

CASE STUDY

RESTRICTED ACCESS PILING, ABERCYNON STATION

Project: Lengthening of existing platform and installation of a pedestrian subway under the tracks.

Location: Abercynon, Glamorgan

Client: Birse Rail Ltd.

Project Overview

Abercynon station serves the village of Abercynon and the Cynon Valley and is located on the Merthyr Line 15 miles north of Cardiff Central. Our role was to install a contiguous piled retaining wall allowing the station to be lengthened to accommodate longer passenger trains since the closure of its sister station, Abercynon North in 2008.



At the same time a pedestrian subway was being installed beneath the lines allowing pedestrians to move between platforms without using the old bridge which was to be removed.

Due to the nature of the work and the restricted access conditions in the fully functional station we piled the contig. wall with the rig located on the existing platform rather than on a purpose built piling matt. The rig we chose to use for its production capability and minimal working headroom was the Klemm 709.

Result

Birse Rail's engineers had come up with 5 possible solutions, 4 of which we commented on and offered our advice at the design stage. Having worked on many similar sites before and having gained an understanding of what was expected and the physical parameters we needed to work within, we offered a value engineered solution saving our client time and money. Understanding the rail-specific issues involved on this project allowed us to utilise the correct rig for the job ensuring that both Network Rail and the client were completely happy with the service we carried out and allowing the railway to continue with its normal operation safely.

Technical information

Four areas of piles: The rig used throughout was a Klemm 709 with a 5m mast height.
Area 1) East Temporary Works consisting of 33 No 450mm diameter piles to around 8.5m (reinforcement 8 No T25 full depth). Plus 25 number Ground Anchors.
Area 2) West Temporary Works consisting of 13 No 450mm diameter piles to 9.5m (reinforcement 8 No T25 full depth). Plus 12 number ground anchors.
Area 3) East Side Main Works 34 No 450mm diameter piles temp cased and drilled, to varying lengths up to 9m (reinforcement 6 No T25 full depth).
Area4) West Main Works 33 No. 450 Diameter piles up to 9m again Temp cased and drilled (508mm dia casing).