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ICSC ASSET MANAGEMENT CONFERENCE

Best Practices for Improving Value in Shopping Centers

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Solar Deployment Considerations and Case Study

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Solar Deployment Considerations

Provider Considerations:

- Geography – New Jersey, Hawaii, California, Arizona, Massachusetts, Connecticut.
- Geography coupled with government incentives.
- Roof less than 5 years old.
- Visibility into likely HVAC changes, roofing upgrades, etc.
- No major shading / obstructions nearby.
- Close proximity to mall electricity meters.

Solar Deployment Considerations

Landlord Considerations / Obstacles / PPA:

- Typical term of 15-20 years versus 5-7 year preference of most owners.
  - Removal and possible relocation of system.
  - Financial protection from new technology, better deal offers.
  - Physical considerations; How roof to be used.
- Timing – Providers often rushed to get approvals to reserve higher state rebates

Solar Deployment Economic Considerations:

- State / Local financial incentives, aka SRECs and their associated value and projected value.
- Interconnection requirements & utility approvals.
- Annual energy consumption (load).
- Annual average & maximum energy demand.
- Load profile (hourly energy use patterns).
- Available utility rate tariffs.
- Current low cost of grid electricity makes solar difficult / non-competitive.

Solar Deployment Physical Considerations:

- Roof / land orientation.
- Roof height.
- Roof warranty / remaining life.
- Roof capacity to accept additional weight load.
- Ability to obtain easements to prevent shading of system.
- Local wind exposure.
- Solar irradiance (insolation).
- Distance to point of interconnection.
- Interconnection voltage.
- Transmission line congestion.
- Local permitting authority.
- Environmental permitting considerations.
- Net metering & interconnection laws.
- Geotechnical / Structural characteristics
- Timeline

Solar Deployment – Ownership Structures &Subsidies:

- REITs cannot use tax incentives; must have a TRS (taxable REIT subsidiary)
- PPA (power purchase agreement) structure may be an option.

SUBSIDIES

- Federal ITC
- Federal Accelerated Depreciation
- State incentives / SRECs
- PACE Financing

New Jersey Case Study:

- 30% Federal cash grant; PSE&G special loan program. No program without these subsidies.
- Bridgewater Commons (rooftop and parking deck), Paramus Park, Willowbrook Shopping Center, Woodbridge Center.
- Solar panels operational beginning late summer 2012.
- Projected to displace 6,125,000 kWh of common area electrical load; roughly 12% of total load of the 4 sites in aggregate.
- Assuming a hypothetical PSE&G rate of $0.15 per kWh, this offsets $918,760 of electricity cost.

LED Parking Lot Retrofits Case Study

Mark Peternell
VP Sustainability
Regency Centers

Regency® Centers.

Preeminent national owner, operator and developer of neighborhood and community shopping centers

- Headquarters in Jacksonville, FL
- Publicly trader REIT – $4.39B Market Cap
- 343 centers totaling 46M square feet
- Market dominant anchors - 85% grocery

Case Study: LED Parking Lot Retrofits

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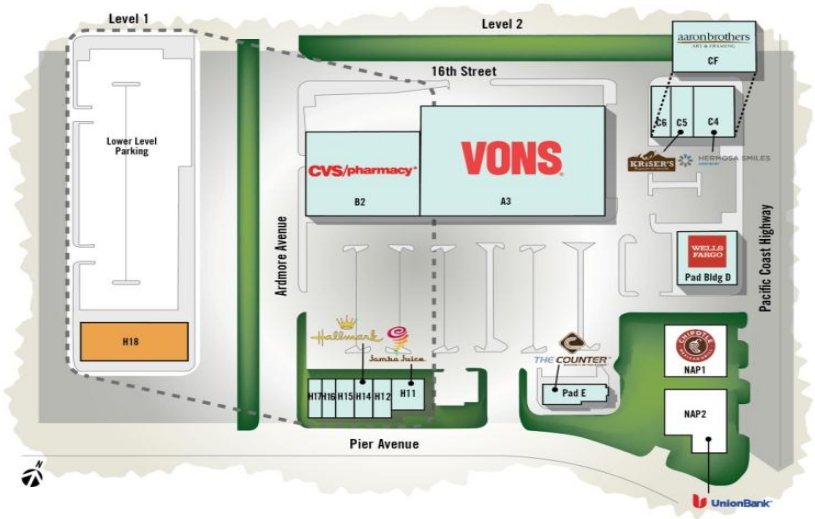
- Proven technology with significant benefits: improve lighting quality, significantly reduce energy & maintenance expenses, dimmability, long life, higher utility rebates
- Installed at 8 properties; 12 by end of 2013

