

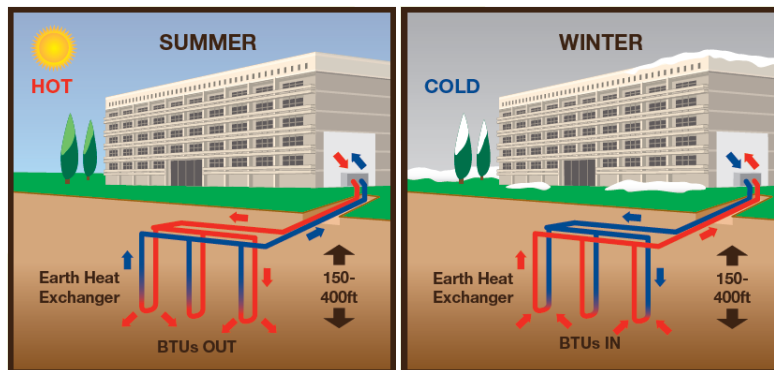


Geothermal Heat Pump Systems: Offering Hospitality Industry a Permanent Vacation from High Energy Costs

The hospitality industry is implementing various strategies for addressing their hotel, resort or related operations' commitment to reducing building energy use. Whether a result of government programs like California's Zero Net Energy initiative or an internal, company commitment to "greening" accommodations, industry participants are moving more aggressively to reduce their carbon footprint.

In a recent report by the American Hotel & Lodging Association, hotelier respondents overwhelmingly indicated that they were working toward some sort of a green certification program. This corresponds with a growing number of travelers who are giving greater weight in their decision making to hotels and resorts that offer either certified sustainable lodgings or some other formal commitment to reducing energy use. A recent report by Deloitte Financial Advisory Services, *Risks and Rewards for Building Sustainable Hotels*, indicates that business travelers increasingly consider a hotel's sustainability practices when making accommodation selections, and almost half of those surveyed were willing to pay a premium for those practices.

Geothermal heat pump (GHP) systems, which are used around the world in everything from big box stores to military bases, offer the greatest single answer to the hospitality industry's desire to save energy and market a "green" product. For over 60 years in the United States, GHPs have assisted in reducing HVAC-related energy consumption by as much as 70 percent in both retrofit and new building projects. Considered by the U.S. Department of Energy as "the most efficient technology available," these systems can work virtually anywhere, with efficiencies of up to 600%.



GHPs utilize the earth's moderate and stable temperature, located just a few meters below its surface, to provide heating and cooling for buildings. The earth is used as a heat sink during cooling mode and a heat source during heating mode. A GHP's heat exchange is even more reliable than "traditional renewable", as the earth's constant temperature is always available at the point of use, providing heating and cooling 24 hours a day, 365 days a year.

Instead of having to work with high and low degree ambient air temperatures, GHPs work with the moderate temperature of the water flowing through the systems' underground heat exchanger, decreasing energy use as much as 70% compared to a traditional HVAC system. Depending on the region, the water temperature (heat transfer medium) will be in the range of 45-70° F.

See EnLink's short video "How Geothermal Works" by visiting: <http://www.enlinkgeoenergy.com/geothermal.html>

GHPs in Hotel and Resort Settings

Hotels and resorts around the world have installed GHPs, experiencing tremendous energy, water and maintenance savings. In the United States, by installing a GHP system, the 4,700-ton combined hotel, apartment and office *Galt House* complex in Kentucky saved thousands in monthly energy bills, enhanced indoor air quality and comfort, while freeing-up approximately 25,000 square feet of additional commercial space that would otherwise have been used for equipment rooms .



When the *Ramada Inn* on the Geneva Lakefront in NY State was constructed in 1997, Ramada was ahead of the green design movement. The property utilizes a geothermal heat pump system that provides heat for the building in the winter, as well as cooling for the building in summer, reducing the property's energy consumption. The property also utilizes the system for its hot water needs.

Finally, the boutique *Hotel Bardessono*, located in California's wine country touts that an "underground geothermal system heats and cools the guest rooms, the spa, and the domestic hot water supply. Almost no offsite energy is used." The hotel holds a LEED Platinum rating.



Why are savings so significant in hotels and resorts?

- Hotels are in operation 24 hours day, year round, expending enormous amounts of energy for heating, cooling, and air conditioning purposes.
- With multiple guest rooms and common areas, hotels have the need for multiple heating/cooling zones.
- Not every zone will be heating or cooling at the same time, and simultaneous heating and cooling needs must be met.
- For hotels, there is a hefty need for hot water. Whether for pools, spas, showers, laundry, kitchen, or any other activity hotels need plenty of energy to meet these needs.
- Finally, maintenance on equipment is rare. The geothermal heat exchange system (which is located underground), has no moving parts and consists of high density polyethylene. Inside the building the actual geothermal heat pump has an ASHRAE life expectancy of close to 30 years. Between the exchanger underground and the heat pump inside the building, there is little need for maintenance professional.

In summary: GHPs are capable of cutting utility costs dramatically in facilities that run 24/7, providing every zone with its own thermal comfort level and hot water needs at little or no cost.

Financing of GHPs

Third party financing is available with an array of options to suit either the tax-exempt or tax-paying entity's needs. For those wishing to self-finance, federal and state incentives are available to assist in paying down the installation costs. However, federal programs that provide 100 percent depreciation requires that projects must be "in-service" before December 31, 2011. Beginning in 2012 projects must be "in service" by year's end to take advantage of 50 percent depreciation.

EnLink will provide additional information upon request.

Conclusion

GHPs are big energy and money savers. EnLink can help assess whether your facility is a good candidate for this technology. Please contact EnLink's Albert Escobedo at 424-242-1219, or aescobedo@enlinkgeoenergy for more information.