

Solution: Intesis Modbus to DALI gateways
Country: United Kingdom
Company: Morson Projects, Ematics
Summary: Modern lighting system for busy road tunnel combines optimum illumination with low energy consumption.



The effects

- Custom-designed optics provides uniform lighting while being easy to install and maintain.
- Control system allows the lighting levels to be matched to the ambient conditions.
- Cloud connection enable remote monitoring and automatic operational data archiving.



"The gateways are simple to install and enable quick and reliable commissioning of the system, so were crucial in the successful completion of the project."

Lior Golani, Managing Director at
Consyst Ltd

Low glare tunnel lighting keeps drivers safe

A new lighting system in one of London's busiest road tunnels is providing optimum, glare-free light while also saving energy.

The North Circular Road and its Hanger Lane Tunnels have played a vital role in keeping North London traffic flowing for sixty years, and with ever-increasing vehicle numbers they have to be kept in tip-top condition. The tunnels run under the Hanger Lane gyratory road junction and consists of two 240m tunnels, each accommodating two lanes of traffic. They were built in 1960 and as a major route in and out of London takes in excess of 22 million vehicles annually.

Until recently, the tunnel had an aging lighting and control system. With the luminaires corroding more every year, it was decided to replace the whole system. Morson Projects' specialist control system division Ematics and partners TRT were chosen to do this vital work.

A bespoke optical solution had to be developed as height limitations meant the luminaires could only be placed in the existing cornice positions, thus keeping the space above the traffic lanes clear. Custom optics based on TRT Verso equipment were designed to provides uniform lighting and low glare, while being easy to install and maintain.

These new LED luminaires are powered by DALI (Digital Addressable Lighting Interface) controlled drivers which are linked directly to a Schneider M340 eMaster lighting control system.



This state of the art control allows the access luminance to be monitored and constantly optimise lighting levels to the carriageway and walls.

By using a full dimming system linked to a photometer, the lighting levels required considering the ambient conditions can be accurately achieved in the tunnel, generating significant power consumption savings over the previous switched stage system that would often over-light the tunnel.

As well as the eMaster control system configured in a dual redundant PLC architecture and LED luminaires from Verso, Ematics used a Connexium Network SCADA Interface, Magelis HMI TRT and Intesis DALI gateways.

The Intesis DALI gateways are made by HMS Industrial Networks and were sourced through its building and infrastructure control specialist channel partner Consyst Ltd, which is based only a few miles from Hanger Lane. Director Lior Golani explains:

“The gateways are simple to install and enable quick and reliable commissioning of the system, so were crucial in the successful completion of the Hanger Lane tunnel project. By including a Cloud connector the whole network can be remotely monitored and a full set of operational data can be automatically archived.”

As well as DALI HMS makes gateways for all the major building automation protocols, including ASCII, BACnet, KNX, M-bus and Modbus.

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