Commercial real estate solutions
Commercial real estate solutions

02 Why choose Lutron
04 Codes and standards
05 Energy-saving strategies

Case Studies
06 Empire State Building
07 Panduit
08 Ben Franklin Technologies
09 Glumac
In today’s competitive market, it is more important than ever for property owners to attract and retain long-term tenants. Lighting and shade control can play a significant role in making your space more efficient, cost-effective, and sustainable.

Let us show you how to reduce the lighting electricity costs in your building by 60% or more.*

Lutron lighting control solutions are affordable, flexible, reliable, and backed by more than 50 years of product innovation. They can provide significant energy-savings and improve building performance, while helping to create the right atmosphere for every tenant space.

* Compared with manual (non-automated) controls, up to 60% lighting energy savings is possible on projects that utilize all of the Lutron lighting control strategies (occupancy sensing, high-end trim, daylight harvesting, and personal control). Actual energy savings may vary, depending on prior occupant usage, among other factors.
Reducing costs and enhancing the energy-saving aspects of your property can result in greater revenue, increased tenant retention, and higher profit.

Owners
Enhance both the current and future value of your building by offering value-added systems that help attract and retain long-term tenants.

Developers
Easy-to-install, cost-effective, sustainable lighting control solutions increase asset value for owners and tenants.

Property Managers
Reduce operating costs and improve your ability to maintain and update building systems. Provide tenants with financially attractive solutions that will decrease energy costs and can be easily reconfigured when tenant requirements change.
Lighting control systems work to enhance your triple bottom line – people, planet and profit¹

**People**
- Improve employee comfort and health
- Provide a safe and secure work environment
- Empower employees to control their visual environment
- Reduce employee absenteeism

**Planet**
- Reduce your carbon footprint²
- Lower greenhouse gas emissions
- Protect the night skies by reducing light pollution
- Free up local energy to prevent black outs in the region
- Maximize the effective use of daylight
- Reduce landfill waste

**Profits**
- Cut wasted lighting energy costs by 60% or more
- Reduce labor, maintenance, and operation costs
- Lower electrical power rates and eliminate penalty charges
- Enhance employee productivity³
Lutron lighting control solutions can help you meet current building codes and standards. Because many Lutron systems are scalable and expandable, they can also ensure that your building will meet and exceed future code requirements.

- ASHRAE Energy Code 90.1-2010
- ASHRAE Green Standard 189.1-2011
- IECC 2012 (International Energy Conservation Code)
- IgCC Public Version 2 (International Green Construction Code)
- CEC Title 24 2008 (California Energy Commission)

**LEED NC 2009**

The LEED Green Building Rating Systems address seven topics, and Lutron solutions can contribute to 40 or more of the 110 possible points in LEED® NC, CS, or S in six of the seven categories:

- Sustainable Sites
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation in Design
- Regional Priority

**IT Integration**

The ability to accommodate flexible IT Integration is another important aspect of new construction and major renovation in buildings. Lutron solutions can address a variety of network/integration technology configurations to suit the IT landscape in the building.

**Option 1**

**Use a dedicated lighting control network**

Lutron Quantum® lighting management hubs are connected to the Quantum server via a dedicated lighting control network. This provides the highest security.

**Option 2**

**Integrate with the corporate network**

The Quantum lighting management hubs are connected to the Quantum server via the Corporate Building Network.
Implement a combination of basic and advanced lighting control strategies to meet established energy saving goals, and provide individual tenants with the level of control appropriate for their needs.

**BASIC**

These strategies offer the easiest, most economical options for reducing energy use and adding value to your space.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Potential savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupancy/vacancy sensing</td>
<td>20–60% Lighting⁴</td>
</tr>
<tr>
<td>Personal dimming control</td>
<td>10–20% Lighting⁵</td>
</tr>
<tr>
<td>High-end trim</td>
<td>10–20% Lighting⁶</td>
</tr>
<tr>
<td>Daylight harvesting</td>
<td>25–60% Lighting⁷</td>
</tr>
<tr>
<td>Controllable window shading</td>
<td>10–20% Cooling⁸</td>
</tr>
</tbody>
</table>

**ADVANCED**

Advanced strategies enable integration between lighting control and other building systems to enhance the building environment and maximize energy savings.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Potential savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduling</td>
<td>10–20% Lighting⁹</td>
</tr>
<tr>
<td>Demand response</td>
<td>30–50% Peak Lighting¹⁰</td>
</tr>
<tr>
<td>HVAC integration</td>
<td>5–15% HVAC¹¹</td>
</tr>
<tr>
<td>Plug load control</td>
<td>15–40% Non-Electronic¹²</td>
</tr>
</tbody>
</table>

Implement a combination of basic and advanced lighting control strategies to meet established energy saving goals, and provide individual tenants with the level of control appropriate for their needs.
Empire State Building

Lutron helps the Empire State Building set a new standard for sustainable, commercial renovation

Lutron daylight sensors in perimeter private offices, conference rooms, corridors, and open-plan office spaces communicate wirelessly to EcoSystem® digital dimming ballasts to reduce or increase electric light levels based on available daylight, providing savings of up to 60%.

