

# Strategy in Action Redditch Station



**75%**



**Comparative energy saving**



**Significant increase in lighting levels and quality**



**Increase in security and comfort**

## Client Background

London Midland operates train services throughout the heart of England from London to Birmingham, managing 150 stations, operating 1,300 services per day and 70 million passenger journeys a year.

London Midland is embracing new energy efficient lighting technology to drive a reduction in both energy and maintenance costs, improving the customer environment and reducing its carbon footprint.

Redditch Station is the southern terminus of the Cross-City Line. The manned station consists of one platform, ticket office, waiting area and large car park. High pressure sodium, metal halide and fluorescent luminaires were previously installed throughout the station.

## The Challenge

The primary objectives of the new lighting scheme were to increase the light levels, reduce energy usage and to provide a safe and comfortable environment thus increasing security and passenger confidence. Further to this, London Midland was keen to reduce its routine maintenance and emergency testing costs.

The platforms presented a particular challenge as they require specific lighting levels and uniformity in order to comply with current rail standards. The standards also require that the ticket office has a higher than average lighting level to meet the needs of the visually impaired and to ensure that both staff and customers can communicate clearly.

Before



After



**Pictured:** Platform, Redditch Station

# Strategy in Action

## Redditch Station continued

### The Solution

Thorlux proposed the use of high efficiency LED luminaires combined with SmartScan energy saving controls. Projects utilising the Thorlux SmartScan system can frequently benefit from energy savings in excess of 70% when compared with conventional technology.

The factory-fitted addition of a SmartScan transceiver to a Thorlux Smart luminaire introduces the latest wireless mesh network technology and replaces the wired Motionline communication signals between luminaires with sophisticated, trouble-free wireless transmissions.

Each transceiver can be individually programmed with a SmartScan Programmer, during commissioning, and assigned to work exclusively within a particular building, or group created within that building. Energy performance data and operational status can be retrieved using the SmartScan Programmer.

SmartScan uses 868MHz secure radio communication, chosen for its excellent transmission distance and object penetration, especially useful within buildings. Each luminaire acts as a wireless node, repeating each command received onto the next luminaire, providing a robust system that will always find a communication path.

Wireless grouping was deemed an important requirement to enhance the safety of London Midland's staff and customers and to ensure that essential lighting can respond across all key areas of the site in the event of single occupancy. A further benefit of the SmartScan system is the ability to record and report all faults in real time, test and remotely monitor all emergency lighting and collect energy performance data. This information can then be uploaded using a SmartScan Gateway via GSM, without a need for LAN connection, to a secure web-based server that can be accessed remotely by London Midland authorised users by either computer or smartphone.

High performance LED luminaires were selected for both the internal and external applications. The combination of highly efficient LEDs with superb optical control from the luminaire - putting the light where it is needed most, with efficacies of up to 149 luminaire lumens per circuit watt, double that of conventional luminaires - has dramatically reduced the installed energy load. The luminaires also benefit from lifetimes of up to 100,000 hours, providing many years of reliable lighting.

### Innovation in Redditch

Redditch MP, Rachel Maclean, and the Mayor of Redditch, Jenny Wheeler joined representatives from London Midland and Thorlux Lighting at the unveiling of the new Redditch Station SmartScan lighting installation.



Before



After



Pictured: Car park, Redditch Station

## Key Benefits

### Operational:

- Energy savings of 75% whilst increasing lighting levels to current rail safety standards.
- Presence detection providing full illumination only when areas are occupied, dimming to 10% security lighting level or switching off when vacated.
- Flexible switching zones, selectable dim levels and time delays improving safety, visual appearance upon approach and site security.
- Reduced anti-social element as the lighting is now monitoring presence after normal operational hours.
- Improved visual recognition on CCTV.



“This is another example of London Midland’s commitment to using innovation to create simply better journeys for our customers. The partnership with Thorlux means we have a brighter, lighter, safer station that is also better for the environment.”

### Operational Savings:

- The installation cost has been reduced substantially by using existing luminaire mounting points without requiring any additional data cabling for the control system.
- Monthly and annual emergency testing responsibility eliminated.
- Remote monitoring of all energy usage and luminaire status allowing fast, proactive maintenance, reducing future maintenance costs significantly.
- Extensive re-lamping programme has been cancelled due to 100,000 hour expected LED lifetime.
- Reduced energy costs despite increased lighting levels and longer running hours.

### Rob Hornsey

Head of Route for Cross-City services at London Midland