Plaza Hermosa – Hermosa Beach, CA

- 94,716 SF neighborhood center located in densely populated area
- Aging center, but 100% occupancy with very high volume
- Retrofit 400w HPS to 172w LED
- Factors in decision to retrofit:
  - A+ center in strategic market
  - Poor color quality and significant lumen depreciation
  - High electricity rates
  - Expensive to maintain
  - SCE utility rebate
  - Increase nighttime curb appeal



Plaza Hermosa – Technological Differences

	HPS - Existing	LED - New
		
Watts	464	172
Lumens	45000	12784
Avg. FC	4.2	2.5
Max-to-Min Ratio	51	7
Correlated Color Temperature	2100K	5700K
Color Rendering Index	20	70+
Lumen Maintenance Factor	0.7	0.92
Lamp Life Rating / L70	30,000	100,000+
Warm-Up Time	8 mins	Instant
Dimmable	No	0 - 10v
Warranty	1 - 2 years	10 years

Plaza Hermosa – Hermosa Beach, CA

	Annual Electricity	Annual Cost	Annual Savings	% Savings
Existing Conditions	115,842 kwh	$16,218	-	
LED	45,955 kwh	$6,434	$9,784	60%
LED w. Dimming	23,743 kwh	$3,324	$12,894	79%

Plaza Hermosa – Financial Considerations

- Costs - $89,450
- Savings - $15,074
  - Energy - $12,894
  - Maintenance - $2,180
- Rebate - $7,368 (miscellaneous income)
- Simple Payback – 5.4 Years
  - Typical range 3.5 – 6 years
- Ignores intangible value of aesthetic improvements

Dimmability

100% Output

Take-Aways

- LED lighting is a viable technology for retail parking lots
  - Need to consider life cycle costs
  - Don't underestimate the visual benefits
  - Pay more attention to uniformity than foot-candles
- Use high quality LED luminaires
  - Must publish reliability data and be DLC qualified (http://www.designlights.org/)
  - Use reputable manufactures with 5 – 10 yr. warranty
  - Be cautious of retrofits and fixtures designed for conventional sources that have been modified to for LED
- Manufacturer and Service Provider Recommendations

Parking Lot Lighting Controls Case Study

Will Teichman

Director of Sustainability

Kimco Realty Corporation

Case Study: Kimco Lighting Controls Program



- Portfolio approach to improved management of exterior parking lot lighting at open-air shopping centers
- Installed at 250 properties, with 85 additional in progress
- Significant reductions in cost, improved environmental performance, and enhanced management capabilities

The Case for Improved Lighting Controls

Traditional Controllers

- Low cost and easy to install
- Manually adjusted, in-person
- Subject to failure, with no warning or notification provided
- Relative imprecision can lead to un-necessary burn times

Advanced Controllers

- Higher price point + ongoing fees
- Internet-connected, with remote monitoring and control capability
- Alarming functionality to notify of power outage, use anomalies, etc.
- Improved precision = reduced burn times and cost savings

Kimco's "Gateway" System Configuration

Electric Meter

Sensors measure current into breaker panel for performance monitoring and alarm notification

Lighting Breaker(s)

Lighting Contactor(s)

Light Fixtures

Controller activates each contactor based on remotely programmed schedules by property manager

