



# Atlas Road Track & Bridge Monitoring.

## Case Study

Under Track Crossings pose a high risk to rail infrastructure and managing the impact on the track and bridge abutments was a key requirement for proceeding with the project.

## PRODUCTS

DYWIDAG Track Void Monitor  
Automated Track Monitoring

## LOCATION

United Kingdom

## SCOPE

Supply  
Installation  
Technical Support

## OWNER

UK Power Networks

## GENERAL

CONTRACTOR  
Clancys

# Context

As part of enabling works for HS2, UK Power Networks (UKPN) was required to route power cables in North Acton near Atlas Road, West London. DYWIDAG was contracted to undertake the required survey and monitoring works on the railway tracks, bridge structure and two bridge abutments at the Atlas Road HDD crossing. The purpose of the monitoring was to ensure track alignment, geometry and structural stability stayed within the Network Rail (NR) standards throughout the crossing, whilst also acting as an early warning system should there be any change.

# Solution

The potential movement to the assets caused by the UTX could have been in several key parameters laid out in the NR N177 Standard and were most likely to be from Cant, Twist and vertical settlement. Therefore, it was agreed with the project team that a 3D monitoring system would be employed so that all these calculations could be made reliably and accurately.

To capture the coordinates of the track prisms an automated total station (ATS) solution was utilised. The ATS transferred data back to DYWIDAG servers where the information was illustrated on Infrastructure Intelligence (DYWIDAG's Data visualisation platform). The total station was able to provide 24/7 measurements of the tracks' movements, meeting all the NR CIV 177 standards and provided an easily accessible route for data management and interpretation. Due to the risk involved and potential impact, automatic alerts were set up to warn the project team should any trending movements occur. To accompany the total stations, DYWIDAG also installed DYWIDAG Void Monitor on each track across the centre line of the UTX to provide 24/7 dynamic readings of the rails' relationship with the track bed.

Manual monitoring was utilised on the bridge abutments where ATS's were a security risk and were not cost effective. 3D manual monitoring was carried out daily by a surveyor to monitor the bridge abutments, wing walls, parapets and under bridge crossings that fell in the zone of influence. The survey team also carried out a laser scanning survey and AutoCAD model of the underside of the bridges prior to works commencing.

Despite the challenges the Atlas Road project faced, works are being undertaken successfully, to the complete satisfaction of the clients and continue as an ongoing project.

