

JDSU: Implementing People-Responsive Real Estate

CASE STUDY

In early 2013, JDSU embarked on the implementation of a lighting control and smart building optimization platform across its global real estate footprint. The goals for this initiative were to reduce energy costs by 20% and to shrink the company carbon footprint by 15%.

The initiative included the combined energy efficiency of LED fixtures with the Enlighted people-response lighting control system to achieve satisfactory levels of people comfort, continued work productivity, and a minimum of a three-year payback on operating expenses.

SOLUTION

Enlighted improves the quality of buildings by making them responsive to the people and functions they support. Installed at each light fixture, Enlighted devices are directly wired to the fluorescent dimming ballast or LED power electronics. The devices integrate leading-edge sensors with a microprocessor and power meter chip. The resulting functionality continuously adjusts lights in real-time, while collecting occupancy, daylight, and temperature data within the micro-zone beneath the fixture. This creates a lighting control application that is highly responsive to the task at hand and that maximizes lighting savings while improving occupant comfort, productivity, and safety.

Enlighted Smart Sensors wirelessly send observed energy, environmental and occupancy data to a central server, the Enlighted Energy Manager. Through a simple, web-based interface, building managers can easily program custom comfort and task-oriented parameters for individual or grouped Enlighted devices to create personalized workspaces. This unique architecture distributes lighting control to each fixture while continuing to provide useful building data to a central source. The result is a system that is as reliable as a wired lighting control system, but without disruptive and costly installation requirements.

Enlighted delivers a wealth of new people-centric and environmental information that gives building operators new insight to report, control, and improve whole-building performance, space utilization, and energy usage, including:

- + Easy remodeling and repurposing of workspaces
- + Better decisions about allocating facility resources based on how a space is actually used and occupied
- + Lower energy and operating costs through HVAC optimization
- + New applications to improve space utilization that can reduce occupancy costs

SUMMARY

Prior to a more broad-scale implementation of this platform, JDSU embarked on a five-week tuning program to determine if additional savings could be obtained beyond the typical 55% to 60% Enlighted energy savings by modifying the settings in the Enlighted system. This tuning experiment was conducted on one floor of the JDSU 400 McCarthy Ranch building. Three parameters were modified—time window for motion sensitivity, light levels, and ambient light sensitivity.

AT A GLANCE



JDS Uniphase

PROPERTY SIZE

250,000 sq. ft.

TYPE

Office campus

ESTIMATE AND DESIGN

2 days

INSTALL

2 weeks

COMMISSION

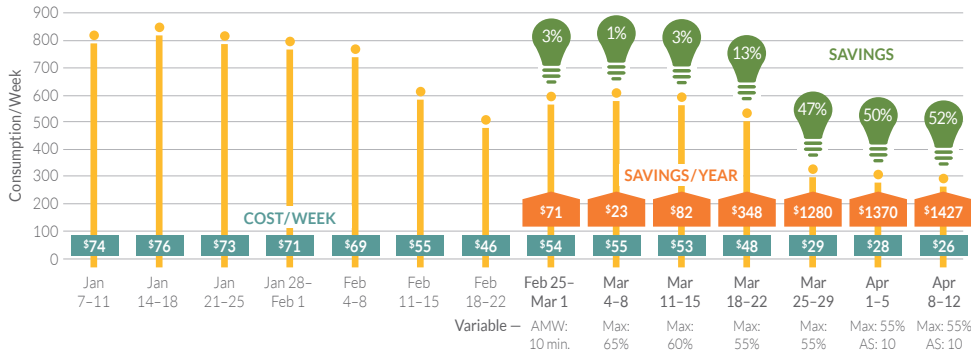
2 days

The combination of LED fixtures with Enlighted controls resulted in an 80% opex reduction.

JDSU: Implementing People-Responsive Real Estate

RESULTS

The graphic below illustrates the energy and cost savings achieved each week during this 5-week test.



Over this five-week period, it was found that the biggest contributor to energy savings was the reduction of the maximum light levels for office space from 70% to 55%. Employee feedback was that most were comfortable with their light level set at 55% for typical office setting tasks. Also, these reduced lighting levels comply with ANSI Office Lighting Standards. Changing the active motion timeframe from 15 minutes to 10 minutes contributed much less significantly to the overall energy savings.

At the conclusion of the 5-week test the project team was able to make setting recommendations for office areas including setting maximum light levels to 55% of full on, and setting active motion windows (time before the lights dim) to 25 minutes for open office areas, 30 minutes for conference rooms, and 5 minutes for common areas such as break room, cafeteria and hallways.

The flexibility of the Enlighted system also enabled the project team to make recommendations for clean room or lab areas based on the observations and test in the office areas. The Enlighted system enables each 100 square foot workspace to be tuned for the task at hand and to accommodate the type of light fixtures.

The estimated annual savings for the JDSU McCarthy Ranch site that could be achieved with the recommendations from the study are listed in the table below.

JDSU McCarthy Ranch Savings

Energy Cost Savings	\$6,000
Energy Savings	50 MWH
HVAC Interactive Effect Saving	\$1,200
Operational Savings (extending lamp life)	\$1,800
Savings/1,000 SF	\$55/1,000 SF

With a global JDSU real estate footprint of almost 2.1 million square feet, the savings from just lighting alone would be significant.

ABOUT ENLIGHTED

Enlighted provides people-smart energy efficiency solutions for commercial environments. Its first application—advanced lighting control, built on the Enlighted sensor and analytics platform—saves companies between 50% and 70% in energy costs while tuning individual workspaces for the comfort and efficiency of the people who work in them. Additional applications ranging from occupancy and real estate analysis, to HVAC controls, to security services are based on additional data that can be observed and aggregated on the Enlighted Cloud.

For more information visit www.enlightedinc.com or email sales@enlightedinc.com.