

Take the LEEP - An Introduction to the Lighting Energy Efficiency in Parking Campaign



Photo Courtesy of Gary Cudney, President, Carl Walker, Inc.



Agenda

- Introductions
 - LEEP Campaign Organizers
 - LEEP Resources and How to Join
 - Case Study - Kimco Realty Corporation (Nate Mitten)
 - Case Study - University of Central Florida (Alexandra Kennedy)
 - Questions
-

LEEP Campaign Organizers



Karen Penafiel
Vice President
Advocacy , Codes & Standards
BOMA International

Karen Penafiel serves as vice president of advocacy, codes and standards at BOMA International. Karen leads BOMA's advocacy programs and oversees BOMA's model building codes and voluntary standards efforts. As the association's chief lobbyist, she works with Congress and the federal agencies on a wide range of issues affecting the commercial real estate industry. Karen has taken the lead on energy and sustainability issues for BOMA for the past decade and is the author of BOMA International's two guidance documents on electricity deregulation. She is currently leading the association's market transformation efforts and helped develop BOMA's green lease guides. Karen is a graduate of Hamilton College, where she received a Bachelor of Arts degree in Government.



Paul Wessel
Executive Director
Green Parking Council

Paul Wessel is the Executive Director of the Green Parking Council, a national 501(c)(3) organization developing and promoting green parking practices through certification and credentialing programs, open-sourced standards, professional leadership and educational development and training for organizations and individuals in the parking industry. GPC works at the intersection of parking, green building, clean technology, renewable energy, smart grid infrastructure, urban planning and sustainable mobility. He has a M.S. in Urban Policy Analysis and Management from New School University and a B.A. in History from Wesleyan University.



Marina Badoian-Kriticos
Director of Strategic Initiatives
and Sustainability
IFMA

Marina Badoian-Kriticos serves as the director of sustainability for IFMA. She oversees the implementation of a variety of strategic and tactical sustainability initiatives throughout the association and defines, develops and drives sustainability concepts internally and externally. Marina also works closely with IFMA's sustainability committee to monitor and integrate new legislation, technology and trends relating to sustainability.

Case Study Presenters and Technical Support



Nate Mitten, Ph.D.
Manager of Energy Services
Kimco Realty Corporation

Nate Mitten serves as Manager of Energy Services at Kimco Realty Corporation, owner of the largest fleet of neighborhood and community shopping centers in the U.S.. In his role, Nate plans and implements a series of energy related initiatives aimed at improving the environmental and economic performance of Kimco's shopping centers. Prior to his current role, Nate consulted with property owners and managers on green building design, HVAC controls optimization, retro-commissioning, building operations and maintenance, lighting retrofits, and solar energy systems. Nate holds a Ph.D. and M.S. from the Mechanical and Aerospace Engineering Department at the University of Florida and a B.S. in Engineering from Messiah College in Grantham, PA.



Alexandra Kennedy
Campus Outreach
Sustainability & Energy
Management
University of Central Florida

Alexandra is an employee of the Department of Sustainability & Energy Management at the University of Central Florida and served as UCF's Project Lead for the 2011 National Building Competition. In 2012, she graduated from the university with a Bachelor's degree in International Relations. The Department of Sustainability and Energy Management is tasked with advancing the University of Central Florida's strategic goal of sustainability. Partnering with faculty, students, staff and our community, we continually strive to leverage institutional academics, faculty expertise, student projects and research to enhance education, drive innovation and support our commitment to environmental stewardship.



Michael Myer
Pacific Northwest National
Laboratory

Michael Myer has been with Pacific Northwest National Laboratory (PNNL) for over 5 years after working in the lighting design field. AT PNNL, Michael supports the Department of Energy's Commercial Building Energy Alliances (CBEA), Solid-State Lighting Commercialization program, and Appliance Standards. Michael was the technical lead for the developing the CBEA Parking Lot and Parking Structure high efficiency lighting specifications. He has also been involved in numerous demonstrations of parking lots and parking structures using new technologies and controls.

Join the LEEP Campaign to save energy and money

- Energy savings of over 30% compared to ASHRAE 90.1-2010, and 50% or more compared to earlier codes
- Add controls to save energy during times of low occupancy or from daylighting to save even more
- High efficiency lighting lasts longer than traditional lighting which leads to deferred maintenance and saves money
- User satisfaction
- Join LEEP at www.leepcampaign.org



Photo Courtesy of Department of Energy

Lighting Energy Efficiency in Parking Campaign

HOME ABOUT JOIN LUMINARIES TECH. AND FINANCIAL ASSISTANCE CASE STUDIES AWARDS AND RESULTS

It's easy to take the LEEP

Join the team
Get advice
Save electricity and money
Get recognized for success

[Join](#)

BOMA International
GREEN PARKING COUNCIL
IFMA International Facility Management Association
Engineering Facility Professionals Worldwide
Learn. Connect. Advance.SM
Commercial Building Energy Alliances

What is LEEP?

