



DW Projects Motorway Improvement Scheme

Our partner

David Webster Limited are specialists in external lighting and highways infrastructure installations.

The company's DW Projects division, installs and maintains next generation communications networks for large scale civil engineering projects, such as motorway widening contracts and relighting Park Lane in Central London.

The company has considerable experience of working in and for most local and national authorities, the Highways Agency, Transport for London (TfL) and many County, Metropolitan Borough and District Councils.

Specialists in communications, CCTV and highway lighting with particular reference to capital projects on motorway and major trunk road networks, DW Projects is able to deliver technically advanced infrastructure systems for a number of industries including highways, rail, air-side and telecommunications.

DW Projects undertake all ranges of highway CCTV and lighting contracts covering installation and maintenance and specialise in the larger capital schemes on motorways and trunk roads. The company has a wide range of camera experience delivering both temporary and permanent installations across the country.

The challenge

DW Projects were commissioned to install a CCTV traffic management system along both carriageways of one of the country's busiest motorways during a period of improvements.

The system would be responsible for monitoring around 115,000 vehicles daily, and ensuring that any breakdowns or accidents are safely and rapidly dealt with.

The CCTV system implemented by DW Projects involves 61 Pan Tilt Zoom (PTZ) cameras covering approximately 27km of carriageway. These cameras need a reliable and efficient connection to relay pictures back to a network control centre which is situated nearby.

Typically in highway construction projects, connection between cameras and control centres is achieved using fibre-optic cables strung along the roadside – often simply looped over the boundary fence posts. Not surprisingly, these are very prone to damage and consequent failure. As a result of these unreliable connections it is necessary for engineers to be permanently on call to go out and fix faults. This is not only costly but also leads to times when essential public safety cameras are out of action.

Highlights

Challenge

To provide secure, stable, high quality connectivity for 61 traffic monitoring CCTV cameras along 27km of motorway.

Solution

A fully managed and integrated network design incorporating a carrier-grade backbone network, Wireless point-to-point and multipoint radio link access and network video recording (NVR).

Benefits

- Removed need for damage prone cabling
- Significantly reduced engineering support costs
- Met challenging project timescales
- Positive impact on carbon footprint reduction targets through reduced engineer call outs
- Additional features such as Wi-Fi and mobile cameras can be easily incorporated if required

DW Projects Case Study

For this latest scheme DW Projects sought an alternative, more reliable system and it quickly became apparent to them that a wireless connection could simply and cost-effectively replace the traditional cabled approach, while maintaining picture quality. A wireless solution would remove the need for vulnerable cabling and dramatically reduce the costs of maintaining full-time engineering resources.

DW Projects were aware that with the complex terrain and a harsh changeable environment, it would be essential to have rigorous network design in order to ensure performance, reliability and cost effectiveness on behalf of their customers.

The solution

DW Projects had worked with UK Broadband (UKB) on a previous project and so naturally turned to them again to supply a robust, high capacity wireless solution. Working closely with the DW Projects team, UKB engineers carried out a comprehensive site survey.

By drawing on their extensive experience in designing and implementing fully integrated wireless projects, UKB were able to deliver a complete solution. This takes into account the demands of transmitting across a changing construction site and the challenging environmental conditions, while also fulfilling the required capacity and reliability requirements in a cost effective manner.

Ceragon's FibeAir IP-10 microwave was proposed to provide a 200Mbps wireless core backbone for transmission of the roadside camera video images to the network control centre. Using licensed frequencies, the FibeAir IP-10 system offers an easy to install, robust and flexible solution essential for the harsh motorway conditions.

Infinet Wireless point-to-point and point-to-multipoint radios provide a "last mile" solution to the CCTV cameras not on the wireless core backbone.

The Infinet radios perform well even in restricted line of site environments, are well proven in CCTV deployments and have the industry's highest throughput – essential for real time video streaming.

Once the CCTV images have been transmitted via the wireless links, they are received at the control centre, located nearby. UKB's network design recommended use of Genetec Omnicast NVR digital image processing solution which is software based and has inbuilt flexibility to allow monitoring, recording and rapid access of images.

The benefits

Simon Whitehouse, Divisional Director at DW Projects explained the value of wireless in this environment, "The traditional approach on civil construction projects has been to use cabling to connect CCTV cameras.

"This causes numerous problems as these cables are highly vulnerable on sites which are heavy with construction traffic. If the video pictures from the CCTV units are compromised there are significant public safety issues, so it is vital that we find a way to reduce the risk of broken connections.

"At DW Projects we have found that, by working with UKB, we have been able to implement complete wireless transmission giving us highly reliable and robust connectivity, which is cost effective and can be implemented rapidly."

Tim Close, Sales Director at UKB, continued the theme, "Using wireless connectivity to link CCTV cameras with control centres is becoming an increasingly popular alternative to traditional cabled solutions.

"Wireless connections are easy to install, provide robust high capacity bandwidth suitable for transmission of video

imaging and have the great advantage that they eliminate the need for vulnerable cabling. We believe that this is the largest wireless deployment for a motorway project in the UK and its great success makes us confident that many others will follow."

"We are really pleased with the wireless solution. It delivers exactly what we need which is a reliable, headache free connection at a sensible price. Even during the inclement weather earlier this year the system showed no signs of deterioration due to the conditions."

Simon Whitehouse,
Divisional Director, DW Projects.



About us

UK Broadband is the UK's largest holder of national radio spectrum suitable for 4G mobile services and fixed wireless solutions.

We provide wireless data capacity, equipment, services and solutions to the telecoms industry, service providers, channel partners and the public sector.

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