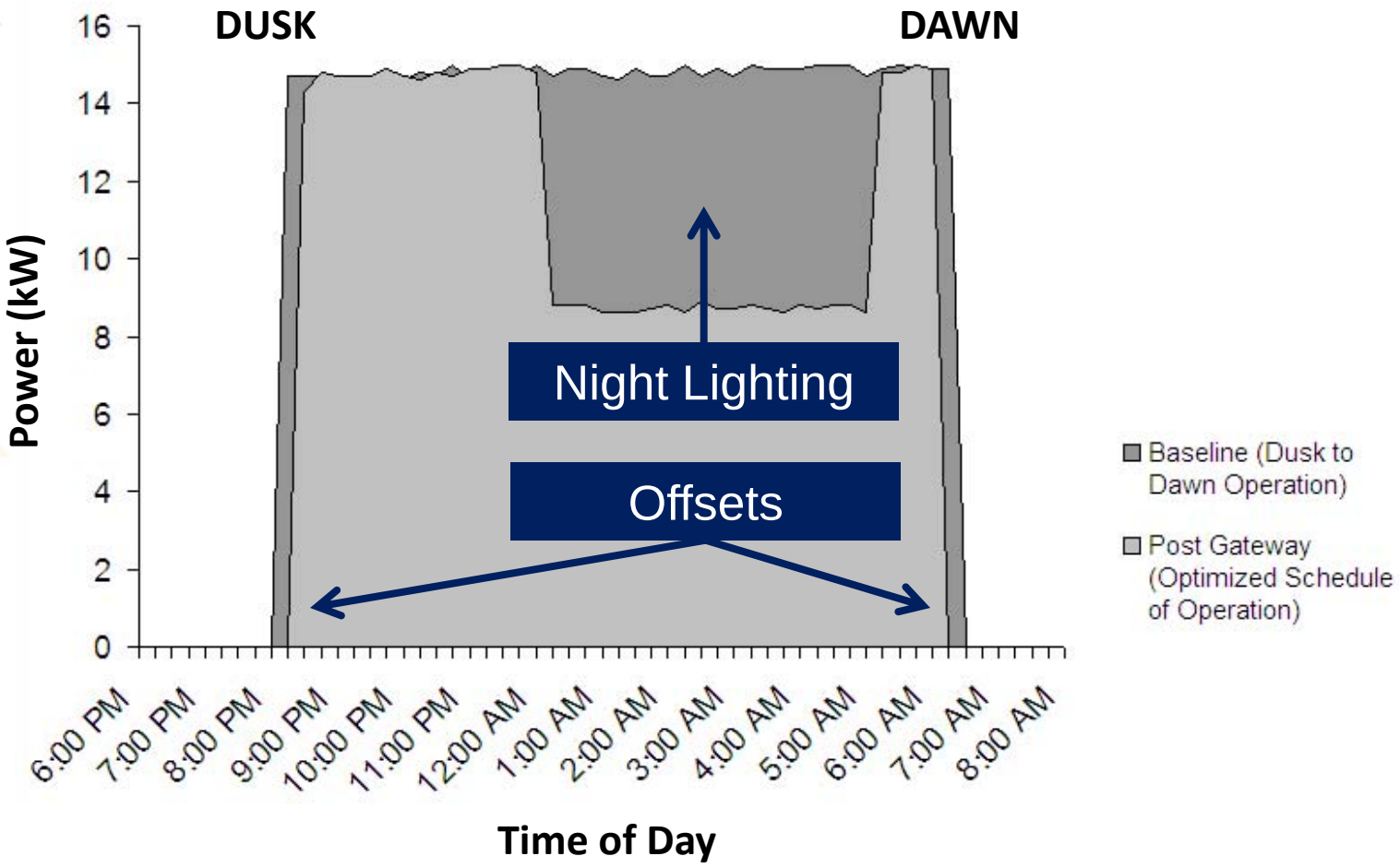
Control Panel

iPad-based dashboard, linked to the site via cellular connection

Financial Considerations – Typical Site

- **One-time Installation Cost**: $2,000-5,000 per house lighting panel under control
- **Monthly Cellular/Monitoring Fees**: $50-$200 per property
- **Typical Annual Energy Savings**: 10-20% of lighting systems brought under control
- **Payback**: 1-4 years, largely driven by:
  - Total number of panels / circuits
  - Total electric spend (consumption * rate)
  - Accuracy of current control regime
  - Capability for “night lighting”, adaptive daily schedules, etc.

Energy Savings Through Improved Control



Summary Points

- Advanced lighting controls can deliver the following benefits over traditional controls:
  - Improved reliability, and confidence that lights are on when they should be (and…off when they shouldn't)
  - Potential for energy and cost savings
  - Enhanced Property Manager effectiveness (remote schedule changes, alarms, notifications, etc.)
- Maximizing energy savings requires dusk & dawn offsets, night lighting, and adaptive daily schedules
- Payback analysis omits capex/opex recovery considerations, and availability of utility incentives