State-of-the-art lighting technologies can last 2 to 5 times longer than traditional outdoor lights. These systems pay for themselves quickly by

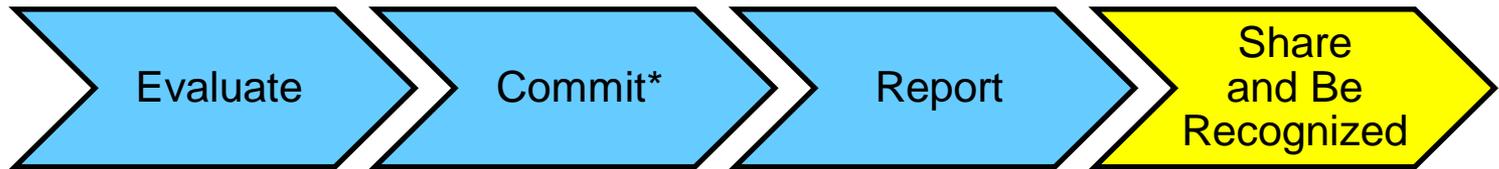
LEEP Campaign Goals

- Increase the number of parking lots and parking structures that deliver effective lighting while saving energy and money
- Document best practices and resulting energy savings
- Recognize successes
- Help companies make the business case



- LEEP's goal is to have 100 million square feet of parking structure or lot space to use roughly 1/3 less energy compared to Std. 90.1-2010
- Based on estimates, these energy savings equal over 51 million kWh, or
 - The annual electricity use of almost 4,500 homes or
 - The annual greenhouse gas emissions from almost 7,000 passenger vehicles

What do I need to do to join LEEP?



Description	Evaluate the business case for high efficiency lighting	Commit to building or retrofitting at least one parking lot or parking structure with high efficiency lighting technology	Report expected and actual energy savings and share feedback	LEEP will award recognition to participants in a variety of categories
Resources	<ul style="list-style-type: none"> ▪ Case studies ▪ Calculators ▪ LEEP Tech. Advisors 	<ul style="list-style-type: none"> ▪ CBEA specifications ▪ Financing / incentives list 	<ul style="list-style-type: none"> ▪ Calculators ▪ LEEP Tech. Advisors 	<ul style="list-style-type: none"> ▪ LEEP Tech. Advisors
Important Dates	LEEP launches on Sep. 27, 2012	Limited technical assistance is available until Nov. 2013	The deadline to report savings claims is Jan. 2014	<p>Savings announcements will be made throughout 2013</p> <p>Awards announced Feb. 2014</p>

* Existing sites that have been built or retrofitted with high efficiency technology are also eligible to participate in the campaign, if they were built or retrofitted after January 2010

Visit www.leepcampaign.org to access free resources

- DOE CBEA Lighting Specifications
 - Specifications are available for both parking lot and parking structure lighting
 - Developed by industry leader members of the CBEA such as Safeway, the Cleveland Clinic, USAA Real Estate, Walmart, and BJ's Wholesale
 - Use the specifications to send requests for proposals to your preferred supplier

- Incentives and Financing – A database of lighting incentives and financing opportunities by major U.S. market

- Lighting Project Evaluator Calculator - Lets users calculate energy use from lighting at existing buildings and estimate savings from new lighting options

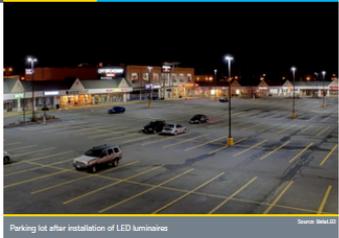
- Over 20 Case Studies – Demonstrate financial and energy-savings results of high-efficiency lighting in parking lot and parking structures projects

- Technical Assistance - Join the campaign and receive free technical assistance (limited and available on a first-come, first-serve basis)

Department of Energy Parking Lot Lighting Case Study

BUILDING TECHNOLOGIES PROGRAM

Parking Lot Lighting with LEDs:
T.J.Maxx Plaza



Parking lot after installation of LED luminaires

Project Description
In this project, a total of 26 (twenty-two) 400W (lamp rated power) high-pressure sodium and six 400W metal halide luminaires were replaced with 25 LED luminaires (120 LEDs per luminaire) manufactured by BestLED[®], with each luminaire controlled by an integral occupancy sensor that varies output between high and low light output settings.

