

product of the month

EcoSystem™ By Lutron

Problem: *Finding an effective way to light an entire office can be difficult and may waste energy.*

Solution: *Rethinking how the lighting system works can help enhance energy and convenience.*

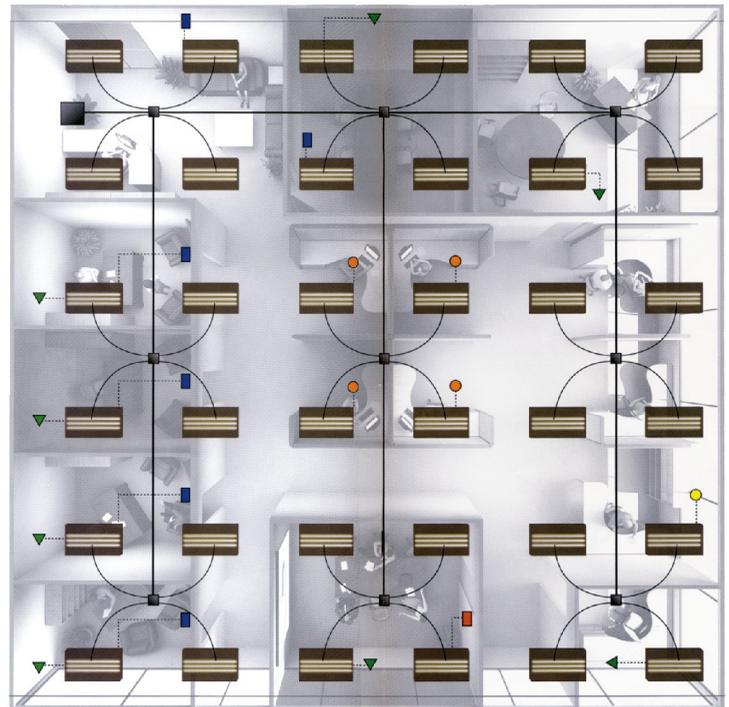
The EcoSystem Ballast from Lutron offers facility managers a technologically savvy way to manage lighting in a building. By implementing this ballast system, energy management becomes easier. Designed around a series of sensors, the ballast can be used to create a subsystem that is intelligent enough to know when an area is being occupied or when to dim itself due to the amount of light that is present on a floor.

It is well known that energy is one of the most expensive aspects of any building. Even with efficient lamps, waste still occurs. Often, energy saving lamps will be in continuous use—even when it is not necessary.

This problem can easily be corrected with a daylight harvesting system. Daylight harvesting is a method by which the lights in a facility are dimmed when the effects of the sun are most beneficial and raised when the sun is no longer sufficient to provide enough light for occupants of the building.

EcoSystem aims to reduce this waste by incorporating a photocell sensor that can easily be installed in the ballast system. The photocell is affixed somewhere in the office, where it can detect the amount of sunlight that is entering the building. As the level of sunlight on the photocell rises, the sensor sends a message to the ballast which then lowers the amount of light the lamps provide throughout the office. Then, once the amount of sunlight begins to recede, the ballast raises the light to a comfortable level so occupants can work comfortably and efficiently.

