

CASE STUDY

InterContinental San Francisco— Elegance and Responsibility

**PG&E programs help LEED-certified hotel
become one of the nation's greenest**

Opened in 2008, the InterContinental San Francisco is one of more than 4,500 hotels in the worldwide InterContinental Hotels Group, the world's largest hospitality company by number of rooms. The 32-story, 600,000-square-foot InterContinental San Francisco tower encompasses 550 guest rooms with floor-to-ceiling windows, 14 suites, 2 ballrooms, 21 meeting rooms and approximately 43,000 square feet of meeting space, as well as a Michelin-starred restaurant, a 10-room treatment spa, a full-service fitness center and an indoor pool.

From the day its doors first opened, the InterContinental San Francisco has demonstrated a uniquely passionate commitment to environmental sustainability and energy efficiency. With the enthusiastic support of hotel management, Chief Engineer Harry Hobbs and his team have carried out a green campaign that in 2011 produced LEED Gold certification from the U.S. Green Building Council. The hotel is the first InterContinental property, and one of the few hotels in America, ever to achieve this prestigious ranking for sustainability.

The hotel also has comprehensive recycling and composting programs (including two solar-powered trash compactors), compact fluorescent light bulbs and LEDs in all guest rooms and most public spaces, a dimming system controlling exterior and ballroom lighting, and occupancy sensors in guest rooms, stairwells and back areas (offices, storage, housekeeping) that control lighting and thermostats to reduce energy consumption when no one is present. ENERGY STAR® appliances and green cleaning methods are used throughout the hotel, and most employees commute via public transportation.



The Initiative

Retrocommissioning for Energy Savings

When the InterContinental San Francisco opened, its annual electricity consumption was six million kilowatt hours, at a cost of \$675,000 a year. Within six months of the opening, Hobbs saw opportunities for reduced energy consumption that had been missed in the construction of the building. He asked Pacific Gas and Electric Company (PG&E) for an audit under its Retrocommissioning Program to better identify those opportunities.

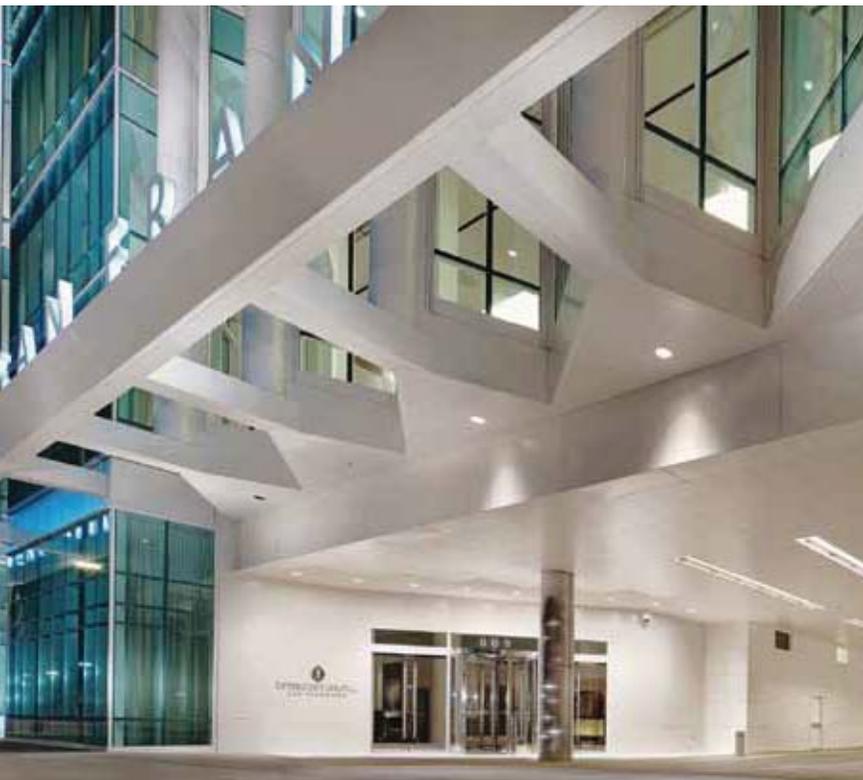
Two local firms, CB Engineering and Intergy, carried out the survey and ultimately executed a variety of retrocommissioning projects that reduced the hotel's energy consumption by nearly a million kilowatt hours and their electric bill by \$72,000 in just the first year and \$130,000 overall (about 19 percent). The hotel's capital cost of \$60,000 for the measures was more than half covered by a LodgingSavers rebate of \$35,000, so the simple payback on the initial effort was less than four months.

