High-Tech Welcome Mat

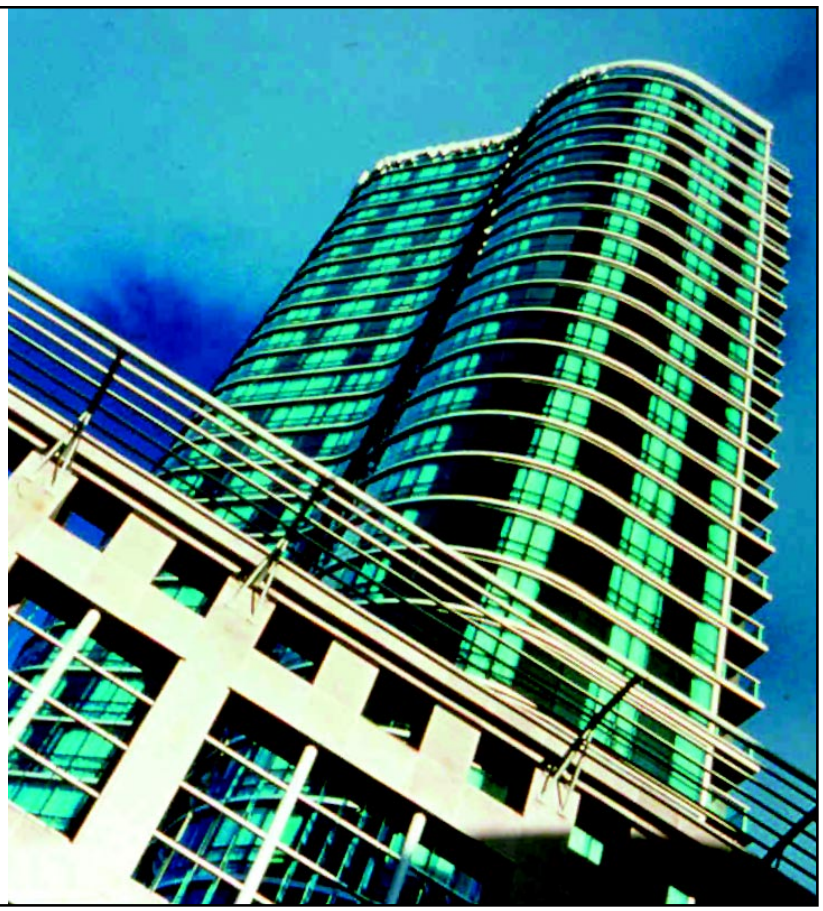
BACnet® Greets Guests at Hotel

'As a guest checks in, the property management system sends a BACnet command to the building automation system, switching the fan coil unit in the guest's suite to occupied mode.'

By Randy Amborn

At The Westin Grand, in downtown Vancouver, BC, Canada, BACnet® integrates comfort controls with systems that manage the critical daily business processes in the lodging industry. Even better, the integration of the property management system, HVAC, and building automation systems is saving energy dollars without compromising guest comfort.

In the lodging market, with its diverse components, the property management system is the hub of various freestanding yet vertically integrated subsystems that control reservations, billing, phones, housekeeping, and more, including comfort and energy consumption. A BACnet integration of the property management and building automation systems at the hotel saves energy by setting back temperatures in unoccupied rooms.



The Westin Grand in Vancouver.

Air-cooled chillers on roof provide cooling for guest rooms.

Guestroom fan coil units switch to occupied on check-in.

As a guest checks in at the front desk, the property management system sends a BACnet command to the building automation system (BAS), switching the respective guestroom fan coil unit in the guest's suite to occupied mode. The thermostat is activated to either cool or heat the suite to the occupied setpoint of 22°C (72°F). In the approximate five minutes it takes for the guest to get to the suite, the system adjusts to the comfortable ambient temperature of 21°C to 23°C (70°F to 73°F). The reverse happens when a guest checks out. Guests can adjust temperature to suit their preferences. Staff servicing guestrooms have timed override buttons. The interface allows hotel engineering staff to view key data obtained via the BACnet interface, such as occupancy status and temperature of guest suites, at the BAS workstation.

Angela Rafuse, director of guest services, says, "The system makes my job easier. There have been no complaints, even from guests on the southwest side of the hotel," where full-length glass walls and a sunny exposure create a potential comfort problem.

Energy Savings

In 22 months of implementation, the hotel's consumption of steam and electricity were reduced by 15.66% and 11.33% respectively — resulting in a savings of Can. $42,000. *Figures 1* and *2* show substantial monthly and cumulative reductions in energy consumption after completing the interface in Oct. 2001.

Payback for the integration cost was under a year. Even though British Columbia has some of the lowest electricity and gas rates in North America due to plentiful hydroelectric power, every bit of reduced consumption will help not only the environment but also the bottom line. The integration accomplishes this with minimal or no impact on guest comfort.

Adapting Leading Edge Technology

The hotel's design in the late 1990s included a specification for room-occupancy-based energy management, but the

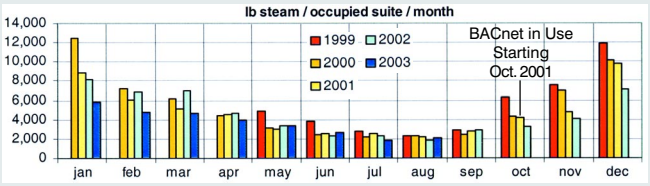


Figure 1: Average estimated savings of 15.66% annually in steam consumption per suite after BACnet installation.

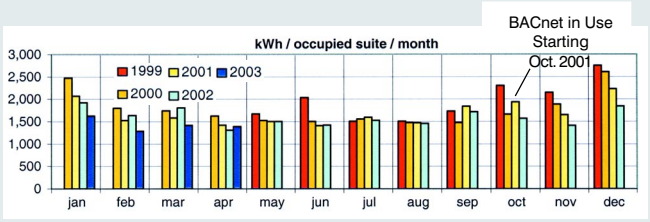


Figure 2: Average estimated savings of 11.33% annually in electrical consumption per suite after BACnet installation.

execution of this energy-smart integration was still ahead of market reality. In 2001, to meet the hotel's needs, a specialist with expertise in BACnet integration developed the BACnet interface between systems.

Looking ahead, the hotel team has plans for extending the system to achieve additional savings. Phase II would include lighting controls in guest suites. Phase III would incorporate motion/occupancy sensors to save energy when a guest leaves a room. These energy-saving enhancements are enabled by input/output terminals on the fan coil unit controllers. The HVAC and controls supplier also provides mechanical support services to the hotel through an annual contract.

Conclusion

In-room comfort is critical to the satisfaction of hotel guests, as shown on a recent survey.[1] Some 67% of respondents chose adjusting the temperature as one of the first three things they do when entering their hotel room. People 35 to 44 years old are the ultimate comfort seekers, with 41% adjusting the temperature before checking out other room amenities.

The hotel staff and systems are getting guest comfort and service right. Occupancy rates are expected to peak at the 2010 Winter Olympics, which Vancouver will host. Although hotel guests may not realize it, BACnet is behind the scenes working to make their stays comfortable.

References

1. Trane. 2003. "Americans crave comfort on the road—temperature is the number one concern of hotel guests." Trane press release, www.americanstandard.com/PressReleases.asp#

Randy Amborn is a senior marketing specialist for Trane Global Controls in St. Paul, Minn.