

The EAct Aspects of Hotel LED Lighting

By Charles Goulding, Jacob Goldman and Daniel Audette

Charles Goulding, Jacob Goldman and Daniel Audette suggest that hotel owners that are modernizing their facilities should upgrade their lighting to energy-efficient, long-life LED lighting to reduce energy and maintenance costs and qualify for Code Sec. 179D tax incentives.

The U.S. hotel industry is beginning to rebound from one of the most adverse economic environments it has ever experienced. As a result, many properties are in need of modernization at a time when substantial energy cost savings, maintenance cost savings and tax incentives are available, particularly for upgrading to energy-efficient long-life Light Emitting Diode (LED) lighting and very efficient heating, ventilating and air conditioning (HVAC). The available tax incentives can be used to fund projects that reduce energy costs for hotel owners and tenants, providing savings for years to come.

Additionally, in many cities, including New York City, there is a wave of new boutique hotel construction where the Energy Policy Act of 2005 (EAct)¹ Code Sec. 179D tax incentives are available for new construction.

The EAct Tax Opportunity

Code Sec. 179D, which was enacted in 2005, provides that multinationals making qualifying

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energy-reducing investments in their new or existing manufacturing facilities can obtain immediate tax deductions of up to \$1.80 per square foot.

If the building project does not qualify for the maximum \$1.80 per square foot immediate tax deduction, there are tax deductions of up to \$0.60 per square foot for each of the three major building subsystems: lighting, HVAC and the building envelope. The building envelope is every item on the building's exterior perimeter that touches the outside world, including roof, walls, insulation, doors, windows and foundation.² In a previous article, the authors explained that hotels and motels are the most favored EAct category, due to guest rooms being exempt from the bi-level switching requirement of Code Sec. 179D.³

The Hotel Legal Lighting Environment

Hotels are particularly impacted by a wide range of federal lighting bans impacting incandescent lighting in guest rooms and other federal lighting bans impacting support spaces. Often, the large hotel support spaces, including kitchens and laundry areas, have prior generation, now federally banned T-12 and metal halide lighting that must be retrofitted. The list of federally banned lighting can be found in Table 1.

Table 1. Federal Lighting Bans

Lighting Type	Date Effective	
Most Probe Start Metal Halides	January 1, 2009	Manufacturing banned
T-12s	July 1, 2010	Manufacturing banned Distribution now limited to ten per pack
Incandescents	Beginning 2012-2014	Ban on current efficiency levels beginning 2012

The majority of state building energy codes are at the ASHRAE 2004 building code level or better.⁴ ASHRAE 2004 mandates hotel energy efficiency at levels better than the full lighting EAct Code Sec. 179D tax deduction level. Simply stated, if hotel property owners direct their lighting retrofitters to upgrade to current state/city building energy code or better, they will obtain the full EAct Code Sec. 179D tax deduction.

Guest Rooms

In guest rooms, the key to optimizing energy costs and tax savings is to use LEDs for building lighting and the “interior package,” which includes bed and desk lamps.

LEDs also have the advantage of highlighting aspects of a room. Designers can strategically use the LEDs to make the rooms more attractive, leading to higher customer satisfaction. In hotel chains where uniformity is the priority in multiple building designs, this strategy can be applied to creating consistent rooms and spaces.

Hallways and Common Areas

Usually, lights are kept on in hallways, lobbies and stairwells 24 hours a day, seven days a week. When a space is continuously lit, light bulbs reach the end of their lives quicker and must be replaced more frequently. The long-life rating of LEDs should be of particular interest to hotels since the use of LEDs not only reduces energy operating costs, but also

increases the product life cycle and greatly reduces ongoing lamp replacement maintenance costs.

Hallways are particularly optimal for LED retrofitting because LED lighting sources are easy to design and install. LED strips can be bought whole and installed throughout entire corridors with minimal work.

