WELCOME GEOTHERMAL HEAT PUMPS
Renewable Energy – Production v. Conservation?
Geothermal Heat Pumps vs Conventional HVAC

Over 70% of the energy consumed by a typical home is used for heating, cooling, and water heating.

Total site energy consumption is cut in half.

Conventional System:
- Lighting & Appliances: 27%
- Heating & A/C: 60%
- Hot Water: 13%

Geothermal Heat Pump System:
- Lighting & Appliances: 27%
- Geothermal Energy (Provided free from the earth): 49%
- Hot Water: 6%
- Heating & A/C: 18%
Water vs. Air

- There is 3,472 times more heat stored in a cubic foot of water (62.5 BTU per degree F) as in a cubic foot of air.
TT NORTH AMERICA: PROJECT SPOTLIGHT
Whisper Valley is a 2,063-acre, mixed-use planned community located in Austin, Texas. The property will include approximately 7,500 single and multi-family homes, and more than 2 million square feet of retail and office space. Estimated to be a $1.5 billion to $2 billion project when completed. Expected build out is 300 homes/yr build out.

Opportunity

Residential Portfolio – One Bosch package and unique distribution strategy including TTNA geothermal, tankless, and BSH appliances. PV partner, Security, and AAAS – EV solutions pending

Success factors

Geothermal hybrid community loop with a utility approach.
<table>
<thead>
<tr>
<th>Name</th>
<th>Serenbe</th>
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<tbody>
<tr>
<td>Overview</td>
<td>Serenbe is an environmentally-conscious community of about 400 residents, located just 40 minutes south of Atlanta. Serenbe land planning protects the wetlands and preserves over 70 percent of the land as green space, with respect for the agricultural history of Chattahoochee Hill Country.</td>
</tr>
<tr>
<td>Opportunity</td>
<td><strong>Residential Portfolio</strong> – One Bosch package and unique distribution strategy including TTNA geothermal, tankless water heaters, BSH appliances and AAAS – EV solutions pending</td>
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<td>Success factors</td>
<td>Geothermal mandated in the community. Geothermal Utility self operated by the developer.</td>
</tr>
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</table>
Lady Bird Johnson Middle School – Irving, TX

Project Goals:
- Sustainable heating & cooling
- Energy savings and environmental comfort
- Educational outreach for Texas students

Products Used:
- Array of Bosch/FHP – EP & EC Models from 1 – 20 ton
- 2,988 Solar PV Panels yielding 850,000 kwh/year
- Wind Turbines
- LED Lighting

Results: First NetZero Public School in Texas
Project Scope:
Brickell City Centre is a US$1.05 billion mixed-use development. The project features twin residential towers housing 820 condominium units, and a luxury hotel.

The Need:
Seeking a long-term, high-efficiency HVAC solution that would integrate into the design of the facility which required considerations to efficiency, equipment size and noise.

The Results: A custom variation of the Bosch Bosch/FHP LV Model WSHP was designed and built for installation in the 820 residential condo units featuring a unique sound package and single point power.
US Facilities:

Main Headquarters
50 Wentworth Avenue
Londonderry NH, 03053
USA

Primary function supporting Bosch and Buderus boiler and Bosch water heating products.

601 NW 65th Court
Fort Lauderdale, FL. 33309
USA

Primary function supporting Bosch and FHP Geothermal, WSHP and AC business
THANK YOU!