



Commercial Case Study

Chicago Hotel Provides Elevated Level of Guest Comfort, Achieves Energy Efficiency Goals with Water-Source Heat Pump Systems from ClimateMaster

With an aim toward infusing sustainability across all aspects of the guest experience, Kimpton® Hotels and Restaurants has incorporated environmental practices in its day-to-day business model since the company was established in 1981. This includes the Kimpton EarthCare program, which denotes more than 100 environmentally minded procedures and products implemented at all Kimpton hotels and restaurants in the U.S.

Among a myriad of practices to reduce waste, minimize toxins and conserve resources across all business functions, Kimpton maintains its own set of EarthCare green building guidelines, including employing energy-efficient lighting and HVAC systems. These were of primary focus when the hotelier pursued construction of its 36-story, 353,000-square foot Hotel Palomar Chicago in the desirable River North neighborhood of downtown Chicago, which opened in the spring of 2010.

The building, which was designed by GREC Architects, features exterior construction that allows

for maximized daylighting while imparting a sleek, minimalist and modern feel. In addition to the lower 14 floors occupied by the Hotel Palomar - Chicago and neighboring Sable Kitchen & Bar, the building's top 18 levels are dedicated to luxury private residences, all of which feature glass balconies that offer exceptional views of River North. It also includes three levels of covered parking and a floor dedicated to mechanical operations.

When planning began in 2009 for the 261-room hotel's mechanical system design, the Kimpton engineering staff worked with Niles, Ill.-based manufacturers' representative firm Imbert International to procure a solution.





The ClimateMaster Vertical Stack (VHS) units operate quietly and blend right in with the room.

“The modern glass and steel architectural design of the building itself, including floor-to-ceiling windows in all the guest rooms, called for a mechanical system that would be as unobtrusive as possible,” said Gary Stern, vice president at Imbert International. “In addition, Kimpton sought an HVAC solution that could meet the energy efficiency standards of its own EarthCare program parameters as well as the Chicago Energy Conservation Code (CECC), while also providing maximum guest comfort.”

The team agreed on a water-source heat pump-driven system from ClimateMaster, including a total of 299 0.5- to 1.5-ton Vertical Hi-Rise Stack (VHS) Series units for all guest rooms in the hotel. To provide individualized climate control for guests, single units would be installed in each of the standard rooms, and two units in each of the larger rooms and suites. Additionally, 15 2- to 15-ton Genesis Standard (GR) Series, Genesis Compact (GC) Series and Genesis Large (GL) Series units were specified for the several common areas of the hotel.

“A heat pump-driven system was the only design that met all stipulations of the project,” explained Stern. “This included the energy goals and budget parameters, as well as the ability to separate the residential portion of the building from the hotel. The mechanical system design at-large, which includes an additional 298 0.5- to 2-ton VHS Series hi-rise units from ClimateMaster in the private residences on the upper 18 floors of the building, facilitates completely independent operation of the private residence and hotel units when in heating mode. And when in cooling mode, both areas share only a cooling tower on the roof.”

“For those of us who’ve been in the industry a long time, heat pumps are a newer technology, and there was a bit of a learning curve at first,” said Thomas Dunne, chief engineer at the Hotel Palomar - Chicago. “We quickly realized the advantages of this type of system however, especially as no boiler is required and as the system is so incredibly efficient and quiet.”

According to Dunne, whose career experience includes mechanical system design and oversight in both the healthcare and luxury hospitality industries, heat pump-driven HVAC systems are an advantageous choice for these markets, particularly from the perspective of energy savings and occupant comfort.

“In a climate like Chicago’s, we may not have previously thought of heat pumps as a possibility, particularly in being able to meet demands in the extreme winter months,” Dunne explained. “In reality though, they are



The VHS units make replacing air filters quick and easy.



**One of Hotel Palomar's Genesis Large (GL)
Series units**

an ideal solution in both the warm and cold seasons, as well as in the shoulder months as they provide a highly efficient means by which to either heat or cool spaces, or deliver simultaneous heating and cooling in different areas of the building."

Since the hotel opened its doors in March of 2010, Dunne reports that the HVAC system has, overall, been well received by both guests and his engineering team.

"We have several built-in systems to ensure the system's operation at maximum efficiency, including in-room unit set points that provide a constant 'wave' of variable temperature change in accordance with the temperature at which guests set the thermostat," Dunne said. "In addition, the thermostat has an 'Eco' button to signify whether a room is or is not occupied, as well as a sensor on the door which sends a signal to the thermostat indicating whether a guest has left or come back into the room."

Dunne additionally denotes that the in-room heat pump systems operate virtually undetected by the hotel's guests.

"Some people wonder where the heating and air conditioning is even coming from," he said. "It's so incredibly quiet, and besides the cabinet doors in the walls, which blend right in to the rest of the room decor, there's no evidence of the HVAC system's operation except for a slight breeze near the windows, and of course an optimal in-room temperature."

"This is undoubtedly a stellar example of water-

source heat pump system viability in hotel and hi-rise multifamily applications," said Raj Hiremath, director of marketing at ClimateMaster. "A smart, streamlined and virtually unnoticed HVAC system is a natural fit with this type of modern, high-end property, and should be expected by guests and residents seeking tranquility and relaxation. In fact, over the past four years, ClimateMaster has itself capitalized on the hotel as a 'case study in comfort,' hosting several events and meetings there to convey the authenticity of this message."



**One of Hotel Palomar's Genesis Standard (GS)
Series units**



Hotel Palomar

Architect:

GREC Architects

Manufacturer's Representative:

Imbert International, Inc.

ClimateMaster Equipment:

299 Vertical Hi-Rise Stack (VHS); 15 2-to 15-ton Genesis Standard (GR) Series, Genesis Compact (GC) Series and Genesis Large (GL Series units

Project Website:

www.hotelpalomar-chicago.com



ClimateMaster is the world's largest and most progressive manufacturer of geothermal heat pumps. The company is committed to innovation and dedicated to environmentally clean, economically sound and superbly comfortable home and business environments.

ClimateMaster has been designing and building equipment that enhances the environments we live and work in every day for more than 50 years. In addition to geothermal heat pumps, ClimateMaster offers the most extensive product line of water-source heat pumps for use in a wide variety of applications. ClimateMaster products are proudly built in the U.S.A.



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