



## Merck & Co., Whitehouse Station, NJ

**Project Overview:** Merck & Co. is one of the largest pharmaceutical companies in the world and its headquarters is located in Whitehouse Station, NJ. The corporation considers itself to be a global research-driven company; constantly working to discover, develop, manufacture, and market innovative products to improve both human and animal health.

In 2009, Merck updated its Corporate Energy Policy, calling for the company to become the most efficient energy steward in the pharmaceutical industry, according to Merck's Climate Change Statement. A "green" company is more attractive to both workers and customers because people have a greater respect for a company that considers its own environmental impact. Merck is an Energy Star® partner and has been recognized by the Environmental Protection Agency for the past five years in a row. The pharmaceutical giant was looking for a way to cut down energy costs for its headquarters.

A smart lighting system would be a perfect fit for a company already aware of its environmental impact.

It seemed to be the next logical step for Merck to continue along its environmentally aware path. "Managing energy use is consistent with Merck's values as a health care company and is critical to our business operations," said Rodney Freeman, vice president, Global Facilities Management, Merck & Co., Inc. ([airbestpractices.com](http://airbestpractices.com)).

Encelium's Polaris software would allow Merck to collect data on each energy management strategy and increase the company's ability to monitor its environmental impact. Merck decided to use its S4 building as an initial test for Encelium's ECS system.

CaseStudy  
Merck & Co., Whitehouse Station, NJ

Lighting Control  
for the Intelligent  
Office Building



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## Project Objectives

- > Reduce lighting energy consumption by 50% and deliver a simple payback from energy savings of less than five years.
- > Maintain illumination levels consistent with IES standards and eliminate over-lighting where possible
- > Reduce lighting demand by 35% and provide demand responsive load shedding capabilities
- > Improve workplace comfort, ergonomics, and productivity by optimizing lighting control
- > Provide computerized control of lighting from a central software application

## Strategies Used

ECS delivered energy savings which exceeded customer expectations through the deployment of the following energy management strategies:

### Task Tuning

Tuning light levels to suit the particular task or use in a workspace

### Daylight Harvesting

Adjusting artificial light based on ambient natural light contribution

### Smart Time Scheduling

Time scheduled switching based on zones as small as an individual workspace

### Personal Control

Control of personal lighting space from the desktop PC

### Occupancy Sensing

Switching or dimming lighting based on occupancy

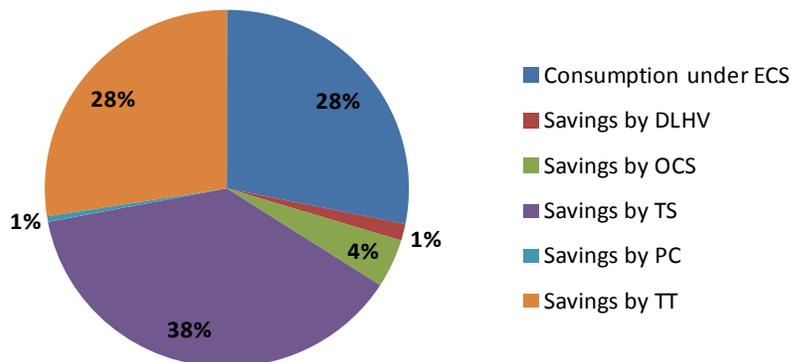
### Load Shedding

Intelligent management of peak/ non peak lighting energy demand

## Results Delivered

- > Lighting energy consumption reduced by 72%.
- > Annual energy cost reduction of \$36,949.
- > Lighting demand reduced by 72%.
- > Simple payback of 3.5 years.

## Consumption Savings By Strategy



## Our Customers Speak

"We believe it is critical for climate change policies to include incentives to stimulate private sector innovation and investment in technologies needed to transition to a low carbon economy."

- Merck Climate Change Statement

"As a health care company, we recognize that Merck has an important role to play in identifying, and responding to the public health risks associated with climate change.

We are increasing our collaboration with scientific, academic, and government organizations to both assess these risks and to promote effective measures to address them - especially the health risks associated with threats to water supply in key regions of the world.

We believe Merck's longstanding support of stronger health systems and expanded access to medicines and vaccines in underserved areas is even more important given the evidence that certain disease patterns can be associated with changing climate conditions." - Merck Climate Change Statement