

Gerrards Cross Tunnel

Gerrards Cross, BUCKINGHAMSHIRE - UK

Rapid mobilisation of automated monitoring system to verify tunnel stability

On June the 30th, 2005, Gerrards Cross railway tunnel suffered a partial collapse.

SolData were approached to undertake the monitoring of the tunnel structure, which is used to accommodate rail services on the South Buckinghamshire train line to and from central London

It was essential to confirm the structural stability of the tunnel in order to allow mainline rail services to re-start. Jackson Civil Engineering looked to SolData to design and install an appropriate monitoring system.

SolData mobilised to site and installed 4 Cyclops monitoring system and 300 prism targets.

The system was installed, configured and commissioned within 1 week, and when Network Rail were satisfied that the structure was being closely scrutinised for any potential further movement, they decided to restart mainline rail services, mitigating the financial loss to the network operator and ensuring the safety of passengers using the service.

The system is operational 24 hours a day and transmits the recorded coordinates of the prisms to a central processing computer, allowing the team of on-site engineers to determine the stability of the tunnel immediately.

SolData has also been appointed to monitor the vibrations, noise and dust related to the construction works.

Quick facts:

- 4 Cyclops units
- 300 prism targets
- Real-time 3D monitoring of absolute prism co-ordinates
- Alarms configured to predefined limits
- Data visualisation via web access
- 5 noise monitoring terminals
- 3 dust monitors
- 4 Cyclops
- 1 weather station
- 1 Gorgon



Above – Installation inside the tunnel of the CYCLOPS systems using a 'Cheery Picker'.
Below – The Tunnel is re-activated under the safe watch of the CYCLOPS systems.



OWNER :	NETWORK RAIL
CONTRACTOR :	JACKSON CIVIL ENGINEERING
PROJECT DURATION :	AUG 2005 ONWARDS
SCOPE OF WORKS :	<ul style="list-style-type: none">• Rapid design, installation, commissioning and maintenance of monitoring system.• Remote technical support from Sol Data HQ and web data access.• Remote archiving of all data on Sol Data's Secure server systems at Sol Data HQ.