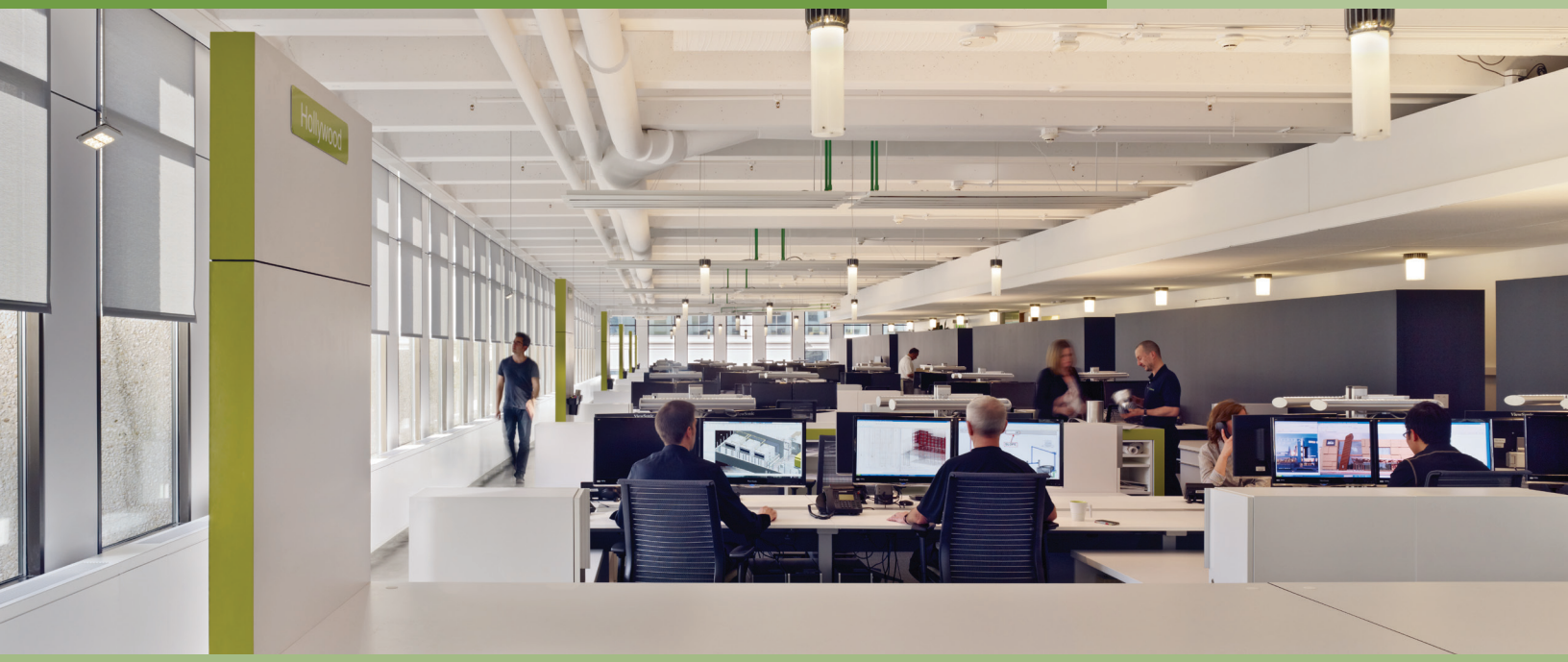
Project Overview

Glumac
Portland, Oregon

Corporate Offices

15,160 sq. ft. renovation



Lutron retrofit solutions support sustainable renovation.

Lutron Helps Glumac Engineer for Sustainability

Glumac prides itself on being "Engineers for a Sustainable Future." Their new Portland office on the 16th floor of the Standard Insurance Center is a testament to this commitment, reflecting both a sustainable building retrofit and an open-office layout for a more collaborative, teamwork-oriented experience.

Working within the framework of existing buildings is an important aspect of Glumac's work. There is more than 81-billion square feet of existing commercial building space in the U.S., 74% of which was built before the 21st century[1]. Effectively utilizing these existing buildings is critical to sustainable business practice.