Economic Performance
The economic analysis showed that replacing the existing system with the LED product would result in cost savings. The LED product achieved an estimated payback in this installation of about three years, due to the combination of high electricity (\$0.14/kWh) and maintenance costs incurred by the conventional products at this location. Substituting the lower national average electric rate of \$0.104/kWh and more typical maintenance rates results in a payback closer to five years. While a 58-percent reduction in energy use was achieved through use of the LED system, it was accompanied by a 49-percent reduction in average illuminance in the high-output setting. In addition, because the lighting is on for an average of 12 hours per night but the lot is estimated

Payback Using Actual Electric and Actual Maintenance Costs

Type	Equipment Cost	Maintenance Cost ¹	Annual Energy Cost	Total Savings	Payback (years)
Existing		\$1,000.08	\$8,096.69		
LED	\$47,125.00	\$1,250.00	\$2,590.77	\$15,256.00	3.09

¹ The full CBEA specification and additional information about the specification can be found at http://www.leepcampaign.org/specifications/leed-specifications/leed_specifications/leed_specifications.html.

² Maintenance costs were estimated with a flat cost per luminaire per year that attempts to include both scheduled (i.e., lamping and software costs).

LEEP will recognize participants based on several achievement categories

- Awards will be conferred in February 2014
 - Highest absolute savings at a single site: retrofit
 - Highest absolute savings at a single site: new construction
 - Highest percentage savings at a single site: retrofit
 - Highest percentage savings at a single site: new construction
 - Best use of controls
 - Largest number of sites upgrades
 - Largest portfolio-wide energy savings
 - Largest percentage of sites upgraded

 - Energy saving results will be announced periodically throughout 2013 as campaign participants take the LEEP and estimate energy savings
-

Join the campaign as a supporting organization

- LEEP supporters are organizations committed to promoting high efficiency parking lighting solutions
- These organizations spread the LEEP campaign's message to their members to recruit participants in the campaign



RESPONSIBILITY

Business • Community • Environment



Gateway Outdoor Lighting Controls Program

Nate Mitten, Ph.D. | Manager of Energy Services | September 27, 2012

RE THINK
NEW
STORE

 **KIMCO**[™]
REALTY

Gateway Outdoor Lighting Controls Program



AGENDA

- ≡ Who is Kimco?
- ≡ Program Purpose
- ≡ Program Context
- ≡ Program Design
- ≡ Program Results
- ≡ Next Steps

Who is Kimco?

- ≡ We are headquartered in New Hyde Park, N.Y. with regional offices across the country.
- ≡ We own and operate the largest portfolio of community and neighborhood shopping centers in North America representing over 900 sites in 44 states, Puerto Rico, Mexico, and Canada. Our tenants range from the largest national retailers to “mom and pop” shops.
- ≡ We are a publicly traded REIT listed on the NYSE since 1991 and have been in the business of developing, acquiring, and managing shopping centers for more than 50 years.
- ≡ We seek to meet the needs of our diverse stakeholders through rethinking our approach to business, renewing our commitment to the communities we serve, and restoring the environmental on which we all depend.

Program Purpose

Why focus on outdoor lighting controls?

- ≡ Reduces our largest utility spend - electricity for outdoor lighting (approx. \$25k/site)
- ≡ Saves approx. 25% of parking lot lighting consumption with 2-4 year payback (before incentives)
- ≡ Enables property manager to more effectively manage site lighting through more informed decisions
- ≡ Improves tenant experience by ensuring lights are *on* when they need to be *on* and *off* when they need to be *off*
- ≡ Establishes a robust technology infrastructure and deployment model for long-term expansion of our Gateway Building Controls Program

