



Client:

Ohana Waikiki Malia Hotel
Honolulu, Hawaii

Industry:

Hospitality

Technology:

- HVAC Design and Retrofit
- Energy Management Control System
- Pumping System Design Retrofit
- Lighting Retrofit

“ Before meeting with Energy Industries, I wouldn't have believed it was possible to use energy saving alone to pay for our equipment replacements. But **'seeing is believing'**, and I have seen the results. ”

Glenn McGinn,
General Manager
Ohana Waikiki Malia Hotel

“ The energy reduction on this account was so significant that we had our metering equipment checked to see that they were operating properly. ”

Dan Sakamoto
Account Manager
Hawaiian Electric Company

Case Study in Energy Efficiency

The Ohana Waikiki Malia Hotel

In August 2005, the owners of The Ohana Waikiki Malia Hotel faced serious challenges despite improving hotel occupancies throughout Waikiki. Electricity rates and fuel costs were rising rapidly and the hotel's 25-year old mechanical systems were being stressed beyond their capacities, increasing the potential of system failures. Seeking viable solutions, the hotel enlisted the expertise of Hawaii-based Energy Industries, LLC to help them.

Six months later, the hotel enjoyed new energy-efficient equipment - HVAC central plant, variable primary chilled and condenser water pumping systems, efficient domestic hot water system, booster pumping system, sewage ejector pumping system, upgraded lighting for common areas, and a new energy management control system - that had considerably lowered monthly electric utility expenses. The hotel managers also enjoyed the "peace of mind" that the risk of equipment failures had been mitigated and that the new systems were equipped with redundant safeguards.

The comprehensive energy-efficiency program improved operating efficiencies at the hotel and reduced overall electricity consumption by approximately 30%.

Perhaps the most remarkable part of the energy-efficiency project is that the hotel's capital improvement budget was left untouched, and the \$750,000 retrofit costs did not reduce the hotel's operating cash flow because they employed a customized energy equipment lease-purchase program designed by Energy Industries.

This program provided the Ohana Waikiki Malia Hotel with significant financial benefits beginning in the first year, including:

- \$0 front-end payment on project.
- \$12,000 of cash flow from energy savings.*
- \$20,000 one-time cash incentive for energy-efficiency from local utilities.
- \$50,000 of energy cost-savings accrued during the construction phase before lease payments commenced.
- \$18,000 in savings of avoided repair and maintenance.
- Unspecified tax benefits.

In summary, in addition to the beneficial operational efficiencies gained from the capital improvements, the hotel will have over \$100,000 in increased operating cash flow as a result of energy-efficiency savings integrated with an Energy Industries custom lease-purchase program.

* Each month, \$1,000 of free cash flow is generated from \$10,000 saving in utility bill netted against \$9,000 lease payments for an equipment lease. Figures are rounded.



info@energy-industries.com
www.energy-industries.com

(877) 839-7305

Hawaii · Washington · New York · California · Oregon · Idaho · Guam

The Ohana Waikiki Malia Hotel

Facility Description:

The Ohana Waikiki Malia Hotel is a 327-room hotel originally built in 1979, sited at the corner of Kuhio Avenue and Lewers Street in Waikiki. The property is presently owned by Lucky Hotels U.S.A. Co., Ltd. and is managed by Outrigger Hotels & Resorts under its "Ohana Hotels" brand.

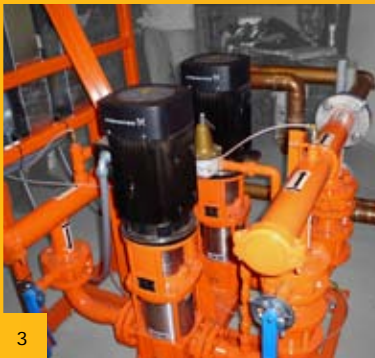
The property had been running original building equipment – HVAC, water heater, pumps, and motors – that had over the years been rebuilt and patched, making them operate very inefficiently. In addition, ongoing repair and maintenance was costly because of the age of the equipment.



1



2

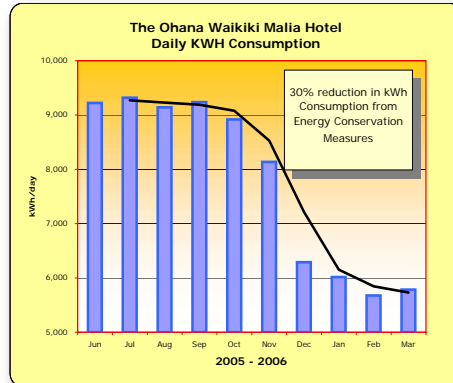


3

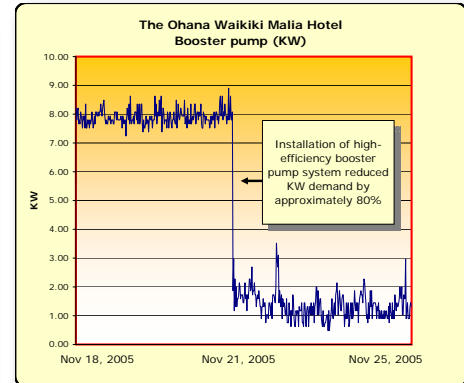
1: New water-cooled screw chillers by York.

2: ABB VFDs and cross-connected chilled and condenser water pumps.

3: New booster pump system by Tiger Flow.



Graph of daily kWh consumption showing the effect of energy efficiency improvements at the hotel.



Log of booster pump system showing kW reduction after installation of new equipment.

Based on an energy feasibility study of the facility the following Energy Conservation Measures (ECMs) were specified and implemented by Energy Industries:

- Overhaul of the mechanical plant
 - Replaced three chillers with two water-cooled screw chillers.
 - Installed four new cross-connected chilled and condenser water pumps.
- Replacement of the water heater system
 - Replaced single electric element water heater with two high-efficiency Raypac natural gas heaters.
- Replacement of sewage ejector pumps and controls.
- Replacement of constant volume booster pumping system with a duplex variable volume pumping system.
- Installation of variable frequency drives on the chilled and condenser water pumps and NEMA premium efficient motors.
- Lighting upgrade.
- Installation of a LONWorks Circon DDC energy management control system.

Energy Industries recently exhibited at the West Coast Energy Management Congress. For more information, visit www.aeecenter.org/shows



info@energy-industries.com
www.energy-industries.com

(877) 839-7305

Hawaii · Washington · New York · California · Oregon · Idaho · Guam