Glumac relied on Lutron retrofit solutions to ensure a cost effective, efficient light control system that would contribute to LEED certification. Glumac's new offices expect to achieve LEED Platinum certification for commercial interiors as a result of their efforts.

[1]Energy Information Administration, 2003 Commercial Buildings Energy Consumption Survey. Building Characteristics Tables, released December 2006. Online. Retrieved from http://www.eia.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set1/2003pdf/a1.pdf

"My goal is to deliver comfort first, and make sure that the system saves energy too. Lutron helps me do both."

Carlos Inclan
Lighting Designer,
Glumac

LUTRON®

Challenge

The new office space is bathed in sunlight – a great asset to employee morale, but also a challenge in terms of workplace lighting, especially within the context of an open-office design. The light control system in the space had to manage both daylight and electric light to achieve 3 goals:

- Create an aesthetically pleasing design space
- Deliver adequate and proper lighting for the employees
- Set the standard for energy efficiency in building renovations

Glumac turned to Lutron for help. “Lutron has always been an innovator in light control, especially in the area of control integration,” says Kirk Davis, Managing Principal of Glumac’s Portland office, “Lutron systems are able to integrate seamlessly with the building’s management system to ensure that we can track, monitor, and adjust lighting energy usage to achieve maximum efficiencies.”

In addition to designing the office around copious daylight, the architects wanted to maintain clean lines and an uncluttered atmosphere. In most retrofit installations, this would require surface conduit throughout the space to hide wiring, but Lutron wireless control solutions accommodated the need for both flexible control and an architecturally appealing layout.

Glumac lighting designer, Carlos Inclan, says that when he specifies dimming, he likes to rely on Lutron controls. “They are of highest quality, easy to work with, and the wireless option helps me keep installation costs within budget. Anyone can just reduce light levels to save energy, but that’s not always best for the employees. My goal is to deliver comfort first, and make sure that the system saves energy, too. Lutron helps me do both,” explains Inclan.

Lutron wireless shade and light control solutions accommodate the need for flexibility and help maintain the architectural appeal of the space.

- **Sivoia® QS wireless shades**
- **Radio Powr Savr™ wireless occupancy/ vacancy sensor**
- **Radio Powr Savr™ wireless daylight sensor**

Solution

Throughout the space Lutron solar-adaptive shades automatically adjust according to the position of the sun, eliminating glare on work surfaces and reducing heat gain while preserving views. Wireless daylight sensors and digitally addressable ballasts automatically adjust electric lighting to ensure that each area has the right amount of light for maximum comfort and productivity.

Wireless vacancy sensors are installed throughout both open and private offices to ensure that lights are off when a space is unoccupied, but can be turned on when employees need more light. Davis explains this basic design premise, “In spaces with abundant daylight, people, not sensors, should turn on the lights. The best sensor ever developed is the human eye.” If the space layout changes, sensors can easily be moved without new wiring and without incurring expensive installation and programming costs.

A Quantum® Total Light Management™ system controls all the lights, shades, daylight, and vacancy sensors throughout the space, and is tied into the building management system to deliver accurate, real-time lighting energy data.

GRAFIK Eye® QS preset controls in the conference rooms control lights and shades at the touch of a button, and provide easy access to pre-programmed lighting scenes for meetings, teleconferences, and corporate presentations. Private offices all feature personal dimming control to suit the needs of each occupant. Based upon comments within a recent “Post Occupancy Evaluation” prepared in conjunction with the University of California Berkeley’s Center for the Built Environment, Glumac is also considering PC-based control in the open-office areas to further personalize light levels in the workspace.

