

A Water Conversion Case Study

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The JW Marriott Grand Rapids, MI

“We always look for opportunities to reduce our cost. In the case of reducing water use we had to make sure that nothing was lost with regard to guest satisfaction and functionality. That was certainly the case with this renovation.”



Description:

The JW Marriott, Grand Rapids, is everything you would expect and nothing you could have imagined. Situated in the heart of downtown Grand Rapids, Michigan, the JW Marriott Grand Rapids is meticulously designed for both business and pleasure. As the first JW Marriott in the Midwest, the hotel offers 340 well-appointed, smoke-free rooms and suites on 23 posh floors.

Each of which is outfitted with atypical amenities like a 37” high definition television, as well as numerous other uncommon personal luxuries. From shareholder’s meetings to lavish wedding receptions to intimate weekend getaways, the JW raises the bar.

Goals:

Because the JW is truly a modern luxury hotel, its bathroom fixtures (toilets and showerheads) use the minimum amounts of water necessary to provide good functionality and meet guest expatiations that commensurate with a luxury hotel

Under these circumstances the only area where a renovation could yield additional savings was in the amount of water used in the hotel’s sinks. Not only would a reduction in this area save water, but because at least 50% of the water used was heated, a renovation would result in additional energy savings also.

Solutions:

The main items retrofitted were the 340 sink faucets in hotel rooms. Prior to renovation, the existing faucets were using 2.0

gallons per minute (GPM). After being fitted with special aerator inserts, water consumption was reduced down to 1 GPM, which still supplied more than ample water to perform any task necessary and maintain guest satisfaction. A \$300 rebate was received for this renovation using the Michigan Energy Optimization Program.

In addition, three pre-rinse spray valves were installed in the kitchen areas to reduce the amount of hot water and energy use. Each of these installed units produced a \$30 rebate and a ROI of six months.

Results:

The water use reduction on the sink renovations was significant, saving the hotel over 270,000 gallons of water annually.

Based on the Hotel’s current water/sewer rate of \$6.19, it is anticipated that the hotel will save at least \$1,671 annually on water and sewer costs.

Because at least 50% of this annual 270,000 gallons of water saved is heated, it is estimated that the Hotel will save approximately additional \$439 annually in gas.

The combined water and energy savings of \$2,110 will produce a ROI of 128% and a payback of less than 10 months. This does not include the rebate received.

Environmental:

According to the MICHIGAN GREEN Environmental Impact Calculator, this project reducing 270,000 gallons of hot water usage annually will save 732 ccf of gas resulting in eliminating 8,827 pounds of CO2 emissions per year. This is equivalent to planting 27 trees.

Over the next ten years this water renovation will save the JW Marriott over 2,700,000 gallons of water. When the hot water energy savings are combined with the water & sewer savings (not including rate increases) this renovation could easily surpass \$21,000.

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