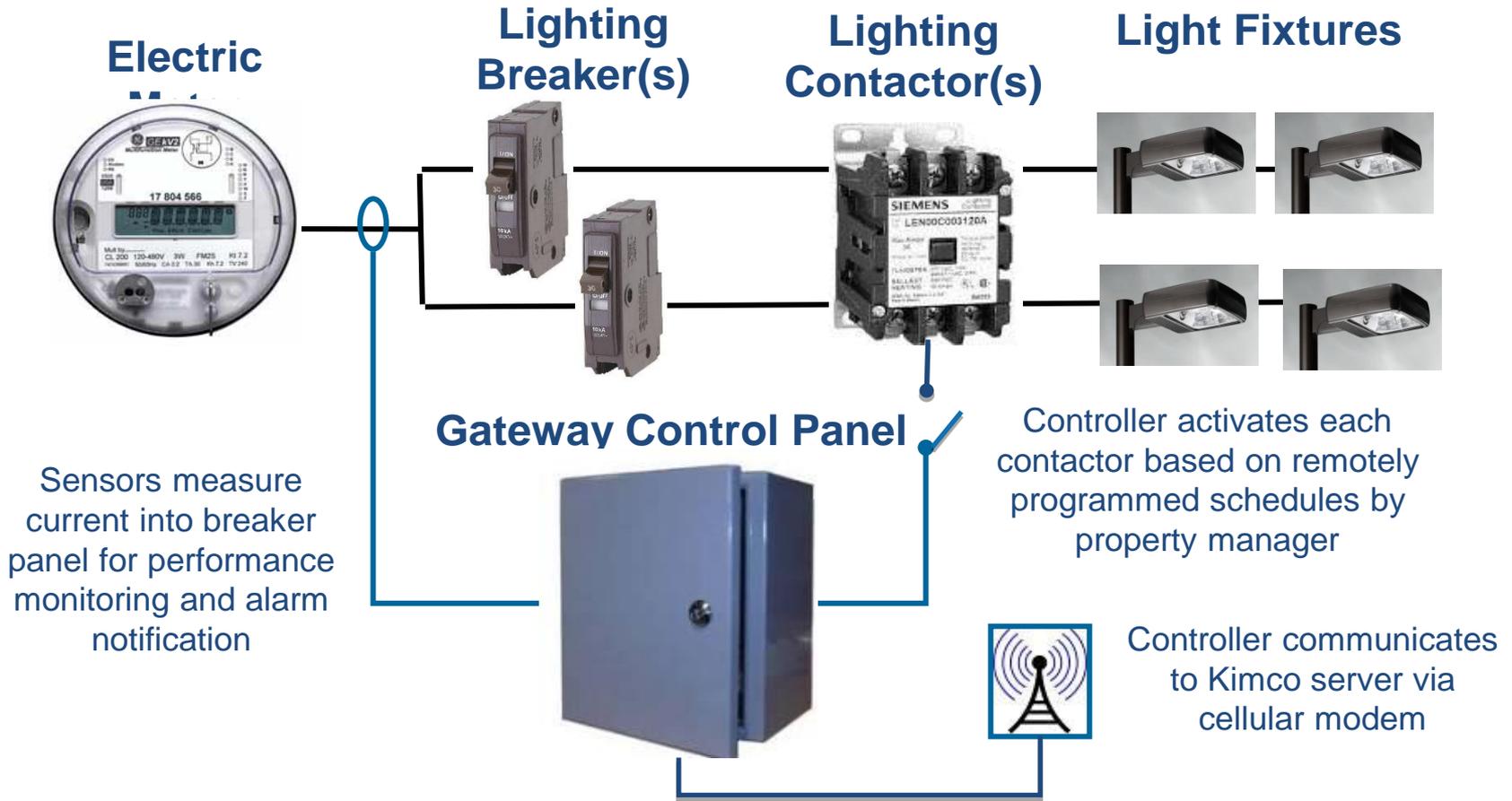
Program Context

The evolution of outdoor lighting controls...

- ≡ Mechanical Timeclock
- ≡ Photocell
- ≡ Electronic Timeclock
- ≡ Circuit-level vs. fixture-level controllers
- ≡ Proprietary vs. “open” web-based controllers



Program Design: How it Works



Program Design: System Features

Automatic Alarms

- ≡ Email or text notification
- ≡ Power outage alarm
- ≡ Lighting maintenance alarm
- ≡ Energy performance alarm

Dashboard

- ≡ Accessible from anywhere
- ≡ iPad or standard web browser
- ≡ Standard look/feel across all sites
- ≡ Attractive and intuitive

Advanced Scheduling

- ≡ Accurate dusk to dawn
- ≡ Offsets for tuning dusk to dawn
- ≡ Intuitive night lighting setup
- ≡ Weekends, holidays, special events
- ≡ Energy forecasting tool

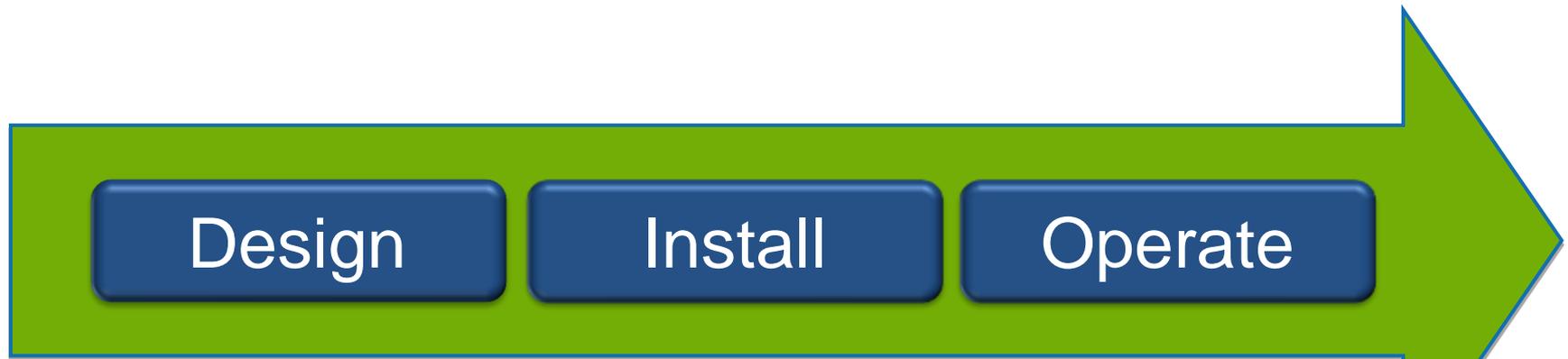
Flexible and Expandable

- ≡ Standard protocols for inoperability
- ≡ Modular design for future expansion
- ≡ Wide base of qualified installers

