



U.K. Streetlighting System Saves Energy, Improves Safety with LONWORKS[®] Technology



Faced with rising energy and maintenance costs due to its aging Streetlighting equipment, Milton Keynes, a city of 216,000 located 45 miles northwest of London, decided to modernize its network. Now, outfitted with a new Intelligent monitored Streetlighting system, Milton Keynes is living up to its motto, “The city that thinks differently”.

Smart thinking

The new system, which includes smart electronic ballasts from SELC Ireland and enterprise monitoring software from Streetlight.Vision, is based on LONWORKS technology – an open, extensible architecture that lets control devices from multiple manufacturers interact with each other.

The system uses new lower-wattage streetlights that last longer, offer higher-quality lighting, and can communicate over a network. Each light includes a smart electronic ballast that identifies lamp and ballast failures, measures energy use, running hours, and voltage, and enables remote command through the power line network, thanks to Echelon’s embedded power line transceivers. The transceivers communicate with Echelon’s iLON[®] 100 Internet Servers over the LONWORKS network.

The servers, acting as segment controllers, communicate with a central computer equipped with Streetlight.Vision’s Enterprise Monitoring Web Software to record each lamp’s energy use, status, and failure information.

Each iLON Internet Server includes a built-in astronomical clock that tracks changes in sunlight levels. This lets the lamps adjust their illumination accordingly from midnight until dawn, which not only reduces energy costs but also prolongs lamp life. City employees can use a Web interface to remotely control the lamps, as well as to access lamp failure and energy use data.

Smart Results

The solution has helped cut Milton Keynes’s energy use by 40% – a substantial savings that will help pay for the system, according to Kevin Whiteside, the city’s Chief Highways and Transportation Engineer. “More efficient energy use also helps us reduce carbon dioxide emissions, which is an ever-increasing concern for communities and local governments,” said Whiteside. The new ballasts and lamps not only help satisfy various European Union and worldwide directives to reduce energy use, but because they contain fewer high-polluting components such as mercury, they also support EU initiatives to curb the use of products that contribute to heavy metal pollution.

Especially older media, ranging from twisted pair, power lines, and more recently fiber optics, to wireless radio. It is especially popular for the automation of various



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functions within buildings, such as lighting and HVAC. In addition, remote lamp monitoring has greatly lowered maintenance costs by reducing the amount of time that crews spend on the road manually checking street lights for repairs. Finally, improved street lighting conditions help drivers and pedestrians see better at night, reducing potential accidents.

The city that thinks differently is also thinking ahead. Buoyed by such positive results, the leaders of Milton Keynes plan to install 10,000 more streetlights over the next three years. "The LONWORKS system is an investment in our city's future," said Whiteside.

The Customer

Milton Keynes City Council
Milton Keynes, U.K.
http://www.milton-keynes.gov.uk/street_lighting

The Challenge

The City of Milton Keynes was experiencing rising energy and maintenance costs due to its aging Streetlighting equipment.

The Solution

Milton Keynes upgraded to a monitored Streetlighting system based on LONWORKS technology. The system uses new lower-wattage streetlights that last longer, offer higher-quality lighting, and communicate over existing power lines via Echelon's power line technology. Echelon's *i*.LON 100 Internet Servers monitor and control the streetlights, automatically dimming some or all of them based on traffic, weather, and available light. The system also remotely analyzes lamp behavior and identifies any lamp failures.

Key Benefits

- Reduced energy use by 40%
- Reduced light pollution and CO2 emissions
- Reduced maintenance costs
- Improved driver and pedestrian safety

Products and Suppliers

- Echelon *i*.LON 100 Internet Server
- Philips Holophane QSM lanterns
- SELC control gear/electronic ballast
- Streetlight.Vision Enterprise Monitoring Web Software

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