SIEMENS

Infrastructure & Cities Sector Case Study

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At least 10 percent less: Siemens reduces CO_2 emissions for Marriott

The Marriott International hotel chain aims to reduce its CO_2 emissions in Europe by at least ten percent annually – in addition to its stated goal of reducing the water and electricity consumption of its hotels by twenty percent by 2020. With its proven Energy Efficiency Program (EEP), Siemens is helping the hotel group achieve this ambitious goal. The results from the initial projects are very promising.

Hotel managers around the world are faced with a dilemma: They are pressured to reduce costs and make them more predictable, but they must do so without impacting the comfort of their guests. Meanwhile they have to conserve resources and the environment and moreover develop a sustainable image – challenges that are difficult to reconcile using conventional measures. The management teams of major corporations with multiple locations worldwide are confronted with similar challenges. How are energy costs distributed in the company? What portion of these costs are associated with properties, i.e. how much power does each building use? Transparency regarding power consumption is seldom found. And when it is – what can be done to cut energy costs further? How do different measures affect comfort? Or productivity? And, finally, what options are available for improving a building portfolio's efficiency, for lowering energy costs without impacting comfort, and for reducing overall usage on a sustainable basis?

These are the types of questions managers at Marriott International asked themselves. With almost 3,900 hotels in 72 countries, Marriott is one of the world's leading hotel chains. Its 18 brands include Ritz-Carlton, Renaissance Hotels and Courtyard by Marriott. In Europe, the company has almost 290 hotels. Since 2007 Marriott has been committed to protecting and preserving the environment through sustainable operations. An expression of this commitment is Marriott's aim to reduce consumption of electricity and water in all its hotels worldwide by at least 20 percent

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by 2020 – the first steps towards achieving this objective were implemented in the past few years. Additionally, Marriott aims to increase energy efficiency in its European hotels, reduce CO_2 emissions and, where possible, improve building automation.

Successful project: energy costs and CO2 emissions reduced by 15%

To implement its plans, Marriott turned to the Siemens Building Technologies Division. With its innovative Energy Efficiency Program, which was tested successfully on its own properties, Siemens was the ideal partner to help Marriott reach its goals. As a global company with offices in more than 160 countries, Siemens is well positioned to extend Marrriott's program throughout Europe and ultimately to all locations worldwide. The first project selected by Marriott for energy modernization was the Paris Charles de Gaulle Airport Marriott Hotel, built in 2002 and located in Roissy.

With its Energy Efficiency Program, Siemens provides its clients with transparency over their buildings. As part of this process, Siemens collects usage data, analyzes it, and develops proposals for building optimization. The measures can range from fine-tuning existing building management systems to planning and implementing a comprehensive overhaul of the various building disciplines.

After an extensive analysis, Siemens proposed the following measures for the Marriott hotel in Roissy:

- Upgrade the heat recovery in the four most important ventilation systems
- Improve control of the ventilation systems
- Implement demand-based ventilation with CO_2 sensors
- Provide live visualization of energy consumption
- One-year remote monitoring and remote operation of the installation with implementation of findings gained during this period

The upgrade of the ventilation systems was completed in March 2013 after only a one-month construction phase. At the same time, the visualization and remote monitoring programs were implemented. Compared to the period prior to the upgrade, the energy costs and CO_2 emissions fell by 15 percent during the first six months of operation. In addition, electricity and gas consumption at the Marriott hotel in Roissy were reduced by 6 and 17 percent respectively, compared to the second half of 2012.

In addition to these positive results, Marriott's management was particularly impressed by the excellent and efficient collaboration with Siemens at the regional and global levels. Since the implemented solution is easily adaptable to almost all of the 4,000 Marriott hotels, future collaboration between Marriott and Siemens is expected to very productive: The first phase of the Marriott Energy Efficiency Program is now underway, with energy modernization being implemented in 20 European hotels. Based on experiences gained during the initial project, savings should be between 10 and 15 percent (depending on the building's condition), and the investments needed are expected to be paid back in three years.

Background: the Siemens Energy Efficiency Program

The Energy Efficiency Program developed by the Siemens Building Technologies (BT) Division and tested extensively on Siemens properties follows a standardized process: First, the energy experts from BT conduct a careful analysis on site to determine the energy consumption and related environmental impact of the buildings being optimized. The resulting report demonstrates the potential for saving energy. In a second step, a comprehensive, customized package of improvement measures is compiled on the basis of this systematic assessment. After the measures have been implemented, continuous monitoring by a Siemens Advantage Operation Center (AOC) ensures the availability and ongoing optimization of the systems, These steps ensure that the energy efficiency level achieved is retained and perfected even further.

Siemens has previously implemented its Energy Efficiency Program at some 20 of its own locations, resulting in savings of 5.5 million euros in energy costs and a reduction in CO_2 emissions of 18,000 metric tons.

With its Energy Efficiency Program, Siemens enables its clients to increase energy efficiency, reduce operating costs, and benefit from a rapid return on investment. Clients can also take advantage of energy performance contracting, an agreement where necessary investments are financed through guaranteed savings in energy and operating costs.

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For further information on the Energy Efficiency Program, please see http://www.buildingtechnologies.siemens.com/bt/global/en/energy-efficiency/energy-efficiency-program/Pages/energy-efficiency-program.aspx

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