Parking Garages

Many hotels include their own parking garage within or adjacent to the building. Parking garages were one of the first building types to use LED lighting, and the large open spaces make them specifically advantageous under Code Sec. 179D, enabling them for large EAct tax deductions. In Notice 2008-40,⁵ the IRS announced that parking garages are a property class specifically entitled to use the EAct tax deductions. Moreover, parking garages are excluded from the bi-level switching requirement.⁶

Hotel Restaurants

LED lighting is particularly popular for restaurant lighting, and many national restaurant franchises are already upgrading all of their facilities, including hotel locations, to LEDs. The versatility of LEDs makes them desirable for both their energy savings and their interior design capabilities. Previous articles have stated how LEDs can highlight both food and architecture, making the restaurant appear more desirable.⁷

Understanding Hotel LED High Energy Efficiency HVAC Combinations

Boutique hotels are set up for larger LED tax deductions any time they combine LEDs with facilities that have centralized HVAC systems like a chiller plant.

Converting lighting to LEDs can also cut HVAC energy usage. The low heat output of LEDs may be beneficial to hotel operators. The heat output of

Table 2. Potential Benefits of a Hotel with LEDs

Property	Total Square Footage	Lighting		HVAC Max. Deduction	Building Envelope Max. Deduction	Total
		Min. Deduction	Max. Deduction			
Hotel with LEDs	500,000	\$150,000	\$300,000	\$300,000	\$300,000	\$900,000

incandescent and fluorescent bulbs is significantly higher than LEDs and can create additional heat that must be offset by air conditioning. Hotels spend much of their energy use on air conditioning in guest rooms. Installing LEDs should reduce overall energy costs.

LED Hotel Trailblazers

Hotels are already taking advantage of the massive energy savings provided by LEDs. The Hyatt Regency Grand Cypress Resort in Orlando, FL converted all of their hallways and lobbies to LEDs. They were enticed by the energy and maintenance savings as well as the higher quality lighting. Their investment resulted in an average energy savings of 80–90 percent.⁸ This is very significant considering that lighting comprises 25–30 percent of a hotel's energy bill.⁹

The Agua Caliente Hotel in Rancho Mirage, CA installed new LED lighting on its 14 floors. The owners made the decision to retrofit their lighting not only because of the long life and maintenance savings, but for the wide range of colors available. LEDs provide the hotel with the exact color temperature to help create the atmosphere they envisioned.¹⁰

Conclusion

Hotels are rapidly embracing LED lighting to save energy and maintenance costs. Informed owners will use Code Sec. 179D tax incentives and make sure they consider upgrading all of their properties by December 31, 2013.

ENDNOTES

- ¹ Energy Policy Act of 2005 (P.L. 109-58).
- ² Charles Goulding, Jacob Goldman and Nicole DiMarino, *EPA Act Tax Deductions for Lighting Gain Wider Use*, BUILDING OPERATING MGMT., Jul. 2008.
- ³ Charles Goulding, Jacob Goldman and Taylor Goulding, *Hotels and Motels Most Favored Energy Policy Act Tax Properties*, CORP. BUS. TAX'N MONTHLY, Mar. 2009, at 17.
- ⁴ American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).
- ⁵ Notice 2008-40, IRB 2008-14, 725.
- ⁶ Charles Goulding, Jacob Goldman and D. Malcolm Thomas, Multiple Lighting Technologies Drive Large EPA Act Tax Deductions for Parking Garages, International Parking Institute, Aug. 2010.
- ⁷ Charles Goulding, Jacob Goldman and Daniel Audette, *The LED Lighting Tax Aspects of Restaurants*, CORPORATE BUSINESS TAXATION MONTHLY; Charles Goulding, Raymond Kumar and Daniel Audette, *LED Building Lighting Drives Supermarket EPA Act Tax Deductions*, CORPORATE BUSINESS TAXATION MONTHLY.
- ⁸ *Resort hotel lit by Cree LED Lighting*, SEMICONDUCTOR TODAY Feb. 26, 2010; Web. Nov. 24, 2010.
- ⁹ Dave Simon, *Factors to Consider When Exploring LED Lighting*, GREEN LODGING NEWS Apr., 15, 2009; Web. Nov. 24, 2010.
- ¹⁰ "Agua Caliente hotel goes green with Albeo LED lighting," *LEDs Magazine* 07 Aug 2008; Web. 24 Nov 2010.



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