Utilizing electric light to complement daylight, rather than as the prime light source in the space, ensures that these areas are not over lit or using excess energy. Lighting is always appropriate, facilitating comfortable working conditions.

Combined, these relatively simple, easily replicable strategies help reduce lighting electricity use by up to 65%.

Strategies used

- Occupancy/vacancy sensing
- Personal dimming control
- High-end trim
- Daylight harvesting
Panduit

*Lutron helps Panduit achieve optimal efficiency ... now and for the next 30 years*

Panduit’s World Headquarters is built to be a model of sustainability, and a template for environmental and societal leadership, not just for today, but for future generations.

Lutron solutions work within Panduit’s Unified Physical Infrastructure (UPI) approach to save lighting energy, reduce operating costs, increase building flexibility, and contribute to LEED Gold certification.

Light control and shade strategies deliver lighting energy savings of 25%. An additional 5% savings in HVAC energy can be attributed directly to the daylighting control strategies.

In addition, maximum light levels were reduced by 15% to automatically enhance savings during building occupancy, without affecting overall light quality.

**Strategies used**

- Occupancy/vacancy sensing
- Personal dimming control
- Daylight harvesting
- Automated shade control
- Scheduling
Case Studies

Ben Franklin Technologies
Partners of Northeastern PA

Lutron light and shade controls save energy, enhance the workplace, and support sustainable building design.

Lutron EcoSystem® digitally addressable dimming ballasts communicate with daylight sensors to automatically adjust electric lights in response to available daylight.

To further minimize glare and thermal heat gain, Lutron Sivoia® QS automated shades with Hyperion™ solar-adaptive software are installed on every window. This shading strategy can reduce HVAC demand by 10 - 30%.

Occupancy/vacancy sensors and personal controls are installed throughout the space to ensure that lights are not left on when an area is vacant, but tenants still have control over the lights in their space.

Finally, a Lutron Quantum® Total Light Management™ system provides centralized control of all lights and shades, and utilizes GreenGlance® software to evaluate, monitor, and communicate energy use.

Strategies used

- Occupancy/vacancy sensing
- Personal dimming control
- Daylight harvesting
- Automated shade control
Glumac

**Lutron helps Glumac engineer for sustainability**

After installing Lutron lighting controls, Glumac reported initial average lighting energy use of 0.32 Watts per square foot — well below the designed connected load of 0.68 Watts per square foot.

During the first 2 months of occupancy, this has been reduced to 0.24 Watts per square foot, attributable largely to the ease with which changes and modifications can be made to the control system. The system aims to reduce lighting power density by 47% compared to state of Oregon allowances.

Additional savings are expected as a result of the automated shading systems, which reduce glare and heat gain, and lower the demand on HVAC systems.

Due to the wireless nature of the Lutron system, and the fact that every fixture in the space is dimmable, Glumac is able to continually adjust lighting energy consumption to achieve their stated design goal of 0.25 Watts per square foot.

**Strategies used**

- Occupancy/vacancy sensing
- Personal dimming control
- Daylight harvesting
- Automated shade control
Learn about projects that have utilized Lutron solutions:
www.HonestBuildings.com/Lutron

Sources
1. John Elkington, founder of SustainAbility, coined the phrase “triple bottom line” (TBL) in 1994.
2. By up to 1 metric ton for every 4,000 kWh saved according to the U.S. Department of Energy.
9. Energy savings estimated based on 50% reduction of after-hours lighting energy waste (Source 7).
11. Lutron study based on reduction in heating (base 60°F) and cooling (base 55°F) degree days with a 2°F thermostat setback and 60% space un-occupancy. EnergyPlus modeling simulations were conducted and predicted similar savings.
12. Energy savings estimated based on daytime lighting energy savings from occupancy sensing and does not include loads that have automatic shut off or sleep modes (Source 7).

www.lutron.com

World Headquarters 1.610.282.3800
Technical Support Center 1.800.523.9466
Customer Service/Quotes 1.888.LUTRON1

© 10/2012 Lutron Electronics Co., Inc. | P/N 367-2372 REV A