



Hagley Railway Undergrounding Sleep slope

Client
British Railways

Consultant
Ove Arup & Partners

Works Completed
1989



The Stourbridge to Kidderminster railway line passes through a deep sandstone cutting around ½ mile west of the village of Hagley in Worcestershire. The Elan Aqueduct, which carries 300 million litres of water from Mid Wales to Birmingham every day also crosses the rail line at this location.

A series of large diameter water pipes supplying the Frankley reservoir in Birmingham had to pass below the railway lines which required excavation of a section of the sandstone cuttings and later needed to be reinstated with a steep slope to blend into the natural rockface on either side.

Reinforced Earth Co. Ltd. (RECo) were brought in to develop a retaining solution for the steep slopes either side of the railway line, the slopes would need to support an embankment with a total height of 10m.

RECo designed and supplied 76 degree slopes manufactured from steel grid baskets connected to galvanised steel soil reinforcement with 120 year design life. The steel grid baskets are made from 10mm bars so the face does not deform. Using Reinforced Earth means that the pressures exerted on the foundation soils are significantly reduced when compared to other retaining walls, this is especially important when the structures are above critical infrastructure.

Reinforced Earth can also be rapidly built close to the railway track without the need to provide temporary support or scaffolding as all the construction activity takes part on the backfill side. The faces were not seeded however nature has taken its course and some slopes are now covered in vegetation, so much so it's very hard to distinguish their presence today!

