

LIGHTING ENERGY EFFICIENCY IN PARKING CAMPAIGN

Overview

The JBG Companies (JBG), an investor, owner, developer, and manager of real estate in the Washington, D.C. Metropolitan Area, achieved almost 50% energy savings compared to energy code by using a combination of high efficiency LEDs coupled with lighting controls for the parking structure at the National Cancer Institute (NCI) Shady Grove in Maryland. The NCI parking structure was recognized by the Lighting Energy Efficiency in Parking (LEEP) Campaign for the Highest Percentage Energy Savings in a Single Parking Structure (New Construction) and Highest Absolute Annual Energy Savings in a Single Parking Structure (New Construction). In addition to its 2014 LEEP Campaign Award, the buildings have also been recognized in 2011, 2013, and 2014 by both local Maryland organizations and national organizations.

Keys to Success

In 2010, JBG began construction for this new facility within NCI Shady Grove, neighboring with the Johns Hopkins University Montgomery County campus. The General Services Administration (GSA) required the building to be LEED Silver. JBG was awarded the lease for this project and exceeded GSA's requirements, making both the office building and its accompanying parking garage LEED Gold. The choice to reach LEED Gold for not only the office building, but also the parking structure was an easy one for JBG.

While GSA leases the office for a 10-year term, the parking structure is separately contracted to NCI. The parking structure, which is owned and managed by JBG, accommodates over 2,000 parking spots that serve both mixed retail customers and NCI employees and visitors. A major factor for both GSA and JBG was to reduce energy costs, because GSA pays the utility bills for the office building while JBG is responsible for the utility bills for the parking structure.



National Cancer Institute. Jim Tetro Photography courtesy of The JBG Companies.

Results	
Energy Savings	532,000 kWh, a savings of 68% over the calculated lighting baseline.
Lighting Power Density (W/sq. ft.)	0.10, a reduction of 50% below energy code
Installation and Maintenance	The lighting controls included occupancy sensors integrated into each fixture to reduce the light output when the area is unoccupied. The lighting controls also incorporated photocells to reduce or turn off some lights when there is ample daylight.
Overall Performance	Due to the success of the lighting controls system, two other projects by JBG have incorporated the same technologies and both have demonstrated similar results.

“JBG did the financial analysis and determined it was best to build the garage to LEED Gold including high efficiency lighting”

John Simeon, Development Executive, JBG

JBG worked with the parking structure architect, HOK, to install LED lighting and LimeLight TwistHDM controls. The lighting controls included occupancy sensors integrated into each fixture to reduce the light output when the area is unoccupied. The lighting controls also incorporated photocells to reduce or turn off some lights when there is ample daylight. Finally, a time clock was installed as part of the control system to turn off or reduce the lighting at a specific time. FB Harding helped install the lighting and LimeLight provided the controller and initial programming of each light.

Next Steps

Due to the success of the lighting controls system, two other projects by JBG have incorporated the same technologies and both have demonstrated similar results. JBG is planning to retrofit other existing garages with LED lights to help reduce the energy costs. The main driver has been to incorporating LED lighting to projects, as JBG has seen positive returns on savings. Also, another project in Washington, D.C. includes new construction and retrofits to the lighting at their L’Enfant Plaza property. Additionally, even though the NCI parking structure project did not use utility rebates, JBG has been focusing on projects that are able to incorporate incentives for LED lighting. They have seen some LED parking garage lighting retrofits in Maryland that have almost been paid in full by rebates.

JBG’s accomplishments have not gone unnoticed by its Federal partners at NCI, and GSA has been happy with the project, as well. Simeon believes that GSA and other agencies should be very interested in participating in the LEEP Campaign since it helps them meet their energy goals. “The LEEP Campaign fits perfectly with the Federal government’s mandated requirements to reduce energy consumption per gross square foot of its Federal buildings relative to a fiscal year 2003 baseline by 30% by FY 2015,” concludes Simeon.

2014 LEEP Award:

Location:	National Cancer Institute Rockville, MD
Solution:	LED fixtures with lighting controls
LEEP Awards:	Highest Absolute Annual Energy Savings in a New Construction Single Parking Structure Highest Percentage Energy Savings in a New Construction at a Single Parking Structure

“Overall, we designed a very efficient parking garage.”

Syed Ali, Senior Property Manager, JBG

Learn More

Through the [Better Buildings Alliance](#), members across different market sectors work with the U.S. Department of Energy’s (DOE) exceptional network of research and technical experts to develop and deploy innovative, cost-effective, energy-saving solutions that lead to better technologies, more profitable businesses, and better buildings in which we work, shop, eat, stay, and learn.

Learn more about how to join the Better Building Alliance’s Lighting Energy Efficiency in Parking Campaign, at www.leepcampaign.org/. LEEP Participants are collectively saving over 120 million kilowatt-hours and over \$10 million annually across 430 million square feet of lots and garages by upgrading to high efficiency parking lighting.

Find more resources and guidance on lighting in the [Better Buildings Solution Center](#).