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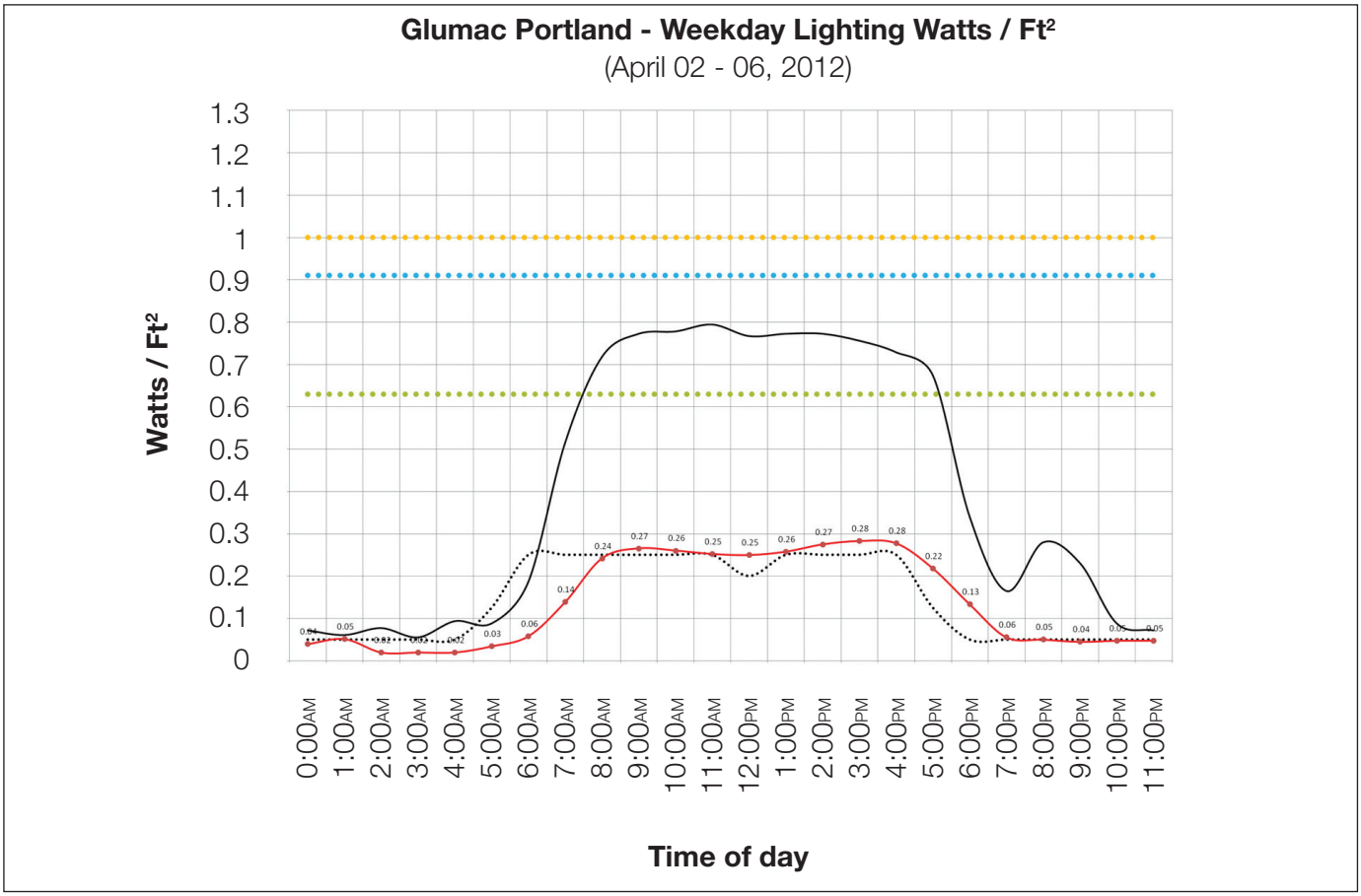
Kirk Davis
Managing Principal,
Glumac Portland

Results

Glumac reports 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 the consumption to achieve their stated design goal of 0.25 Watts per square foot (see graph below).



- ASHRAE max
- Oregon energy code max
- Design: Connected load
- Basis of design goal
- Average 10th floor – typical of building
- Average 16th floor – after renovations

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