



Victoria Line, London

THE TASK

TPS was contracted to carry out a 3-dimensional survey along the length of the Victoria Line tunnels. We surveyed the rails and trackside equipment and a partner company surveyed the tunnel profile using laser sweeps. The two surveys were combined to form one 3D model which could then be used to determine tunnel clearances for the planned introduction of new rolling stock.

THE DESIGN AND THE SERVICE

We were responsible for setting out reference marks with a unique numbering system so that the two companies conducting the surveys were producing consistent data. The reference marks were positioned at intervals of 5m along the track. Planning and liaison with the partner company was carried out on a daily basis.

We employed ten survey teams operating for six months during 2002 on surveying the necessary detail. In addition, there were four data processors operating in the TPS office, and a project manager to coordinate the survey teams together with the London Underground protection staff assigned to the project. We surveyed GPS control stations at street level to fix the tunnel surveys onto the LUL Super Grid, and surveyed the rails with high specification Leica Total Stations, with the target prism mounted on a precisely machined rail shoe to maximise accuracy.

We processed the survey data using a combination of in-house software and LSS and the 3D models were produced in AutoCAD and MX. We checked the position and level of the rails using spreadsheets and advanced CAD routines. This was done at an early stage so that any errors could be corrected before large volumes of additional survey data had built up.

CLIENT:

KBR Halliburton and LUL

PROJECT VALUE:

£1m

SERVICES:

- Survey of Track Alignment and Tunnel Clearance

TYPE:

Rail

START DATE:

2002

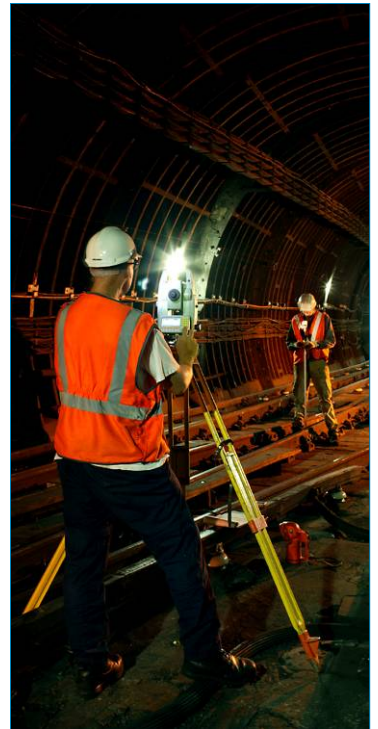
COMPLETION DATE:

2002

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THE RESULT

We successfully completed the project following close liaison with the partner company. The 3D model of the Victoria Line tunnels was constructed and tunnel clearances determined so that London Underground could introduce new rolling stock according to the planned implementation date. This contributed to the ongoing development of London's transport system, serving the local and business communities, as well as visitors to the capital.



FURTHER DETAILS

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