

CASE STUDY

Telkonet SmartEnergy™

Habitat Suites Hotel, Austin, Texas



Type of building	Hotel
Location	Austin, Texas
Year built	1986
Number of buildings	3 buildings
Number of stories	2 stories
Number of units	96 units
Installation date	November 2004

In the 1990s, managing partners of the Habitat Suites Hotel, Eduardo Longoria and John McCready, made a personal commitment to support a sustainable future by “greening” their Austin, Texas hotel. The task was no easy matter considering that the 2-1/2 acre, 96-room independent property was not designed or built with ecological considerations in mind. By implementing several changes to the property, the hotel has managed to promote and support environmental consciousness while conserving and saving money.

As part of its environmentally-friendly vision, the Habitat Suites Hotel became a charter member of the “Green Hotels Association” and implemented several programs to transform the property into a “green” hotel. Among the changes were several new procedures to reduce toxic chemicals in their property, strategic planning of abundant vegetation and trees, and a comprehensive recycling program.

Hotel management also wanted to address one of the biggest ecological concerns today - energy conservation. Habitat Suites Hotel Manager, Natalie Marquis, said that when it comes to energy conservation, her hotel is first in line to try out energy savings programs that might further its mission. To this end, Habitat is working closely with its local utility, Austin Energy, a community-owned electric utility and a department of the City of Austin. The utility prides itself on helping its customers by developing various environmental friendly programs.

“We have worked very closely with Austin Energy to find ways to reduce our energy consumption. We were one of the founding members of the Green Choice, Commercial Power Partner and SmartVendor Programs. Because of our participation in these programs, we’ve managed to reduce our

fuel charge by 24 percent and our electric consumption by 11 percent.”

Austin Energy’s programs assisted with duct sealing, weather stripping and caulking, and provided a commercial lighting rebate. As part of its Power Partner Program, Austin Energy also installed programmable thermostats in all of the hotel’s suites in September 2001. These leading-brand thermostats included radio-controlled receiver switches to unobtrusively cycle off the air conditioner when local power plants approached peak demands. Both Austin Energy staff and Habitat management expected to see the greatest energy savings from the new thermostats.

Austin Energy’s Project Manager, Paul Lustig, explained, “I think that most property managers are keenly aware that energy costs associated with heating, ventilation and air conditioning (HVAC) add up to one of their largest operating expenses. To compound the problem, often times the air or heating is left on when rooms are not occupied. By using programmable thermostats, the room temperature remains more constant and the HVAC equipment doesn’t have to run as long, which saves energy and helps reduce maintenance and replacement.”

After monitoring the electric consumption over 18 months, as expected, the new programmable thermostats resulted in an 11 percent decrease in energy consumption for the 96-room hotel. An unforeseen complication, however, began to develop with the new thermostats. Guests, confused with the many options on the face of the thermostat, began changing the room’s temperature and inadvertently altering the thermostat’s programming.

"We were pleased to see lower energy consumption, but unfortunately our staff had to spend a lot of time resetting thermostats after guests checked out," said Marquis. "We also had problems with people setting the thermostat's temperature too low. Because these systems did not include pre-set parameters, the temperature would drop too low and freeze up the HVAC's compressor. We spent a great deal of time and costs repairing our HVAC systems as a result. Of course, the greatest disappointment of all was the inconvenience to our guests when a unit would freeze up."

"We have truly found the best thermostat for our needs. Our tests documented energy savings of 17 to 23 percent over and above the 11 percent savings we were seeing with the other thermostats."

Natalie Marquis, Habitat Suites Hotel Manager

After mentioning the problems to Austin Energy staff, Marquis received a very positive and proactive response from the Power Partner team. They conducted extensive research and found a different thermostat that would address the hotel's concerns and save energy. In 10 suites, they installed Smart Systems' SS5000 Energy Management Thermostats and wireless, remote SS2000 Energy Management Occupancy Sensors.

While there are a number of programmable thermostats and energy management systems available, the Power Partner staff was impressed with the way Smart Systems' wireless thermostats and occupancy sensors work together to save energy when a room is unoccupied. The patented system incorporates either a Packaged Terminal Air Conditioner (PTAC) controller or smart thermostat that wirelessly communicates with an unobtrusive occupancy sensor to monitor and adjust to conditions such as changing weather, room temperature and HVAC efficiency. The system automatically tracks room occupancy to optimize

temperature settings for room-by-room savings by relaxing the temperature when a room is empty and then recovering to guests' temperature set-points within a fixed period of time, after their return. This automated process of relaxing the HVAC unit in an unoccupied area, is especially beneficial for hotels and motels to realize maximum energy savings. Since the equipment uses a combination of existing thermostat wiring and wireless signals to the sensor, installation is relatively quick with minimal disruption to the property that might result in lost revenue.

The Power Partner staff also found that Smart Systems' thermostats included programmable parameters that allow guests to adjust room temperatures, but only within a set range, as dictated by hotel management. Smart Systems' energy management systems provided the energy savings and usability Habitat Suites Hotel needed.

"We have truly found the best thermostat for our needs," said Marquis. "Our tests documented energy savings of 17 to 23 percent over and above the 11 percent savings we were seeing with the other thermostats. Its simple, user-friendly interface eliminates the confusion guests were experiencing with the old system, and its lockout parameters have fixed our issues with the HVAC system freezing up. Since we installed the Smart System units, we haven't had any problems with our HVAC systems."

Because the system tested so well, Austin Energy replaced all of its programmable thermostats with the Smart Systems energy management system. After analyzing data from trial installations, Marquis anticipates the hotel will save 51,000 Kilowatt-hours a year in energy while providing the usability needed to accommodate its guests.

"As of today, Smart Systems has completed installation in all 96 suites of our property," noted Marquis. "It's just remarkable that we can save this much energy from one singular activity. And with these systems being so simple and dependable, we won't have to worry about any more HVAC problems."

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