Furthermore, because the survey identified these issues so soon after the hotel opened, many of the measures taken were covered by the original developer's warranty. For example, an installation flaw in the guest room thermostats was causing both wasted energy and guest complaints, and the retrofit overseen by PG&E's Retrocommissioning Program saved the hotel \$75,000 in natural gas and electricity costs—and eliminated the complaints.



“Pacific Gas & Electric has been such a staunch advocate of what we’ve been doing that even with the measures that we’ve implemented that weren’t directly under their programs, they have provided the hotel with guidance that emphasized our best interests. Juan Miller, our PG&E account representative, and Deanna Meredith of LodgingSavers have always had tremendous integrity and assisted us on the best way forward, even with measures for which the San Francisco Energy Watch rebates were more lucrative. PG&E and LodgingSavers helped to identify and define every measure we took and maximize our return on investment.”

—HARRY HOBBS, CHIEF ENGINEER, INTERCONTINENTAL SAN FRANCISCO



The Partners

LodgingSavers and San Francisco Energy Watch

For the next phases of the InterContinental San Francisco's campaign, the hotel and PG&E brought in two powerhouse partners—LodgingSavers and San Francisco Energy Watch (SFEW).

LodgingSavers is a PG&E program specifically designed to help hotels reduce their energy consumption by providing energy audits, efficiency measures and rebates through a PG&E partner. Santa Cruz-based Ecology Action provides LodgingSavers auditing, direct install and retrocommissioning measures to hundreds of hospitality customers across the PG&E service area.

San Francisco Energy Watch is administered by PG&E in collaboration with the City and County of San Francisco. SFEW helps San Francisco business and multifamily residential properties reduce their energy costs by offering free energy assessments and energy-efficient equipment and rebate programs. Hobbs credits PG&E and LodgingSavers for identifying the opportunities and providing the integrity to help the hotel maximize its rebates.

The Projects

Lighting and Air Conditioning

The LodgingSavers program helped the InterContinental San Francisco execute a 2009 lighting retrofit for the valet parking garage and service area hallways. In the garage, 102 metal halide lamps were consuming 210 watts of power apiece, a figure that dropped by more than 75 percent when 42-watt compact fluorescent lamps (CFLs) were installed. In the back areas, 50-watt MR-16 halogen lamps were replaced by 30-watt IR halogen lamps. Overall, about 1,000 fixtures were retrofitted in the \$45,000 project. LodgingSavers delivered a \$32,000 rebate to cover most of the capital cost, and the retrofit lowered the hotel's annual energy costs by \$35,000, so the simple payback for the project was about five months.

Another project with a speedy return on investment was a lighting retrofit in the hotel's two evacuation stairwells, where 260 54-watt fluorescent fixtures remained on 24/7. All fixtures were retrofitted with a bi-level "blinkie" lighting system, in which an occupancy sensor turns off the primary lamp automatically when no one is present and a 3-watt "night light" provides minimal illumination until the primary lamp is needed. The \$45,000 retrofit has provided \$35,000 in annual energy cost savings, was supported by a \$17,000 SFEW rebate and the estimated simple payback is 10 months. The project has also gotten an enthusiastic response from environmentally-aware hotel guests who use the stairways and applaud the hotel's green commitment.

The largest and most impactful energy-saving measure to date has been the 2010 installation of a water-side economizer for the rooftop HVAC system. The economizer takes advantage of the cool San Francisco weather to provide more efficient air conditioning with less need for chillers. The capital cost for the project was \$220,000, including \$18,000 for a helicopter to deliver the equipment to the roof, but it has paid off beautifully. The HVAC system now operates its chillers about 2,000 fewer hours per year, reducing the building's energy demand for air conditioning by eight percent and cutting the hotel's electric bill by \$75,000 a year. And with a \$28,000 rebate to support it, the project's payback period will be about 27 months.

The next project planned is the installation of variable frequency drives (VFDs) on two chillers in the HVAC system, which currently run in on/off mode. The project is projected to have the same energy-saving potential as the highly successful water-side economizer project. Also on the drawing board are seven other measures, including VFDs for the condenser water pumps and exhaust fans, a chilled-water temperature reset and an overall HVAC equipment optimization. These measures are expected to reduce energy use by another half-million kilowatt hours and produce another \$67,000 in rebates from LodgingSavers.

The GATEWAY Project

New LED Technology

PG&E's Pacific Energy Center (PEC) provides educational programs and design tools for energy-efficient buildings and serves as a showcase for new products identified by PG&E's Emerging Technologies Group. The PEC also happens to be across the street from the InterContinental San Francisco.

