

Geotechnical Division Case Study

Narberth Tunnel Vegetation Clearance

Working in collaboration with Network Rail Route Asset Management, Griffiths undertook vegetation clearance works, removing all dead, diseased and dangerous trees to mitigate lineside failures and improve performance of the operational railway by putting passengers first.

Narberth Tunnel is located approximately 400yds from Narberth railway station on the PEM railway line between Pembroke-Whitland in Southwest Wales.

In April 2019 Network Rail engaged Griffiths to provide a price and methodology to undertake extension vegetation clearance and associated works on the approaches to the North and South portals of Narberth tunnel.

Associated works included, desktop and intrusive environmental searches, clearance of lineside and crest drainage, topographical surveys and replacement of lineside fencing.

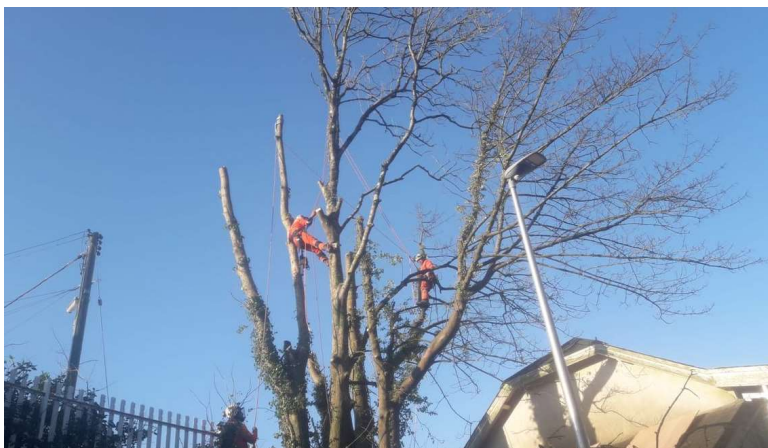
A series of geotechnical feasibility studies would follow the vegetation clearance to determine a permanent solution to remediate the cutting slopes with a minimum design life of ~ 60years.

Network Rail Design Delivery would be responsible for completing the surveys on site supervised by Griffiths rope access supervisors whilst descending the 40° steep slopes.

The main body of the works would be completed during a 19-day rail blockade in January 2020 whilst Griffiths undertook another large slope stabilisation scheme at Pembroke tunnel.



Pictured above: Narberth Station and Tunnel prior to works commencing



Pictured above: Griffiths Arboricultural tree climbers sectionally felling trees adjacent to Narberth Station Platform.

Throughout the remainder of 2019 Griffiths rope access technicians worked with environmental supply chain partners Ecovigour to conduct intrusive site surveys during rail possessions to access the steep rail cuttings.

During the surveys, a series of unexpected badger setts were located on the steep cutting slopes, un-identified in historic desk data mapping. Exclusion licenses were applied for and granted by the Welsh Government. Badger netting and gates were installed by our rope access technicians and monitored for the required period before closing the setts off completely to allow local vegetation clearance to understand the methodology to complete the main works. Failure to locate the setts and exclude the badgers would have inevitably delayed the main works during the rail blockade planned for January 2020

Undertaking works across both sites whilst working 24hrs per day 7-days a week required meticulous planning. For several months, our project management and resource teams developed robust resource plans utilising trained and competent resource from a pool of 1000 staff directly employed by Griffiths, supported by our specialist supply chain partners. In total, 150 staff were rostered over a 3-shift per day programme with a combined total exceeding 23,000 hours worked without a reportable accident or incident.

Working at Height presents safety issues in many sectors of the construction industry, clearing trees alongside the operational railway being no exception. Our Geotechnical Division employs over 50 staff, many having specialist skills sets including IRATA rope access, NPTC arboricultural technicians and personal track safety (PTS) which permits staff to work on the operational railway. Utilising these specialist skill sets ensured trees and vegetation out of reach for mechanical plant and immediately adjacent to the operational railway could be cleared without compromising safety.

Griffiths own and manage an extensive fleet of specialist plant and equipment including two road rail vehicles (RRV's). Operating such equipment on the managed rail infrastructure requires a POS licence which Griffiths hold. Both machines were utilised across the 19-day rail blockade supported by supply chain partners with comparable equipment and staff. Specialist tree grabs and attachments were used to remove all felled vegetation to a lay down area offsite where it was processed and sent to Biomass for re-use.

Griffiths recognise the importance of biodiversity and the impact our projects have on the local environment. Utilising local resources, over 500t tons of woodchip and mulch was sent to a local biomass facility for re-use as fuel, exceeding the client's KPI expectations of 95% diversion of waste from landfill.

Working in collaboration with Network Rail and our supply chain, all planned works were completed on time, in budget and the railway handed back to operational use without any faults



Pictured above: Works completed; railway handed back to operational use.

Project details at a glance

Client: **Network Rail**
Location: **Narberth, West Wales**
Completed: **February 2020**
Value: **£345k**
Contract: **NR9**



Pictured above:

Fig 1 & 2) Griffiths rope access technicians clearing lineside cuttings

Fig 3) Road Rail Vehicle collecting felled arisings during rail blockade

Fig 4) Griffiths rope access technicians eco plugging tree stumps

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