed roof deck and gables
  - Installed storage decking
Addressing the building envelope
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- Basement and Crawl Spaces
  - Wet ground, excavation and new slab
  - Perimeter drain
  - Vapor barriers
  - Spray foam insulation and foam board
  - Windows and door
  - Whole home dehumidifier
Addressing the building envelope
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Envelope Improvements

- Blower door
  - Test in and test out blower doors completed
  - Made significant improvements
Ground Source Heat Pump

- 12-ton system
- 3, 420’ bores with 1.5” loops tied into 4 separate heat pumps
- Vertical wells
- Drilling in the stone driveway behind the house, trenched ~20’ to the home
Drilling

- Moravec Drilling on tight lot
GSHP #1 - Main Floor

- 5-ton GeoStar Aston dual stage unit
- Installed in the basement
- To heat the main floor
- Installed new ductwork using existing registers with modifications
- GeoStar communicating thermostat with Symphony monitoring
GSHP #2 - Second Floor

- 2-ton GeoStar Aston split unit
- To heat the top floor
- Air handler in attic and heat pump in basement
- GeoStar communicating thermostat with Symphony monitoring
GSHP #2 - Second Floor
GSHP #3 - Carriage House

- 3-ton GeoStar Aston split unit
- Air handler in attached attic of carriage house and heat pump in basement
- Installed new ductwork using existing registers
- Shared crawl space in basement for lines
- Paired with GeoStar communicating thermostat with Symphony monitoring
GSHP #4 - Hot Water

- 2-ton GeoStar Aston water to water
- For DHW
- Tied into a State EN6 50-gallon water heater
A Happy Customer!

Check out Williams testimonial the the NY-GEO website!
Thank you!

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