In 2009, PEC engineers suggested testing new lighting technology at the hotel under the auspices of PG&E and the U.S. Department of Energy's (DOE) Gateway Program. Hobbs had long wanted to replace much of the hotel's existing lighting with LEDs, but had been unable to find new LED products of sufficient consistency or quality.

The DOE and PEC experts selected the new lighting to meet the hotel's strict standards. 900 new 6.5-watt LED MR16 lamps were installed in the lobby and other public areas of the hotel, replacing 20-watt and 30-watt halogens in a wide variety of lighting fixtures, such as recessed downlights, track lights and multi-lamp linear luminaires. Also, two sets of 75-watt halogen PAR30 lamps were retrofitted with 11-watt LEDs. After burning for a set number of hours, the lamps are removed and assessed for color consistency and quality of output. The LEDs, provided free of charge, have reduced the hotel's energy costs by about \$5,000 a year.

Having identified the best available LED technology, the hotel moved forward with a larger retrofit, replacing 3,000 guest room lights with LEDs in 2011. The \$40,000 project is expected to take another \$30,000 off the hotel's annual electric bill, and with another \$17,000 rebate from SFEW, payback will occur in less than a year.



“The beauty of working with PG&E and the DOE is that we had the best minds available to help identify the best-quality LED products, and we didn't have to do the research on our own. And we got the best available technology installed in our most public spaces, where it not only saves energy but enhances the guest experience from the moment they walk in the front door.”

–HARRY HOBBS, CHIEF ENGINEER, INTERCONTINENTAL SAN FRANCISCO

The Bottom Line

Savings and Satisfaction

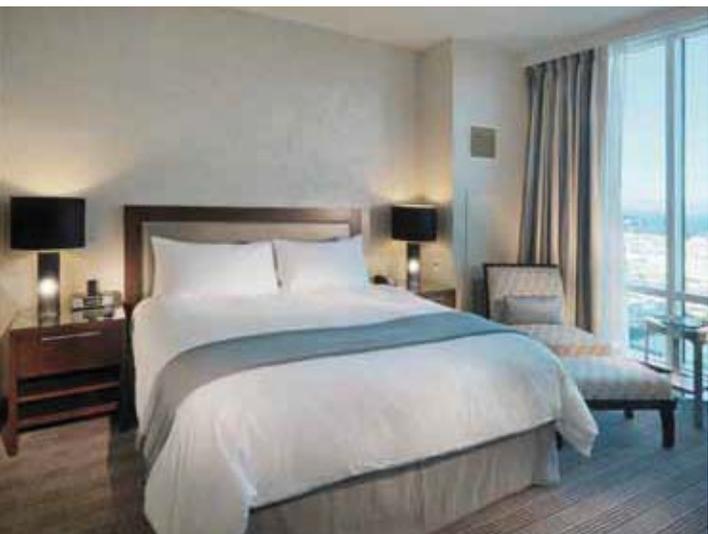
In three years of remarkable efforts, the InterContinental San Francisco has reduced its energy consumption by nearly 20 percent and its energy bills by more than a third. The capital costs of the various measures taken have been significantly defrayed by nearly \$200,000 in rebates from LodgingSavers and SFEW, and the overall payback on investment is about 18 months.

The hotel's ENERGY STAR® rating has improved from 64 to 87, which, in conjunction with LEED Gold, makes the InterContinental San Francisco one of the greenest large hotels in the nation. Hobbs gives enormous credit to his PG&E and LodgingSavers colleagues for his success.



“This relationship has been enormously satisfying, personally and professionally. Juan and Deanna have been tireless, continually positive, and always available with their help and guidance. We couldn't do the things we've done without the wholehearted commitment and support of this team. They simplified the process to the extent that we feel this will serve as a model to other hotel properties considering similar measures. Together, we've shown what can be accomplished in a very short time with the right teamwork—and teammates.”

–HARRY HOBBS, CHIEF ENGINEER, INTERCONTINENTAL SAN FRANCISCO



The Future

On to the Mark!

The InterContinental San Francisco's energy conservation program has been so successful that management has decided to carry out similar operations at another InterContinental hotel, San Francisco's legendary Mark Hopkins, a Nob Hill institution since 1926. An 85-year-old hotel offers even more opportunities to save energy than a three-year-old building, and the objective is to reduce the Mark Hopkins' annual energy costs from \$1 million to \$750,000.

NEXT STEPS WITH PG&E

To learn how PG&E can help your business reduce energy consumption and costs, contact your local PG&E representative or call our **Business Customer Service Center** at 1-800-468-4743. More information is available at www.pge.com/hospitality.