



MIDWEST BUILDINGS

TECHNOLOGY APPLICATION CENTER

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Kalahari Resort and Convention Center

ENERGY EFFICIENCY AND CONSERVATION MEASURES

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PROJECT PROFILE

MARKET SECTOR

HOTELS AND MOTELS

QUICK FACTS

LOCATION:

1305 Kalahari Drive
Wisconsin Dells, Wisconsin

FACILITY TYPE:

Hotel, indoor waterpark,
convention center

OWNER:

Todd Nelson

SIZE:

Indoor area over 1 million sf,
includes 3 attached buildings,
750 guest rooms, 125,000 sf of
indoor water park

MEASURES INSTALLED:

2005–2007

ENERGY EFFICIENCY

- Low-flow showerheads
- Energize systems in guest rooms
- Digital thermostats
- Compact fluorescent bulbs wherever possible
- New fluorescents in waterpark
- LED exit signs
- Motion sensors in public areas
- High efficiency sprayerheads in dishwashers
- Large ceiling fans to circulate air in waterpark
- New pneumatic press for laundry



Daylight illuminates the Kalahari's indoor waterpark.

The Kalahari Resort in Wisconsin Dells was built in 2000 and has expanded since then. The complex contains an indoor and an outdoor waterpark, a hotel, and a convention center. Todd Nelson, the owner, began exploring options for reducing energy use and overall energy costs in 2005.

The Kalahari's facilities staff worked with representatives from the Wisconsin Focus on Energy program and Alliant Energy to identify and implement several energy efficiency measures.

Focus on Energy provided 844 low-flow showerheads for the guest rooms that will reduce water consumption by about 2.46 million gallons per year. Nelson was so happy with these showerheads that he bought enough from Focus on Energy to

similarly equip his newer Sandusky, Ohio facility.

The Kalahari's facilities staff installed 15-watt compact fluorescent bulbs in approximately 5,500 fixtures. By replacing the 60-watt incandescent bulbs in these fixtures with the compact fluorescent bulbs, the Kalahari will save an estimated 294,000 kWh and \$22,000 in electricity costs per year, and also save on maintenance costs due to the longer life of the compact fluorescent bulbs. Focus on Energy worked with the local True Value hardware store to provide instant cash-back rewards for the purchase of the compact fluorescent bulbs.

Guest rooms were also fitted with a technology called Energize Energy Control

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FUNDING AND ASSISTANCE:

Alliant Energy provided expert assistance and low interest financing.

Wisconsin Focus on Energy provided expert assistance and low-flow showerheads.

Steffes True Value, Wisconsin Dells, Wisconsin, provided technical assistance and coordinated vendor rebate incentives

CURRENTLY EXPLORING

Solar water heating for laundry



“A hotel this size needs a phenomenal amount of energy for daily operation. The owner recognized these steps as an opportunity to do something good for the environment and benefit the bottom line at the same time.”

—Bill Maurer, Kalahari Resort Facilities Manager

Systems. Rooms have a keycard slot in the wall where guests place their room key. When a key is present, air conditioning and lights are usable in the room, but when the guest removes the key to leave, these systems turn off or go into a standby mode within 30 seconds. They aren't reactivated until the guest returns. Default settings keep the room temperature from getting too hot or cold. This system cost \$128,000 and was only recently installed so savings estimates are not yet available. Kalahari staff report no problems with the new system, other than the need to briefly train some guests on how it works.

The concept of using energy only where and when it is needed was carried into the public areas of the resort as well. Three hundred and fourteen motion sensors now switch lights on only when someone is present in several of the less-traveled public areas such as meeting rooms, rest rooms, vending areas and maid closets.

The indoor waterpark relies heavily on daylighting, but the Kalahari facilities staff did replace the electric lighting with new fluorescent fixtures (T8) at a cost of about \$150,000. They estimate the energy savings from the new fixtures to be about \$37,900 per year, and \$5,500 savings from reduced maintenance needs. They expect payback in less than four years.

The Kalahari's owner also had large fans (made by Big Ass Fans®) installed in the waterpark to lower its heating costs. The fans push the stratified warmer air near the ceiling down to the floor level. Due to the complexity of measuring energy savings from this equipment in the waterpark environment, exact savings figures are unavailable. The owner, however, is very pleased with the effect and feels the project paid for itself over a very short period of time.

Facilities staff replaced the 160 exit signs throughout the complex with light emitting diode (LED) signs at a cost of about \$12,000. The LEDs have an expected useful life of about 10 years and are virtually maintenance free. They estimate this measure will pay for itself in less than three years.

Low-flow dishwasher sprayerheads were installed to reduce the amount of water used for dish washing. Water and energy savings from this measure have not been calculated.

The Kalahari's owner is very pleased with the conservation measures implemented so far. But he is not planning to stop there. He is currently exploring options for installing a solar water heating system on the roof of the facility to heat water for laundry.

**FOR MORE INFORMATION**

Midwest Buildings Technology
Application Center
c/o Energy Resources Center
University of Illinois at Chicago
1309 S. Halsted Street (MC 156)
Chicago, Illinois 60607
Phone: 312.996.4382
www.ecw.org/mwbbuildings