Program Design: Dashboard



Program Design: Project Life Cycle



- ≡ Site selection

- ≡ On-site assessment

- ≡ PM interview

- ≡ System configuration

- ≡ Regroup circuits

- ≡ Install control panels

- ≡ Test / Commission

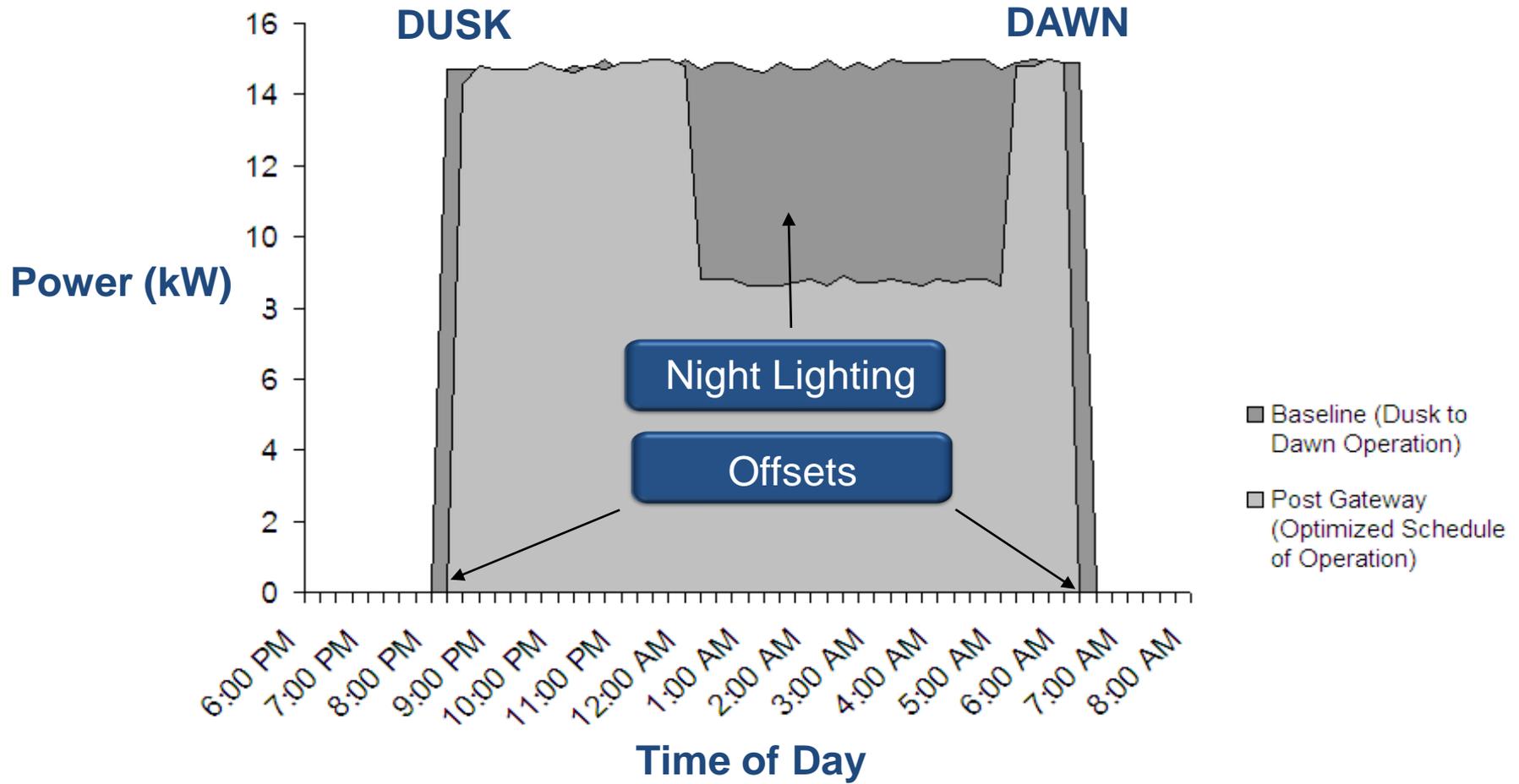
- ≡ Train users

- ≡ Optimize performance

- ≡ Ongoing O&M

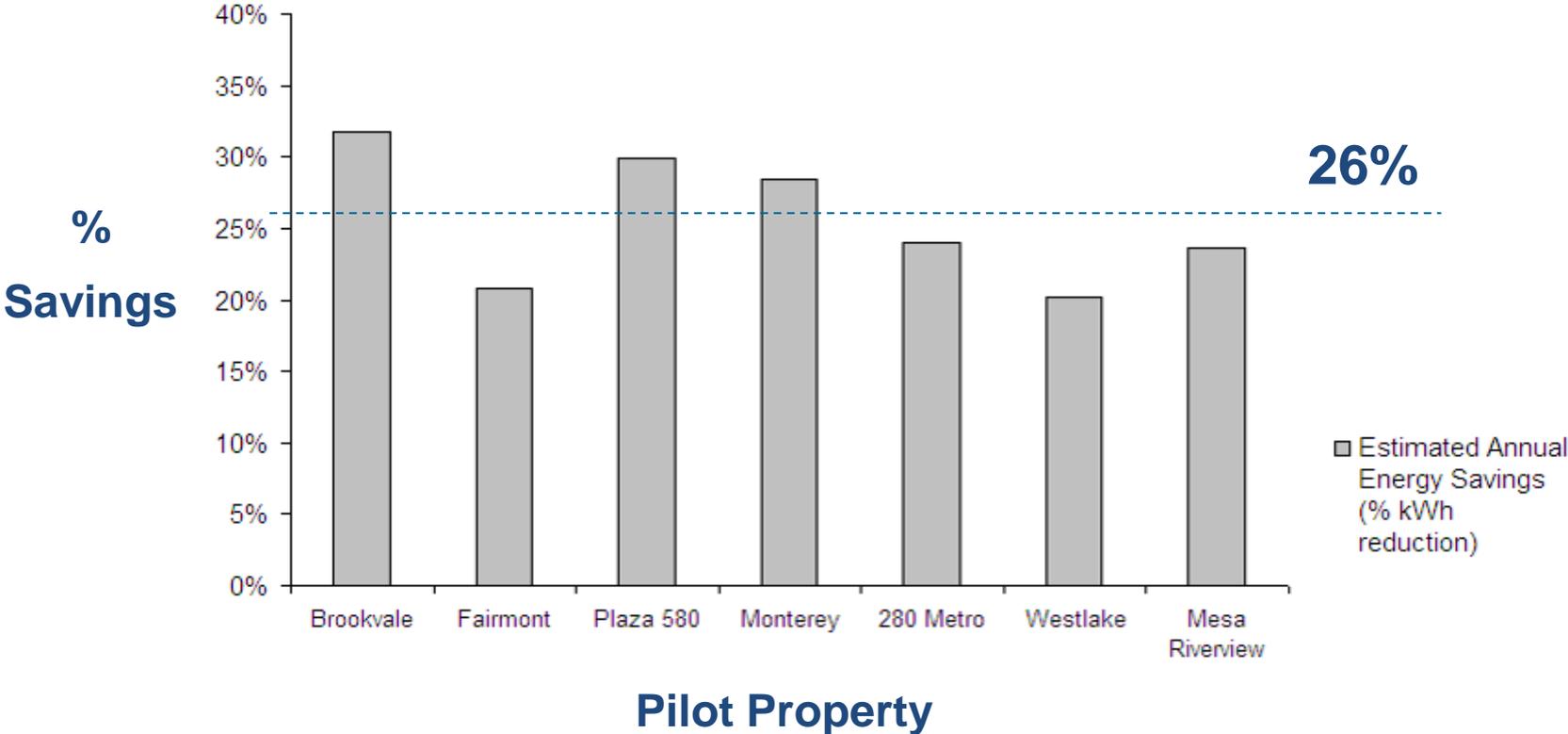
Program Results

Two aspects of energy savings: dusk/dawn offsets and night lighting



Program Results

Early pilot phase results: average of 26% savings from controls only



Notes: Results based on actual measurements from current transducers. The baseline is precise dusk-until-dawn operation with no offsets and zero night lighting.

Next Steps

- ≡ Continued training of property managers and optimization of 10 existing sites
- ≡ Complete 2012 rollout of over 40 additional sites
- ≡ Plan 2013 rollout of over 100 additional sites
- ≡ Reduce cost of each project through process improvement and value engineering
- ≡ Provide ongoing training and support to property managers
- ≡ Continually monitor and optimize actual energy savings

For More Information:

Blog: blog.kimcorealty.com | Twitter: @KimcoCR | Web: kimcorealty.com/CorporateResponsibility



Corporate Responsibility Statement

Kimco is focused on building a thriving and sustainable business – one that succeeds by delivering long-term value for investors, tenants, associates and communities. At Kimco, we take pride in how we conduct business, including the positive contribution we make to communities and our initiatives to safeguard the environment.

