

### WIVELSFIELD EMERGENCY EMBANKMENT WORKS

CK Rail successfully completed emergency embankment work on the Brighton Main Line following a landslide at Wivelsfield, East Sussex. This section of railway track was being closely monitored by Network Rail after England recorded its fifth wettest autumn on record, with seven months' worth of rain falling between October and December 2019. CK Rail reacted swiftly to the emergency response remit received from Dyer and Butler, commencing on Boxing Day 2019 and working around the clock in all weathers, to keep this major railway link into London running safely. To minimise disruption to passengers and safely deliver these emergency works, rail services continued to operate throughout, under a temporary speed restriction.

The preparatory work included a feasibility and concepts study, a topographical survey including ground investigations and the preparation of an engineering design solution. A preliminary ecological appraisal of the natural wildlife and habitat in the area was undertaken by an ecologist before the construction work commenced, beginning with extensive vegetation clearance along the embankment.

Simultaneously, CK Rail installed a 600-metre temporary haulage road and site compound, working closely with a local landowner to agree temporary access across their land. This haulage road was essential, allowing plant, machinery and materials to be safely delivered to and from site, over heavily waterlogged ground and ensuring this emergency work could be completed off-track so that rail services along the Main Line could continue to run. Collaborative working with key stakeholders to aid the emergency response time on this project was key. CK Rail worked closely with the local authority, to temporarily close Leylands Road for two weeks over the festive period and facilitate exclusive access to and from the emergency worksite.

CK Rail engineers worked day and night to complete these essential earthworks as efficiently as possible. At the toe of the embankment one hundred 12 metre long sheet piles were driven into the ground to form a wall of steel and stabilise the embankment. The slope was then regraded to a modern compliant grade, with the slope to the rear of the piling stepped, impacted and filled and rail side the embankment was layer filled and soiled over. Approximately 9000 tonnes of material were installed in total, to strengthen the embankment and future-proof the infrastructure.

Throughout this project CK Rail also undertook monitoring of the track and completed stabilisation works with a total of 39,000 tonnes of ballast used. After two weeks delivering the core elements of the emergency works, Leylands Road was reopened to motorists using temporary controlled traffic lights. This helped to minimise the impact on the local residents in the area returning to work at the end of the festive break.

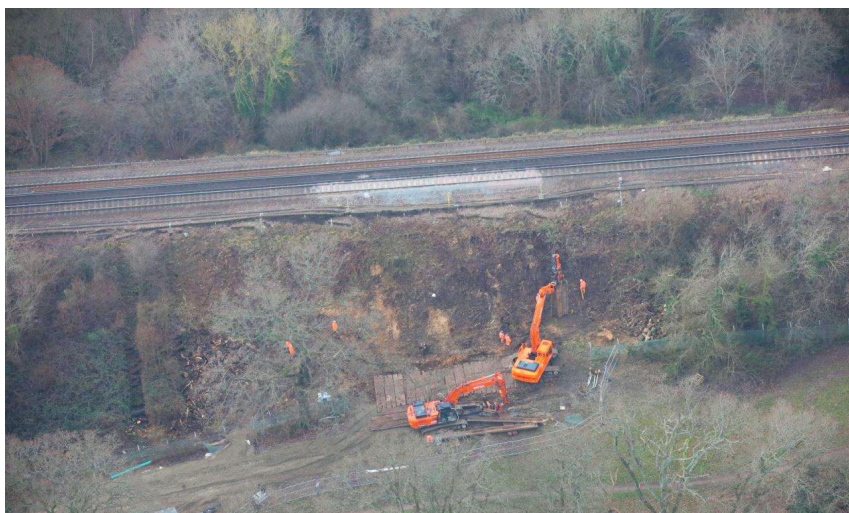


Image credit Network Rail








Client  
**DYER & BUTLER**

Value  
**£3.5 MILLION**

Project duration  
**26/12/19 - 14/02/20  
(7 WEEKS)**

#### Services

-  **Civils, Earth Works, Off-track and Drainage**
-  **Plant**
-  **Specialist Rail Consultancy**
-  **Structures**
-  **Vegetation Management**

#### Key facts

- Train services continued while the emergency work took place to minimise disruption to passengers- 600m temporary haulage road installed
- 100 (12 metres long) steel piles installed
- 9000 tonnes of materials installed in the regraded embankment
- 38,850 tonnes of track ballast
- 3708 hours safely worked, with no accidents or incidents reported

## CASE STUDY : WIVELSFIELD EMERGENCY EMBANKMENT WORKS

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Following confirmation that the track was permanently stabilised and no further movement was observed, the worksite was demobilised and CK Rail completed thorough remedial works. Full restoration of all the affected surrounding area included public footpaths repairs, re-seeding grass, planting trees, installing new fencing, alongside the complete removal of the temporary traffic light system.

After 21 days of the railway remaining open under a temporary speed restriction, the Brighton Main Line was fully reinstated to full line speed. CK Rail is proud to have delivered these essential emergency works safely, recording 3708 hours worked with no accidents or incidents reported.








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