Another innovation offered by EcoSystem directly benefits

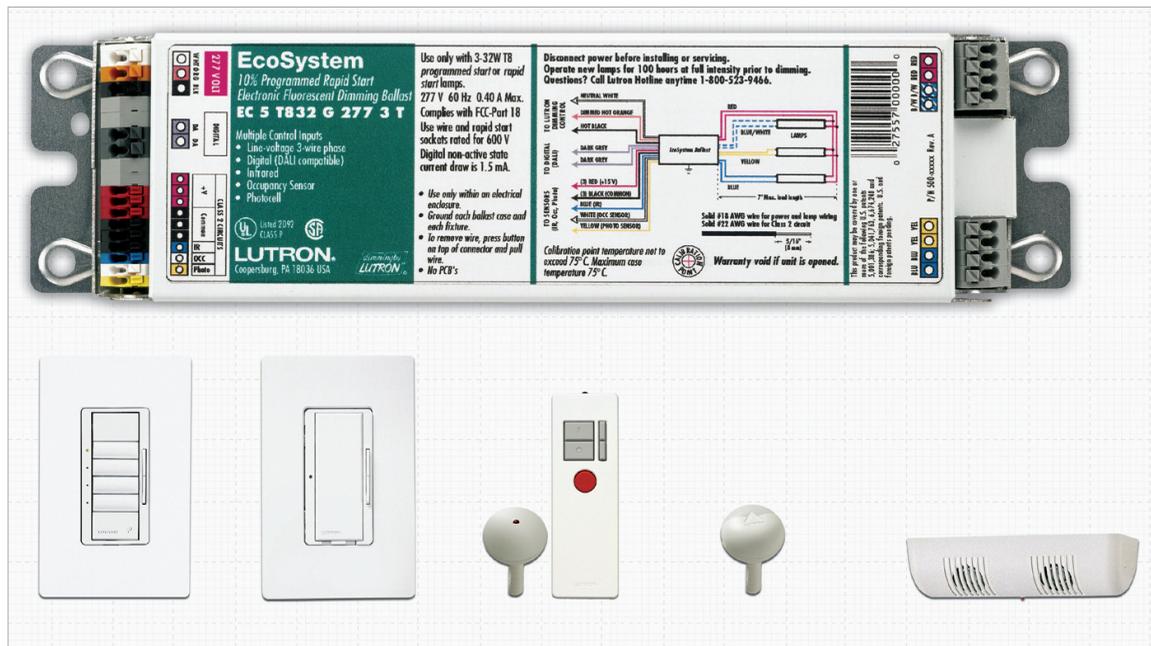


Above is an overhead view of EcoSystem in a building. The blue blocks are wall stations, the orange circles are IR receivers, the green triangles are occupant sensors, and the yellow circle is a photosensor.



the occupants of the facility. When people leave their work space, they often neglect to turn off the lights. This ballast allows for occupancy sensors to be installed in the system. This way, when someone leaves his or her desk, the lights in that work station will automatically dim or turn off. This device reduces the amount of wasted energy in a building and can help lower energy costs.

Most often, these occupancy sensors will be installed in a shared or open work space such as a conference room. When the space is in use, there will be light; but when the space is emptied, the lights will shut down.



From top, moving counter clockwise are the EcoSystem control components: the EcoSystem ballast, two wall station controls, IR receiver and remote control, photosensor, and occupancy sensor.

For private offices or individual work stations that are farther from windows and cannot take advantage of daylight harvesting, a degree of personal control is required. Because the amount of natural light that will filter to the middle of an office floor is different from the light on the edges, an office system relying entirely on daylighting may literally leave some employees in the dark.

In response to these discrepancies, EcoSystem allows individual control of the system. One option that is offered is an infrared receiver and remote control. This gives an occupant the ability to adjust the amount of light present in the work station. Instead of having to complain to the facility manager about lighting, employees have the ability to change the light level present in their work station themselves.

Private offices, on the other hand, can be outfitted with IR receivers and remote controls, but more often will be equipped with a wall station control. This acts as a simple on/off switch for the overhead lighting.

Once the sensors and controls have been installed, the EcoSystem begins to take shape. Each individual ballast controls a local number of sensors. One ballast may control two private offices.

The two offices—or any set of ballast controlled lighting—can be connected in several ways. Daisy chain, star method, or T-tap configurations provide flexibility for creat-

ing a set up that's most convenient for the given space in the office building.

Once a ballast system has been installed, that system can then be connected to another local system which could run four individual work spaces. Those two systems are then wired into another bank of local systems which run back to a control bus power supply that operates the system.

An added benefit of the EcoSystem is the flexibility it offers. Once a system is installed in a building, a facility manager is not married to one design. Because companies are constantly going through restructuring and reorganization, EcoSystem's ability to adapt to a constantly shifting workplace is a great attribute. If a conference room that is outfitted with an occupancy sensor needs to be converted into a work space with four work stations, a facility manager will not have to rewire the whole system. Instead, a manager just has to remove the one sensor and replace it with another. The ballasts are intelligent enough to supply the system with the correct information to accommodate the change to the network.

EcoSystem offers facility managers a lighting solution that allows them to stay flexible. And while easily adapting to the changing workspace, the system provides customizable lighting and energy savings at the same time. □