Creating long-term value means understanding and working to meet the needs of our many stakeholders – periodically rethinking our approach to business to respond to changing market conditions, continually renewing our commitment to the communities in which we operate, and taking steps to restore and preserve the global environment on which we all depend.

OFFICIAL 2011 COMPETITOR

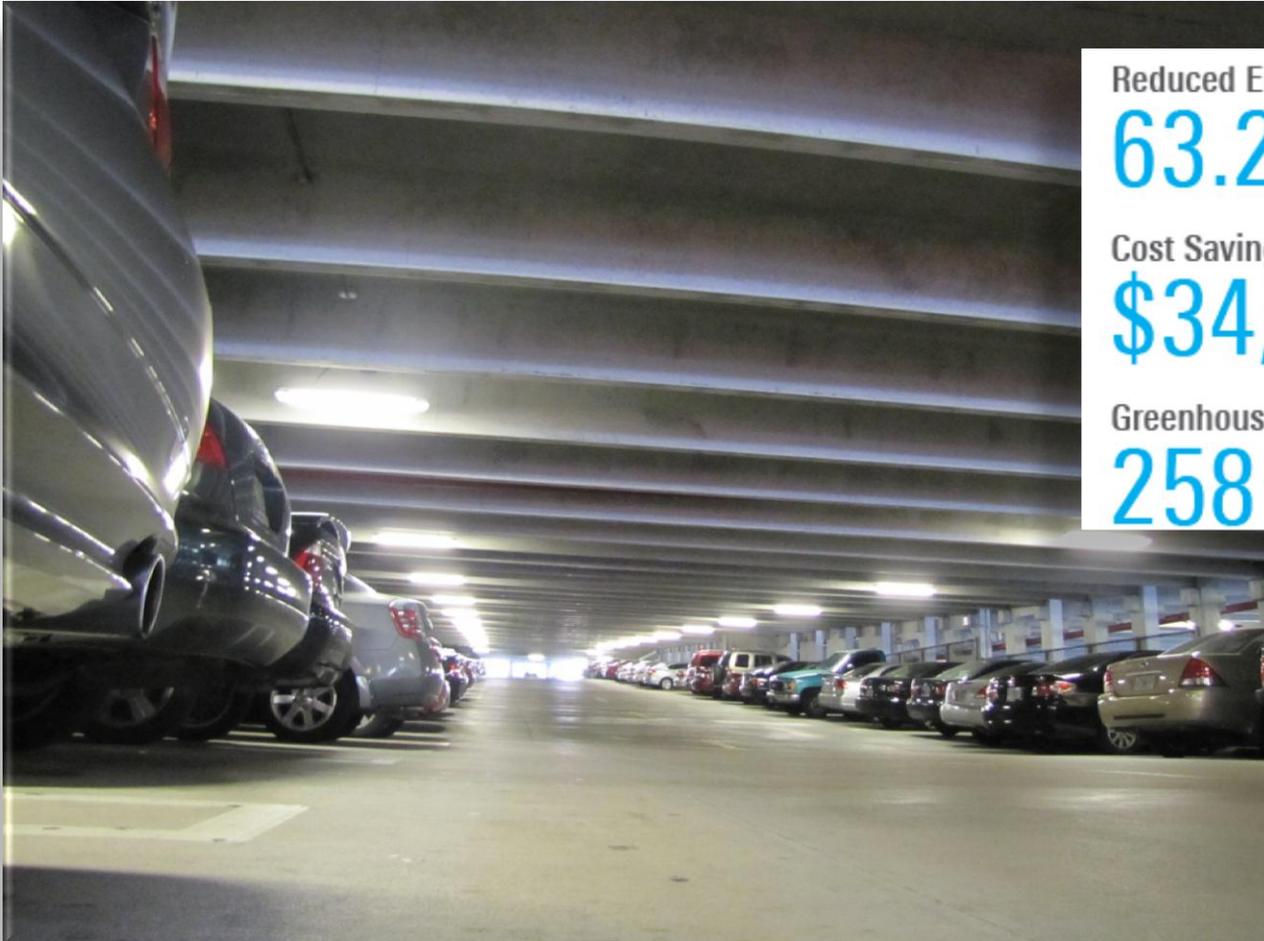
BATTLE OF THE BUILDINGS

EPA's NATIONAL BUILDING COMPETITION



Sustainability
& Energy Management

Lighting Retrofit



Reduced Energy Use by:

63.2%

Cost Savings:

\$34,907

Greenhouse Gas Emissions Prevented:

