

Case Study: Potomac Yard Parking Garage



Re-lighting a parking garage structure for performance and energy savings

History

One and Two Potomac Yard, both LEED Platinum certified for Existing Buildings, are well known in the Washington Metropolitan area for their sustainability and green building practices. Property management and ownership, Cassidy Turley and USAA Real Estate respectively, continue to push for sustainability and energy reduction to reduce operating expenses and add value to the assets.

Located on a formerly abandoned railroad yard in Arlington, Virginia, the two 12-story buildings are comprised of approximately 620,000 sq. ft. of office and retail, conference center space, and a fitness center facility; and two five-level, above/below grade parking decks totaling 300,000 sq. ft.

The lighting scheme inside Potomac Yard's 300,000 sq. ft. parking garage consisted of 876 Metal Halide HID light fixtures. While the 210 watt HID lamps initially installed met requirements, overheated fixtures resulted in higher energy usage, shattered bulbs and damaged lenses, thus reducing light output and leaving some areas of the garage dim and under lit.

Cassidy Turley and USAA Real Estate Company set out to perform a garage lighting retrofit to 1) increase light quality; 2) minimize on-going maintenance requirements and expenses; and 3) reduce energy costs.

Project

Truland Service installed SIMKAR Corporation's GVV Series lamp into the existing Metal Halide fixtures. The 43W LED fixture is UL Certified for wet locations, is DesignLights Consortium (DLC) qualified, has a Lumen output of 3,700, and a calculated LM80 lifetime of 158,000 hours.

The project was completed in approximately two months, without any disruption to parking garage operations. Cassidy Turley also ensured the project's eligibility and received a \$10,000 utility incentive through Arlington County's *Arlington Initiative to Rethink Energy* (AIRE) Program.

Results

The garage lighting retrofit project has become a marketing tool for lighting specifications, not only for the benefit of our on-site EPA Green Team, but also for other government entities.

The garage lighting retrofit 1) increases light quality and distribution by eliminating losses resulting from trapped light, protective covers and lenses, and inefficient ballasts; 2) provides an estimated maintenance cost saving of \$43K typically generated by failed lamps and ballasts replacements; and 3) reduces the lighting system's energy consumption by 23% while doubling the fixture's lamp life expectancy.

The new fixtures yield annual savings of \$135,783 and 1.3M kilowatt hours; with an estimated payback of 1.59 years.



PROJECT COSTS AT A GLANCE

Description	Cost
Equipment	\$173,822
Sales Tax (6%)	\$11,095
Installation, Labor, Tax and Disposal	\$40,946
Subtotal	\$225,863
Utility Rebate	(\$10,000)
Total Cost (after Rebate)	\$215,863
Annual Savings (based on \$.07 per kWh and annual maintenance cost savings of \$43k)	\$135,783
Estimated Payback	1.59 Years
ROI	63%
IRR	62%