

AT A GLANCE

Manchester-Boston
Regional Airport
Manchester, NH

PROJECT

Parking Garage
LED lighting system retrofit
with wireless controls

SAVINGS

Operating costs decreased
by \$42,000

Manchester-Boston Regional Airport Parking Garage LED Lighting Retrofit

Background

The Manchester-Boston Regional Airport is conveniently located in the heart of New England and serves leisure and business passengers with destinations that include New Hampshire, Maine, Massachusetts, and Vermont. Since the start of its redevelopment plan in 1992, the airport has significantly grown in size and offerings and by 2005, they surpassed 4.4 million passengers served and set an annual passenger activity record. After completing two major passenger terminal construction projects by Spring 1999, the airport then opened a new, six-level, 4,800 space customer parking garage the following December. The new parking garage provided a much-needed covered parking option for travelers as well as a facility for rental car agency operations thus making the airport even more competitive to their regional counterparts. A few years later, they attached a covered elevated walkway to the main terminal and the parking garage’s innovative design and overall appeal added to the aesthetic improvements already made to the airport terminal and campus.

Challenge

As the Manchester-Boston Regional Airport continued to increase terminal capacity and add additional airlines, the facilities team was experiencing increased maintenance costs, decreased energy efficiency, and inconsistent lighting output throughout the customer parking garage. The entrance and exit ramps to the parking garage were lit with 400W, metal halide fixtures that were pedestal mounted to shine up on the ramp ceilings and operated 24 hours - 7 days a week. This installation was creating huge energy costs and unwanted strain on the limited maintenance support staff due to the constant need for lamp and ballast replacement. In addition, the lamps provided inconsistent light levels and colors that could affect driving, passenger safety and overall aesthetics.

“Energy savings was a strong consideration for this project. However, we were also attracted by the prospects of substantial savings in maintenance costs. We proceeded with the project after conducting a successful test of the product and viewing before and after pictures.”

— John Adams,
Facility Manager
Manchester –Boston
Regional Airport

Garage ramp with inconsistent lighting output



LEADING EDGE DESIGN GROUP



PREVIOUS

80-400 Watt Metal Halide
24/7 - 365 days
8,760 hrs & 318,864 kWh
\$43,908
annual operating cost



RETROFIT

80-40 Watt LEDs
with daylight sensors
4,415 hrs & 13,904 kWh
\$1,915
annual operating cost

Solution

Due to airport budget constraints, Leading Edge Design Group worked with Public Service of New Hampshire on incentive and funding programs that were available for the Manchester-Boston Regional Airport. The PSNH program and a cost-analysis provided by Leading Edge Design Group enabled the airport team to present a project plan, budget, and return on investment data to the airport management team to gain approval.

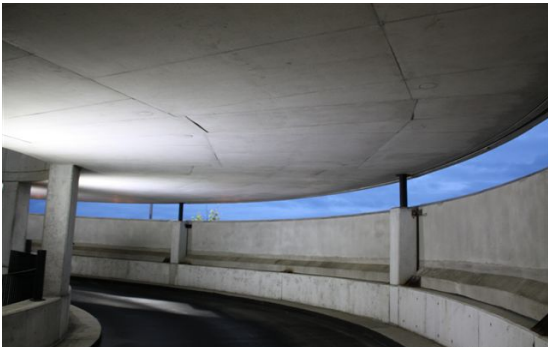
Upon approval to test the solution, Leading Edge Design Group worked with partners to develop a custom 40W LED engine to fit the existing 400W metal halide fixture housings. One fixture was retrofitted with the LED engine and re-installed for observation by the airport facilities team as well as the utility company that was supporting the project. The new fixture proved to be much better lighting than the metal halide at a considerably reduced load and the decision was made to proceed with the retrofit for all 80 units. Day lighting controls were implemented to operate the lights only during the sundown hours to further enhance the savings and life cycle of the product.

The Manchester-Boston Regional Airport has dramatically reduced their parking garage energy consumption from 318,864 kWh per year to 13,902 kWh per year and reduced annual operating costs by \$42,000. The LED lamps last for more than 50,000 hours, vs. 15,000 hours for the previous installation. They have also eliminated lighting maintenance costs for many years, improved the light levels, and created consistent color temperatures throughout. **After utility incentives were applied, the project achieved a ROI of 1.2 years!**

PSNH Municipal Smart Start Program

Public Service of New Hampshire municipal customers can install energy saving measures with no up front cost through the Smart Start Program. Payment for services and products are made over time with the savings obtained from lower energy costs. PSNH finances the remaining costs associated with the purchase and installation of approved measures. Incentive programs like this are available through most utility companies in every state.

Garage ramp with new LED solution





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About

Leading Edge Design Group is a leading national provider of energy optimization services that delivers significant energy savings to the public and private marketplaces through efficient data center designs and emerging LED lighting and wireless lighting control technologies. Founded in 2007 with the goal of pursuing, promoting, and providing the finest energy optimization solutions available, we help our customers minimize the environmental impact of their businesses while improving operational reliability and reducing costs. Leading Edge Design Group is dedicated to encouraging, challenging, and contributing to energy industry innovation with an ongoing commitment to our community and our environment. Visit us at www.ledesigngroup.com and connect with us on Twitter @ledesigngroup.