258 metric tons



Sustainability
& Energy Management

Phase I –Interior Retrofit

High performance T-5 Fluorescent light replaced 150 watt HPS fixtures

Single lamp T-5 HO 49 watt lamps & ballasts by PHILLIPS

Fiberglass housing with Stainless Steel Tamper Resistant latches

One piece Gear Tray with Plunger sockets replaceable without tools

Oversize housing with 95% Mirrored reflector

Water Clear acrylic Lens with full Silicone gasket



Phase II – Exterior Retrofit

Perimeter retrofit

150 watt HPS fixtures
replaced with Cooper
44 watt LED fixtures

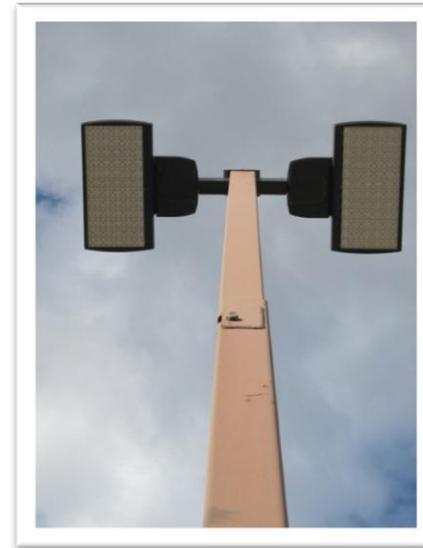


Phase II – Exterior Retrofit



Top Deck retrofit

16 Cooper LED 236 watt
fixtures replaced
400 watt HPS fixtures



Sustainability
& Energy Management

Project Summary

Total project: **424 fixtures**

Project duration: **4 weeks**

Payback period: **2 years**

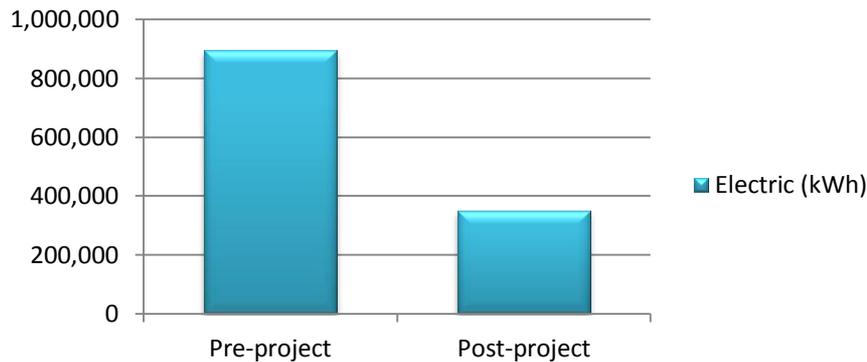
Yielded:

- Energy Savings
- Better Visibility
- Improved Safety



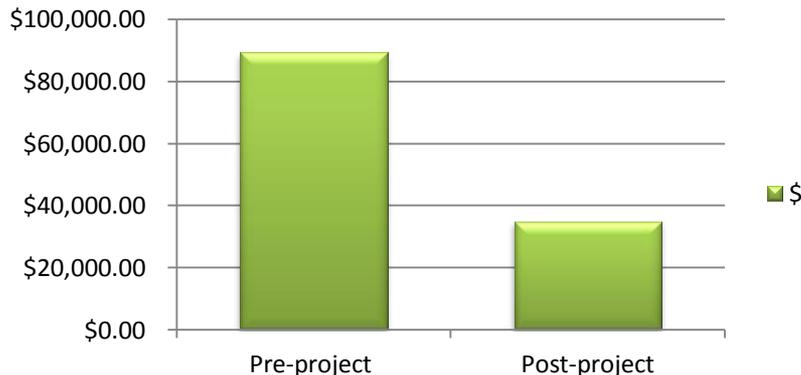
Results

Energy Reduction



Description	Electric (kWh)	Savings (\$)
Pre-project	895,341	\$89,238.00
Post-project	349,272	\$34,907.00
Total savings	546,069	\$54,322.00
% Savings	63.20%	60.90%

Cost Savings



Utilizing historical sub-meter reading data, Pre and post-project energy usage were collected and compared to calculate actual energy and cost savings



Outreach



Sustainable_UCF @SustainableUCF

27 Jul

Mid-point of EPA's National Building Competition & still in the game! See the rankings & John Corbett video #ESNBC 1.usa.gov/ESNBC

Expand



Sustainable_UCF @SustainableUCF

21 Jul

Following LED installation, Garage C lighting levels will be checked and we will let you know our energy saving results! #esnbc

Expand



Sustainable_UCF @SustainableUCF

26 May 11

LED installation projected to save UCF 2/3rds in energy costs #ESNBC More press coverage @UCFnews <http://bit.ly/j4JYGi>

Expand



Sustainable_UCF @SustainableUCF

5 May 11

UCF Knights are prepared for battle. Garage C for the Biggest Loser 2011! #ESNBC <http://bit.ly/llUeCl>

Expand



Lessons Learned



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