

Case Study: Four Seasons Hotel, Washington, DC

Achieving Energy and Water Savings at the Four Seasons Hotel

Background

In 2012, Sage Energy was approached by the international luxury hotel, The Four Seasons, Washington DC, to perform a water audit. The hotel believed that they were losing tens of thousands of dollars in wasted water due to leaks and other operational issues. Like other luxury hotels, the Four Seasons was under increasing pressure to produce leaner utility budgets and scrutinize their bottom line. Sage Energy's assessment was aimed at helping The Four Seasons identify measures that would reduce not only water usage, but also improve energy efficiency *and* their operating budget, all while reducing any negative impact on the comfort of their guests and the standards the Four Seasons Hotel has set.

Findings

Sage Energy found the Four Seasons Hotel was well-operated and maintained, with the added advantage of a knowledgeable leadership team committed to efficiency and savings. Many opportunities for no- and low-cost savings opportunities were uncovered. Additionally, however, as with most existing structures, legacy equipment would limit how much water and energy consumption could be reduced without capital investment. But, because this is a service-oriented business with a staff committed to excellence on every level, the Four Seasons would have the added advantage of improving savings through additional employee training and education. The savings measures discovered and suggested will help the Four Seasons reduce its water and energy consumption and associated costs, as well as improve their environmental stewardship through improved use of resources.



Solutions

Through careful analysis, the initial water and energy audit performed by Sage Energy uncovered a number of cost-effective no-cost and low-cost energy conservation measures (ECMs) that the Four Seasons Hotel staff did not realize were affecting their operations.

No-cost suggestions for immediate execution included (but were not limited to):

- Modify weekly fire pump test procedure
- Use refrigerator or water bath to defrost
- Shut bypass valves on AHU 3-way chilled water control valves

Low-cost suggestions for immediate execution included:

- Add aerators to kitchen faucets
- Upgrade pre-rinse spray valves (PRSV) with higher efficiency models
- Upgrade to higher efficiency toilets and urinals in employee locker rooms
- Replace older 2.5 gpm showerheads in guest rooms with newer model 2.5 gpm shower heads
- Have patio/trash area cleaners use pressure washer and/or water broom for faster cleaning and use spray disinfectant/deodorizer for trash area allowing for less frequent hose down
- Utilize whirlpool cover
- Replace miscellaneous halogen, incandescent and compact fluorescent lamps with LED lamps when burned out
- Implement/modify setback schedules

Sage Energy also suggested other opportunities that required more investigation and a capital investment including:

- Replace valet boiler makeup tank and level controller
- Replace steam boiler condensate tank with boiler feed unit and level controller
- Replace all incandescent or fluorescent exit signs with LED signs or retrofit kits
- Replace exit stair light fixture ballasts with dimming ballasts and occupancy sensors
- Control elevator machine room exhausts

Summary

In the end, the savings the Four Seasons Hotel will realize will go directly to their operating budget bottom line, while the improved energy efficiency and water savings will further the hotel's overall greening objectives with little or no disruption to their daily operations. Measures identified for the Four Seasons will reasonably reduce their electricity expenditure by 8%, with an almost 15% reduction in water and sewer expenditures. Likewise the payback for these measures may be less than 2 years, a timeline that will enable the Four Seasons to institute further savings measures. Utility rebates identified by Sage Energy will reduce the capital investment for lighting upgrades dramatically and improve the payback to less than one year.