United Energy, LLC

A Water Conversion Case Study

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The Royal Park Hotel
Rochester, Michigan

"Reducing the hotel's water consumption has always been a goal of management. When we found a way to do it and still maintain quality of our service we took advantage of it."

Description:

The Royal Park Hotel is a luxury boutique Detroit area hotel uniquely situated on the banks of Paint Creek, in idyllic Rochester, Michigan, an easy distance from corporate Detroit. With Old-World attention to detail and classic design, the hotel is a modern tribute to the elegant English manor house. The extensive use of quarter-sawn cherry, marble and slate luxuriously blend to create the architectural style and grace of the Royal Park. An inviting variety of private suites provide the perfect environment for corporate travelers, executive meetings and events, and off-site brainstorming sessions. Complimenting the glass conservatory are various sized banquet rooms and hospitality suites presenting desirable settings for weddings, receptions and social events. This hotel is a place where privacy, luxury and comfort are unparalleled and where personal service is elevated to a fine art.

Goals:

Because the Royal Park Hotel was constructed in 2005, management had just assumed that it would have the most efficient water saving fixtures installed throughout. So when a proposal was made to reduce the hotel's consumption of water through renovations of the guest bathrooms, the first concern of management was how would this retrofit affect the quality of service and guest satisfaction.

Long considered one of the area's best hotels, the Royal Park staff was vehemently opposed to any measure that would make it appear that the hotel was skimping on service. The guest's perceptions that the hotel's bathroom fixtures were commensurate with a luxury hotel had to be maintained.

Solutions:

The renovation focused on two areas of water use in the bathrooms. These were the showers and the lavatory sinks.

The 145 showers and the 145 handheld showerheads were using over 2.5 gallons of water per minute (GPM). These showerheads are of great quality and the management did not want to replace them. A shower flow controller was installed at each shower head and handheld showerhead reducing the flow to only using 2 GPM providing shower flow that was not noticeable to the guests. The next item to be retrofitted were the sink faucets. The existing faucets were using 2.0 GPM.
The faucet aerator inserts were replaced reducing the water consumption down to 1.5 GPM and still supplied more than ample water to perform any task necessary.

Results:

The water renovation was very successful in providing excellent fixture performance. The hotel's management was pleased with the appearance of the final product.

The water savings were significant. All figures and savings are using 50% occupancy. The retrofitted showers are saving a minimum of 28,000 gallons of water per month. And the converted sink faucets are also saving over 11,100 gallons of water per month. This 39,000 plus gallons of water saved each month equals 234,000 gallons saved per year. At the current combined water/sewer rate of $3.19 per $1,000 gallons the annual savings should surpass $746.00.

In addition to these water savings, the hotel benefits dramatically in energy savings achieved by reducing the hot water requirement.

It is estimated that at least 70% of the shower and sink water savings is heated water. Using the hotel's rate of $.90 per therm of gas to accomplish this, the annual gas savings per year is approximately $597. When this is added to the total water savings figure of $746.00 the total project savings are increased to $1,343.00.

As the total cost of the renovation was $2,035, the Return on Investment (ROI) for the entire project is an impressive 67%. This ROI also produces a pay back period for the renovation of slightly less than 18 months.

Environmental:

This water renovation will save the Royal Park Hotel approximately 2,340,000 gallons of water over the next ten years. When the hot water energy savings are combined with the value of the water savings, and future rate increases are added into the projections, the total savings created by this renovation could easily surpass $15,000.

This is an extremely good return on an investment of only $2,035.

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