Smart science gives the Salk Institute more lighting control

The Opportunity

The Salk Institute for Biological Studies is an independent, nonprofit, scientific research institute located in La Jolla, California. It was founded in 1960 by Jonas Salk, the developer of the polio vaccine whose mission was to dare to make dreams into reality.

The institute consistently ranks among the top institutions in the U.S. in terms of research output and quality in the life sciences arena. In 2004, the Times Higher Education Supplement ranked Salk as the world’s top biomedicine research institute, and in 2009, it was ranked number one globally by ScienceWatch for neuroscience and behavior.

In 2015, the institute embarked on a pioneering journey to reduce its lighting demand. The key requirements were:

- Lighting control without compromising research
- Technology longevity
- Flexibility for future expansion

The Solution

Based on recommendations from FSG (Facility Solutions Group), the institute’s vendor for lighting and HVAC systems, Salk’s facilities group recommended Daintree™ solutions from Current, powered by GE. After going through a thorough analysis based on trials of alternative solutions, Daintree proved to have the lowest installation cost, offered the most comprehensive control, and had an intuitive user interface. The fact that it is based on open standards was a critical factor for the Salk team since it delivers a future-proof solution. Current was the only company to offer multi-application control of lighting and other building control systems, hence it was selected to be deployed at the 600,000-square-foot facility.
“(The Daintree solution) offers the ability to put the facility to sleep once employees go home and wake it up before the employees are back for normal business hours, delivering automatic energy savings.”

—Tim Ball, Senior Director
Facility Services Salk Institute

The Results
Deploying a commercial lighting controls system often involves elaborate wiring that takes days to install, causing operational disruption and customer inconvenience—which is not acceptable in a research environment. Daintree’s wireless solution eliminates complex wiring, installs quickly, and delivers about 50% cost savings over a hard-wired solution. The lighting control ensures the quality of light is consistent and ensures comfort without impacting research in the facility.

Prior to its Daintree system, the Salk facilities group relied on monthly utility bills to track energy consumption. This reactive approach was causing unnecessary waste and was leading to an excessive energy bill. With Daintree, facility managers can monitor the site remotely with granular detail down to the individual device and can act immediately based on real-time information and reports.

“Daintree’s ControlScope provides wireless control and real time energy consumption enabling the Salk Institute to measure,
Current by GE has helped the Salk Institute achieve its goal of deploying a future-proof building energy management solution. Daintree has delivered over 14,576 kWh in energy savings per week. The solution helped the pioneering research institute to achieve efficient lighting and has exceeded cost saving goals. The Salk Institute plans to use Daintree to manage all lighting at their La Jolla site in California as well as include additional applications such as plug load and fan control moving forward.
Current's Daintree™ Solution Helps Mack Technologies Realize Greater Savings and a Lasting and Sustainable Impact

The Opportunity

Mack Technologies, a leading provider of complex electronic manufacturing services, makes electronic circuit boards for the defense, telecom, and industrial sections in its facility in Westford, Massachusetts. Mack Technologies researched efficient commercial lighting solutions to meet aggressive operational cost reduction goals, but concerns about the initial cost of replacing several thousand fluorescent bulbs made the manufacturer cautious about conversion. Mack Technologies also wanted to be a leader in corporate social responsibility. To do that, the company needed to significantly reduce its energy consumption and enhance employee working conditions while minimizing the cost of investment.

The Solution

Mack Technologies believed that the key to achieving energy efficiency was to leverage transformative technologies. Knowing that LED lighting, along with Daintree intelligent lighting controls, represent a significant innovation in energy efficiency, Mack Technologies sought to retrofit its 108,000-square-foot manufacturing facility in Westford.

To make this goal a reality, the firm brought in Bluestone Energy Services to develop and execute the comprehensive LED lighting and intelligent control project. Realizing the value of Daintree, Mack raised the bar in LED conversion by integrating controls to dramatically improve efficiency and flexibility.

The Results

The Daintree solution from Current, powered by GE, provides a wireless control solution for smart buildings, allowing Mack to transform LED conversion into a greater energy- and cost-savings investment. Daintree controls the new lighting fixtures through a standards-compliant ZigBee mesh network, enabling the driver in each lighting fixture to provide maximum flexibility to lighting control strategies.

Between October and December of 2012, Mack replaced 2,600 T-8 fluorescents with LED fixtures—investing over 3,000 man hours for the installation. The LED fixtures are warranted for five years or 50,000 hours and will not require frequent replacement like the fluorescent lighting fixtures they replaced.

At Mack, each fixture is individually programmed through ControlScope Manager to achieve maximum savings. Mack decreased the lighting intensity in one area from its normal level in 1-percent increments to better understand what levels were important for the tasks being performed. Not until the level reached 50 percent of spec standard did occupants perceive the lighting to be noticeably dimmer. So, while Mack is already saving significant money on its energy bill, it has opportunities to extract more savings from Daintree as the users gain experience with actual usage requirements.

"We were blown away by the information we came across in terms of the energy savings and the positive impact to the environment that we could realize."
—John Kovach
Former President of Mack Technologies

Through ControlScope Manager, Mack Technologies has access to reports that show its energy usage based on its settings. This information enables Mack to discover and implement opportunities to improve the facility's energy usage, boosting the business profitability. Mack can also use this information to define and refine zones of lighting to be controlled as a group on a schedule, on demand, or on sensor-based occupancy as they see fit.

Want to see how you can make your environment intelligent?
Contact us to get the conversation started.