

GE saves Queen's Medical Center \$375,000 per year with energy-efficient lighting products



At Queen's Medical Center (QMC), Honolulu, Hawaii, energy costs were averaging \$375,000 a month in 2004 and increasing at a rate of three to five percent every year. Oil price increases were regularly passed on to QMC by utilities in the form of "energy cost adjustments."

"Our base kilowatt consumption wasn't increasing substantially," says Michael Kim Seu, manager of general maintenance for the hospital. "But our energy costs were just climbing and climbing ever upward."

To contain costs, the facility initiated an enterprise-wide energy initiative, which included a comprehensive lighting retrofit. "We would be doing a disservice to our community, our patients, our staff and all QMC stakeholders if we didn't aggressively seek out ways to improve our facilities and our bottom line," says Dennis J. Burns, manager of facilities and biomedical engineering.

The hospital's administrative council wanted proof that a large investment in new lighting technologies would provide

PROJECT PROFILE

The facility

Founded in 1859, the Queen's Medical Center (QMC) is the largest private hospital in Hawaii, with 505 acute care beds and 28 sub-acute beds. Located in downtown Honolulu, Hawaii, QMC is a private, non-profit, acute medical care facility.

The opportunity

Substantially decrease monthly energy cost using energy-efficient lighting system.

The GE solution

Comprehensive lighting retrofit, including:

- Over 22,300 F32T8 linear fluorescent lamps and over 15,000 standard electronic ballasts removed and replaced with highly efficient F28T8 linear fluorescent lamps and UltraMax® ballasts
- Parking garage outfitted with 93 54-watt T5 linear fluorescent lamps, replacing 173 150-watt standard metal halide lamps

The results

- Annual energy savings of \$375,000 (based on a rate of \$0.21 per kWh)
- \$100,000 worth of rebates from Hawaiian Electric Company
- 30 percent reduction of electrical consumption in parking garage



a substantial and immediate payback. Mark Battaglia of Grainger, a leading distributor of facilities maintenance supplies, and members of his team worked with GE Lead Account Manager Glenn Sameshima to show Kim Seu and Burns how a new mix of GE Consumer & Industrial lighting products could lower QMC's overall cost of light.

The team demonstrated new GE technologies and products alongside existing solutions in use at QMC during a visit to the GE Lighting & Electrical Institute on GE's Nela Park campus in Cleveland. Thousands of customers such as distributor sales representatives, engineers, property and facility managers and contractors visit the Institute each year to see firsthand how newer, more energy-efficient lighting solutions can lower energy and maintenance costs with less of an impact on the environment.

In addition, an extensive lighting audit was conducted for QMC by Darren Kimura of Energy Industries, an energy services company.

Highly efficient, high-output lighting

Approximately 90 percent of the lighting retrofits, excluding the parking garage, involved removing over 22,300 F32T8 linear fluorescent lamps and over 15,000 standard electronic ballasts. These were replaced with highly efficient F28T8 linear fluorescent lamps and UltraMax® ballasts from GE Consumer & Industrial. The install also included reflectors for enhanced light output and energy-saving occupancy sensors, components of the comprehensive new lighting system recommended by Kimura.

"The interoperability of the F28T8 UltraMax System gave us additional energy savings on top of a wattage decrease," reports Kim Seu. "Our patients, staff and security team have all had high praise for the new lighting, which provides equal or better light output and better color rendering than the previous system."

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imagination at work

In the seven-story parking garage, 173 150-watt standard metal halide lamps (one per fixture) were replaced with 93 54-watt T5 linear fluorescent lamps (two per fixture). Lowering the watts per fixture and number of fixtures on each level of the garage amounts to a 30-percent reduction in electrical consumption. Two other garages are slated for similar retrofits.

Significant cost savings

After the forecasted 18-month payback period for the full project – 11 buildings plus the garage – QMC has realized savings of \$375,000 per year (based on a rate of \$0.21 per kWh). As a bonus, the retrofit netted QMC over \$100,000 worth of rebates from Hawaiian Electric Company.

"This major lighting retrofit project utilizing exclusively GE lamps and ballast is one of several energy-reduction programs that are ongoing at our hospital and had the greatest impact on the reduction of energy," says Kim Seu. "The large monetary rebates and the reduction of power from this retrofit had a direct impact on our utilities bottom line, which equates to more cash flow for patient-care personnel and equipment."

"QMC has fully embraced lighting best practices," notes Gerry Frank, regional sales vice president at Grainger. "Their use of energy-efficient GE lighting products provides peer organizations with a great template for cutting operating and maintenance expenses."

QMC and GE continue to look for more innovative ways to reduce energy consumption and operating costs through new lighting and other energy-efficient technologies.

Reduce. Conserve. Streamline.

Whether you're growing a new, leaner hospital from the ground up, or targeting specific areas of your existing facility for greater returns, GE can help bring new efficiencies and savings to every area of your facility.

Our broad portfolio of products and services can help reduce energy demand, conserve water, generate renewable energy onsite, maintain air quality, reduce waste and improve staff productivity and satisfaction. Market-leading, innovative solutions such as our world-class, environmentally responsible LED systems drive significant energy and maintenance savings.

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