



Real world hydronic system technology for Green Building design.

# hilton garden inn

NEW CONSTRUCTION, BOZEMAN, MT





Taco LoadMatch® Real world hydronic system technology for Green Building design.

# hilton garden inn

## Great energy savings achieved with LoadMatch® System

**Project Snapshot:** A recently constructed 122-room Hilton Garden Inn in a fast developing area of Bozeman, MT features a hydronic LoadMatch® system for heating and cooling instead of PTAC units with electric heat and cooling, as proposed to meet the project budget. Ironically, the local electric utility provided \$70,000 to go forego electric use, based on a projection that greater energy savings could be achieved by going hydronic with LoadMatch and natural gas-fired boilers.



*The Hilton Garden Inn under construction.*



*LoadMatch® Circulators used throughout the 122-room hotel.*



### The planning:

One of the two local owners of the property wanted to save money by installing an electric heat system in the hotel using PTACs for each room. The second owner and the comfort system consulting engineer wanted a system with lower operating costs. Both were familiar with the LoadMatch® system from previous projects, and invited Taco to conduct a comparative analysis of anticipated operating costs for PTACS with electric heat and a LoadMatch system with natural gas boilers and fan coils.

### The result:

Better energy savings could be achieved with the the LoadMatch system. Another factor was the position of the American Automobile Association, which gives lower ratings to new properties that do not have a central comfort system.

The LoadMatch system provides better comfort than DX air systems as well as conventional 4-pipe hydronic systems. It is self-balancing and eliminates the

need for most balancing valves and expensive, energy-consuming control valves by replacing them with small, energy-efficient Taco LoadMatch circulators. The circulators direct water to where it needs to go, as opposed to forcing the water through the system's piping loop.

**"Northwestern Energy provided the owners with a \$70,000 grant to not go with electric heat."**

The comparative analysis showed that PTACs with electric heat, while less expensive in terms of first costs, were much more expensive to operate over the expected life of the building. LoadMatch circulators coupled with fan coils were much more efficient over the long haul. In this case, the owners, while concerned with not going over budget in construction, were also mindful of operating costs from year to year because they have no intention of selling the property to another

party. If they did, lower construction costs would be their overriding concern.

The key to staying on target with the owners' construction budget was provided by Northwestern Energy, the local electric utility, which was more concerned about promoting energy conservation in new commercial construction projects than in signing up another customer for electric heat. That may seem ironic from a business perspective but not in Montana, where environmental opposition to new electric power plants is a political given. With that in mind, Northwestern Energy provided the owners with a \$70,000 grant to not go with electric heat.

Business and leisure travel guests will experience uniform comfort in winter and summer thanks to the LoadMatch system, and the owners will see substantial savings in operating costs from year to year. Energy savings mean energy conservation, making the LoadMatch solution a "Green" solution.

## You'll be more comfortable.

LoadMatch<sup>®</sup> provides better comfort than all air-systems, as well as conventional hydronic systems. LoadMatch<sup>®</sup> is a self balancing system and assures the required flow to all heating and cooling units at all times. Your heating and air conditioning system will deliver BTU's where they're needed, and when they're needed.

## You'll save energy.

With less pipe and the elimination of control valves and most balancing valves, lower pump head and less power is required to move the water.

## You'll save money.

Fewer parts, about 40% less pipe and fittings, no control valves and almost no balancing valves reduce first costs. Lower pump head and operation of pumps to match the load reduce operating and maintenance costs. All this adds up to big savings on the system, typically up to 30% of life cycle costs.

## Contact Us

Taco engineers are at the forefront of Green Building hydronics, designing components and systems to help you meet the challenges of environmentally sensitive – and budget conscious – design and build. Visit our web site at [taco-hvac.com](http://taco-hvac.com) or e-mail [greenteam@taco-hvac](mailto:greenteam@taco-hvac) for more information or to talk to a Taco Green Building professional.

