

VARIOUS SHADES OF GREEN

"We learned through the experience with BTC that green buildings are very cost effective," said Reinders. "Those savings have been so compelling that we when we recently remodeled our Johnson Controls Inc. corporate headquarters building in Glendale (WI), we designed it to the highest level achievable under the LEED rating system, by going for LEED-Platinum. We are also in the design stages of another building for our Power Solutions business, which will also be built to LEED Platinum standards."

WATERFURNACE IS GREEN BEFORE ITS TIME

The geothermal heat pumps that WaterFurnace manufactures are some of the most efficient heating and cooling systems available. They're so efficient that the company decided to install 41 of its own systems when it



WaterFurnace's headquarters includes 41 geothermal systems, and at the time it was constructed, it had the largest geothermal pond loop system in North America to provide heating and cooling for the building.

built its 115,000-sq-ft headquarters in Fort Wayne, IN in 1990.

"Our story may be a bit different from many other manufacturers," said Bruce Ritchey, president and CEO of WaterFurnace International. "Geothermal technology is inherently, significantly more energy efficient than conventional, fossil-fuel based heating and cooling technology, and the reservoir of available geothermal energy is vast and renewable. So, our product was green long before green was fashionable and before all the emphasis and urgency on green and sustainable construction practices. So, we didn't go green, per se; we've always been green."

When WaterFurnace constructed its new building, the goal was for the headquarters to be a model for commercial geothermal applications worldwide. That involved installing what was, at the time, the largest geothermal pond loop system in North America to provide heating and cooling for the building.

A combination of WaterFurnace geothermal units and water-to-water units were installed. The system consists of horizontal units conditioning various zones within the two-story office space and seven large capacity horizontal units that total 70 tons conditioning

the manufacturing area. The total capacity of the system is 153 tons, with 134 tons installed in 1991 and 19 more in 1995. The 168 tons of lab support equipment uses the pond loop as a tempering medium when lab requirements fluctuate outside of specified limits. A high-tech BAS helps to substantially reduce operating costs while providing higher levels of safety, comfort, and convenience for the occupants.

Energy savings have more than offset initial costs. Ritchey estimated the energy savings at the headquarters facility to be 25% to 40% with the use of geothermal heating and cooling vs. a conventional system.

WaterFurnace is proud of its green reputation and is continually looking for ways to reduce its carbon footprint and create a positive environmental impact. The company has issued a list of its own environmental impacts and practices, which include the following:

- An initiative across all office areas to eliminate the use of paper wherever possible.
- Help for employees to install geothermal heating and cooling units in their homes. The program so far has reduced carbon consumption by 33 metric tons per year, or the environmental impact of taking 100 cars off the road permanently.
- All high-efficiency fluorescent lighting in the plant and office, which saves 50% on electrical consumption for lighting.
- Geothermal heating and cooling equipment used to heat, cool and provide hot water for the office and manufacturing facility, reducing carbon emissions by 70 metric tons per year (the environmental equivalent of taking 140 cars off the road permanently).

"Since our product is inherently green, we tend to have a green 'mindset' and culture around here. It's who we are and what we do," said Ritchey.

ECHELON IS CLEAN, NOT GREEN

When Echelon Corp. built its 80,000-sq-ft headquarters in San Jose, CA in late 2001 the LEED certification program was not yet well known. But the manufacturer of LonWorks*-based networking technology knew it wanted to create an energy efficient facility that integrated all the key building systems, including security, lighting, elevator, and HVAC, using



Echelon's headquarters utilizes over 1,100 smart devices in order to optimize its energy efficiency.