



Highways and Construction: innovative, flexible security comprising wireless networks of JCB Smart Tower® systems, with advanced fluid mesh connectivity. A dynamic solution that not only protects the site but adds operational value for Costain Heads of Valley road improvement project.

BACKGROUND

The A465 is a major road in South Wales spanning 66 miles, and more commonly known as the Heads of the Valley road as it joins together the northern ends (or 'heads') of the South Wales Valleys.

The road follows the southern boundary of the Brecon Beacons National Park and the project will present significant engineering and environmental challenges as it passes through a number of sites of special scientific interest. With an ascent of more than 400 metres, radio communications are limited.

The project is seen as critical to the social and economic regeneration of the Heads of the Valleys area and Costain has been contracted to help design and construct the section between Brynmawr and Gilwern.

VPS Site Security is working with Costain to provide a fully integrated security and monitoring solution using a combination of its mobile CCTV product (the JCB Smart Tower®) and manpower services. The objectives are to protect a number of construction storage sites as well as monitor the traffic flow over the 14km stretch under construction. The overall scheme is planned for completion in 2018.

OVERVIEW

SECTOR	Infrastructure
CUSTOMER	Costain
SITE	A465 - Heads of the Valley
CHALLENGES	<ul style="list-style-type: none"> • Volume of traffic • Remote location and difficult terrain • Numerous interfaces and access points • High profile scheme
SOLUTION	Unique, advanced wireless network of JCB Smart Tower® systems via wireless fluid meshconnectivity* to a VPS Site Security mobile monitoring station
VALUE OF CONTRACT - OVERALL PROJECT	Over £150 million
DURATION OF CONTRACT	Overall scheme is planned for completion in 2018

“The 14km stretch of works requires equipment and satellite compounds over a long stretch of land. The JCB Smart Towers® not only keep the compounds and plant secure from theft or vandalism, but also give us an early warning of motorists whose vehicles breakdown along the route and require help. It means that not only is the site protected, but that we can minimise potential delays to the project.”





SITE CHALLENGES

Length and remoteness of site

The road section under improvement stretches 14km through both rural areas and near town and industrial activities. There are many potential access points making it difficult to comprehensively restrict and monitor traffic flow 24/7. The location is highly visible and the progress maintains a high media profile, so increasing its vulnerability to vandalism, chance trespassing, theft and the simply curious.

Plant equipment security

The project site comprises of five satellite compounds which store heavy plant, vehicles, materials and fuel. The value of these runs into the millions. Construction sites also pose dangerous health and safety risks to any unauthorised trespassers, including children that often use such sites as playgrounds.

Traffic management

One third of the construction will impact road users and traffic flows. The traffic monitoring enabled by the use of the JCB Smart Towers* enables a vehicle breakdown to be spotted immediately along any part of the highway under development, allowing quick action to be taken to keep any consequent disruption and traffic congestion to a minimum.

Works progress

A construction site is dynamic, changing almost on a daily basis, plus the construction site manager has to be able to monitor and respond to operational requirements along the entire route at all times.

The assessment and recommendations

The starting point for any VPS assessment is to gain a detailed view of the entire site with the client, building up a footprint of the area, checking over the site plans, and combining a summary of local crime reports with an overall risk assessment of the area.

Employing solely guards and monitoring staff along the site would make it difficult to achieve comprehensive 24/7 coverage of the area, and would also be extremely expensive. Relying just on remotely-monitored CCTV technologies may not have enabled quick responses to incidents, particularly those which would affect the traffic flow.

Following a detailed risk assessment of the location, perimeter and the operational requirements of the project and the client, the resulting recommendations were a 'best-fit' combination of measures using physical and electronic security equipment combined with a night-time mobile response officer. The aim is to keep the site compounds secure, deter attempted breaches, and ensure any traffic incidents are picked up quickly.

SOLUTION

To meet the challenges, VPS Site Security planned an innovative network of 18 JCB Smart Towers* with 36 CCTV cameras installed along the 14km stretch of highway. Because of the remote and difficult terrains, they designed a wireless fluid mesh communications* system that provided unique, advanced connectivity for the towers to allow transmissions to a purpose-built, mobile monitoring station.

Additional VPS mobile patrols supported and complimented the overall protection and monitoring service.

This network provided a dynamic, flexible solution, enabling 24/7 monitoring, and gave the client multiple benefits for their construction project:

- A safer environment in a busy, live traffic setting
- A fast-track monitoring and alert system to minimise congestion and disruption if a vehicle breaks down or an accident occurs
- Intelligent use of leading edge technologies that dramatically cut the costs of security staff whilst protecting valuable materials and equipment
- The towers provided visible deterrents enhanced by light and voice alerts, with automatic signals sent to the VPS monitoring station if there were attempted breaches
- A mobile control room located within the main compound meant managers could be kept up to date at all times on their tablets, with a real-time view from any of the towers
- Energy supply options ranged from on-site electricity supply, when available, through to stand-alone generators or environmentally sustainable hydrogen fuel cells, where no regular power supply exists
- Mixed solution benefits that contribute to Costain's social capital goals
- A strong partnership that will build and help develop for future, sustainable projects

Phil Bunting, VPS Site Security's manager for the project, adds "The advanced JCB Smart Towers* CCTV work in all lights and are incredibly detailed in the quality of the video they capture. A guards-only solution is sometimes necessary, but lower-cost, high-end designed technological options have changed the options for protecting construction sites. The best-fit solution may combine fewer manned security guards with these more specialist technologies."

"Equally important is that JCB Smart Towers* can be installed in any location, no matter how remote or challenging, and can be moved, added to, or reduced in capacity according to the dynamics of a site."

VPS are the market leaders in providing better, more dynamic security strategies for sites that are temporarily vacant or remote.

**Fluid mesh networks are an advanced technology that provide extendable, wireless transmission and reception of signals, including video, not limited to point-to-point communications.*



VPS
0330 005 5300
uk@vpsgroup.com

www.vpsgroup.com

Free site surveys
Call 0800 294 2828
enquiries@vps-sitesecurity.co.uk
www.vps-sitesecurity.co.uk