

Ridgidrain dries out Bramhope Tunnel

Polypipe Civils provided an advance drainage solution for one of the longest and certainly one of the wettest Victorian-era railway tunnels ever built in England.



**Ridgidrain
structured-
wall drainage
system**

Constructed from 1845 to 1849, Bramhope Tunnel is one of the wonders of Victorian rail engineering. However, water pouring through faults in the sandstone was a major hazard and was one of the reasons that 24 men of the original total workforce of 2,300 lost their lives during its construction. The tunnel also cost over £2 million, more than four times the original estimate. 150 years on and the water still caused significant ponding around the track bed, forcing a 48km/hr speed limit through this 3.6km section of the main rail link between Leeds and the Thirsk area. Combined with the fact that 50 years of maintenance had raised the track level by some 200mm and reduced train clearance to a bare minimum, necessitated a major £10 million rebuild within the tunnel. The Main Consultants, Corus Rail Consulting approached Polypipe Civils to design and manufacture a drainage system to replace the stone-built Victorian box culvert.

Polypipe Civils' Ridgidrain structured-wall drainage system provided a modern alternative to traditional drainage methods for the project and could be installed much quicker, reducing the overall construction

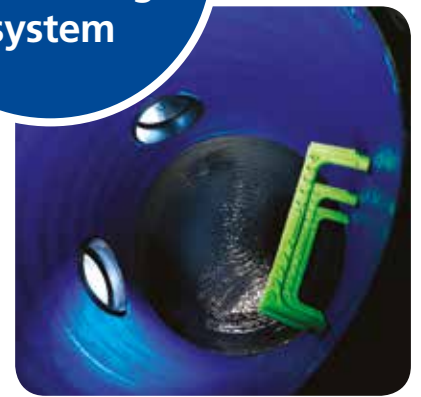
programme and minimising the need for heavy plant in and around the tunnel.

Simon Barraclough, Network Rail's Project Manager for the work advised, "The Victorian culvert was damaged and blocked with ballast. We looked at replacing the drain but it was not cost effective."

"We also needed the replacement system to have better flow characteristics in order to limit further work that would be required in the tunnel in the future"

Simon Barraclough,
Project Manager, Network Rail

Polypipe Civils' Technical Department at Loughborough spent almost 12 months designing, drawing and agreeing a system that included maintenance access every 30 metres along the length of the pipeline, satisfying the client requirements for the project, even though the Ridgidrain product involves relatively low maintenance.



CASE STUDY

Project

Drainage solution to prevent flooding in Victorian railway tunnel

Client

Network Rail

Application

Tunnel Drainage

Products

Ridgidrain