Lisburne
NY-GEO - 2019 Top Job Competition
Preexisting Challenges

• Past challenges with previous approaches
• 80% plastered and painted ceilings. Customer instructed no breaches to be made.
• Existing mechanical issues
  • Room modifications were not reflected in prints
  • Undersized or missing supply and return air ducts
  • Inaccurate plumbing and pumping
  • Air handlers not zoned
• No controls installed
The Solution

• 20 ton closed loop with a vertical bore
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• Four 5-ton, 2-stage water to water heat pumps
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- Four 5-ton, 2-stage water to water heat pumps
- 2 Manifolds With 100-Gallon Buffer Tanks
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• Variable Speed, Wet Rotor Circulators
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- 3 Nortec modulating humidifiers
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• 3 Zehnder ERVs, 2 HRVs
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- Geo domestic hot-water pre-heat
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- Geo domestic hot-water pre-heat
- Geo hot tub & pool heating
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• Supplemental heat with 92% efficient Veissmann boiler
Outcomes

• Value engineering reduced installation cost

• Repiping load-side manifolds in a direct-to-load configuration gaining ~10% additional energy efficiency.

• Substantial labor and time savings
  • 600 feet of piping and fittings saved from previous design and eliminating circulator pumps

• Affordable, integrated control of equipment

• Efficient, renewable geothermal in a 160 year old historic building

• A highly satisfied customer
Enhancing Geothermal

- Configurable controls
- Integrated control of 16 pieces of equipment
- 51 modulating and relay control signals
- Online system tuning and troubleshooting
- Detailed monitoring on building and equipment
- 105 sensors collecting data every minute
- Temperature, humidity, pressure energy, safety, equipment reliability
- Remotely accessible to customer and contractors
Enhancing Geothermal
Enhancing Geothermal
Partners

Aztech Geothermal

CHUCK RUSSO
HEATING & AIR CONDITIONING, LLC

Nugent CM LLC
Construction Management & Sustainability Services

Michael P. Carr, PE
Thank You

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