

# GRIFFITHS

civil engineering and construction



## Rail Division Case Study **Little Haglow Emergency Works**

**When a transitional slip failure near Lydney in Gloucestershire closed the SWM2 between Newport and Cheltenham Spa, Network Rail IP Wales turned to Griffiths to conduct emergency cutting remediation works to allow the busy freight line to be reopened just three days later.**

In early May 2018, IP Wales contacted Griffiths regarding emergency works for a transitional slip failure at Little Haglow on the Up line between Newport and Cheltenham Spa. Slipped material along the Upside cutting required removal to allow the passenger line to be re-opened. The site was flanked for the most part by large natural sea cliffs on the Upside.

A site inspection with Network Rail the following day revealed an immediate need for emergency intervention works as a 30m wide section of the 42m high embankment had slipped, displacing around 1000-1500 tons of material trackside. Critically, three concrete 1tonne head blocks at the crest of the embankment used to secure protective netting had been left suspended, posing an immediate serious threat to the operation of the line below and the very real risk of train derailment should they fall.

Griffiths immediately arranged for nine safety critical staff to deploy onsite to provide 24/7 slip watch and deployed

welfare on site. Within 24 hours emergency safety paperwork had been produced, including a detailed set of RAMS, method statement and task briefing. The following day, Griffiths deployed an Industrial Rope Access Trade Association (IRATA) qualified rope access team to site, as well as tools and materials to secure the concrete head blocks. This was achieved by drilling threaded bar steel anchors into the blocks secured with chemical resin and connected to wire ropes fixed into ground anchors 20m away.

Following the successful securing of the blocks, Griffiths and Network Rail agreed further remedial works. Network Rail's Access Planning Team secured a 54 hour slot during an existing possession from Friday 29th May to Monday 1st June.

Griffiths identified the need for an 18 wagon train to remove spoil from site, as well as a full suite of plant that including 3 x 27tonne Road Rail Excavators, a number of smaller excavators, Road Rail Vehicle Trailers, and

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associated attachments that included bag lifters, sleeper grabs and track timbers to protect the tracks. Griffiths also supplied 2 x 21tonne long-reach excavators, each with a reach of 16m. An additional 25tonne excavator equipped with shears to cut meshing and steel cables was also positioned at the crest of the embankment.

Removal of the existing netting over the slip required rope access operatives to descent either side of the slip while cutting the netting using disc-cutters. Once this was done the excavator cut the main 16mm vertical cables allowing the freed netting to be gathered ready for removal.

Following this, one of the long-reach excavators was deployed at the crest of the embankment to 'push' loose material down, while the other was located at the toe to 'pull' material towards the bottom of the embankment. Benching using gathered material allowed the lower excavator to work progressively higher up the slope. IRATA qualified rope access operatives were tasked with descending the slope and dislodging any remaining material using picks and bars. Once this was completed the spoil was loaded into the 18 wagons for transfer away from site.

The final stages of the work included the positioning of 35 precast concrete Legato Blocks to create a wall along the toe as a protective barrier against further material falling, and the installation of temporary drape netting.

The works were conducted during periods of heavy rainfall, cold temperatures and reduced daytime working. Risk assessments were carried out to ensure that adequate control measures were implemented to reduce the risk of working under these conditions. These included working a maximum 9-hour shift pattern, provision of hot drinks and additional lighting.

The abnormal possession was handed back on time. Following completion, a joint inspection was conducted with Network Rail to ensure satisfactory regrade and removal of the Temporary Speed Restriction.



Pictured above:

TOP: IRATA trained operatives descending the slope and dislodging loose material.

CENTRE: Spoil from the site is loaded into 18 wagons for transfer away from the site.

BOTTOM: Precast concrete Legato blocks are used to create a wall at the toe of the embankment as a protective barrier against further material falling onto the track.

## Project details at a glance

Client: **Network Rail IP Wales**  
Location: **Lydney, Gloucestershire**  
Completed: **April 2018**  
Value: **£450,000**  
Contract: **NR12**