

Prudential Center Garage

Boston, Massachusetts

Boston Properties retrofitted conventional T8 fluorescent lighting at the Prudential Center Garage with light emitting diode (LED) tubes. The LED conversion reduces garage operating costs, energy consumption and carbon emissions. The project also improves the garage lighting system reliability and lighting level quality.

Over the course of 6 weeks, 7,552 lamps were replaced with LED conversion tubes by ThinkLite. Existing 30 watt T8 linear tubes and ballasts were removed and replaced with 8 watt driverless tubes at a rate of approximately 5 minutes per fixture. Existing fixtures were reused and augmented with ThinkLite's G90 sockets. The proprietary sockets prevent fluorescent lamps from being mistakenly re-installed in the future, which helped the utility approve project rebate incentives.

The conversion marks a technological milestone in lighting efficacy. The LED tubes have a lighting efficacy of 131 lumens per watt, compared to a baseline fluorescent efficacy of around 90. The ThinkLite proprietary driverless technology reduces the

THINKING ON THE BRIGHT SIDE

CUTTING EDGE LED LIGHTING TECHNOLOGY HAS BEEN ADOPTED AT THE PRU GARAGE, REDUCING OPERATING COSTS AND CARBON EMISSIONS

average number of components in a driver from 156 to 4 pieces, and seals the driver into a tiny microchip. The result is a lighting solution that produces less heat, has a lower depreciation rate of lumens and increased lifespan.

Since the end of 2015, average power demand for the South Garage was reduced 57%. Annually, the system will save 1,500 MWh, amounting to \$240,000 per year. The new lighting will also reduce maintenance cost. With a lifespan of 65,000 hours and no ballasts, the LED tubes will run 2.3 times longer than conventional fluorescents, and ballast replacement will never be required.



BY THE NUMBERS

Lamps Replaced: 7,552
Initial Cost: \$600,000
Savings per Lamp: 22 watts
Annual Energy Savings: 1,500 MWh
Annual Cost Savings: \$240,000
Annual CO2e Reduction: 440 Tons
Simple Payback Period: 2.5 Years
10 Year Net Present Value: \$730,000

“This project was a perfect application of a new technology and a win for all involved— Boston Properties, Eversource (the electric utility) and ThinkLite. We are actively exploring other applications across our portfolio.”

- Mike Fitzgerald
Director of Engineering,
Boston Region
Boston Properties

