



Geotechnical Division Case Study

Beach Road Retaining Wall

Working in collaboration with Cormac Solutions Ltd (CSL), Griffiths undertook slope stabilisation works to remediate a failing structure in a busy tourist hotspot in Newquay Cornwall.

The town of Newquay is located on the North Atlantic Cornish coast and a popular sea-side resort attracting some 75,000 tourists in summer seasons. The town has become a mecca for surfers with some of the most popular beaches in the UK playing host to surfing and music festivals, attracting 150,000 festival goers over a 5-day period in August.

Beach Road is a steep and narrow street leading from the town to Newquay Harbour Beach and the only road accessible for emergency services and deliveries to Newquay Aquarium. With so many people dependent on the road for their livelihoods and pastimes, keeping the road open became a priority for CSL in Spring 2020 when a masonry retaining wall supporting the land adjacent to the bowling club displayed signs of fatigue, which resulted in the local authority closing off the main access for pedestrians and tourists.

Griffiths successfully tendered the works and were engaged as a sub-contractor by CSL to commence works in October 2020 following the end of the tourist season. The initial contract broadly consisted of installing 138No R32-280 hollow bar soil nails varying between 2m and Geobrug a G65/3 Tecco mesh to stabilise the existing slope.



Pictured above: Griffiths rope access technicians installing soil nails with a 13t Zero tail swing excavator fitted with a hydraulic drill mast



CSL would remain the Principal Contractor responsible for completing all enabling works which consisted of, liaison with statutory undertakers, exposing existing buried services, removal of existing street furniture, demolition and recovery of all masonry, excavation and removal of all arisings from the slope and rebuilding the masonry wall following completion of the stabilisation works.

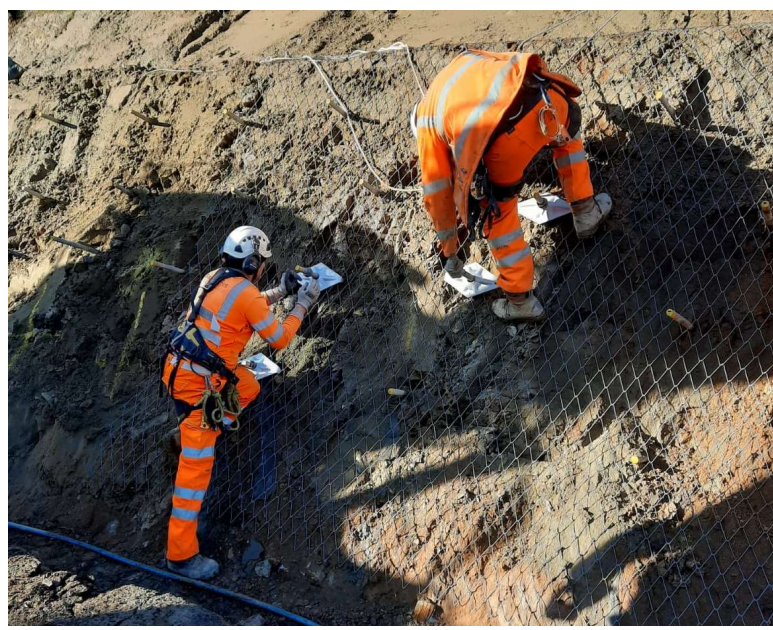
Griffiths mobilised to site as agreed with CSL in October 2020 to an abundance of tourists using the beaches and nearby facilities due to an unusually warm Autumn period and the aftermath of Covid-19 pandemic. Very quickly it became obvious, two contractors couldn't occupy the same space or utilise areas of the road to stable heavy items of plant due to the local coastguard requiring access along the road to the beach as well as necessary deliveries to a local restaurant.

Griffiths project managers agreed with CSL to deliver all necessary enabling works utilising the items of plant mobilised, therefore allowing essential access and mitigating congestion in the busy environment. To deliver the works safely with so many pedestrians in the nearby vicinity, Griffiths agreed to undertake the main enabling works including excavation of the slope by night from 1900-2300hrs, therefore avoiding contact between plant and pedestrians and disturbing residents with noisy plant and equipment. Griffiths deployed additional resources to site to mitigate fatigue, thus ensuring planned drilling works could be undertaken without our workforce exceeding normal working hours.

Utilising local hauliers with long reach hiab lorries, all existing street furniture was safely removed and stored in the local authorities' depots until completion of the main works. The same hauliers provided lorries to remove the existing masonry for safe storage until required to re-build the wall and additionally dispose of 400t of excavation arisings to a local recycling facility.

To mitigate further failures of the slope following stepped excavations, our geotechnical roped access technicians installed each row of soil nails in a logical sequence, fitting the rock fall protection mesh soon afterwards without applying maximum torque to the bolts until the grout had reached its required curing strength.

Griffiths initial delivery programme consisted of 3-weeks start to finish including standing time whilst the main contractor completed phases of work. By taking on the entire works less construction of the masonry retaining wall, Griffiths managed to complete all works in 5-weeks, 1 full week ahead of the programme agreed with CSL during re-phasing of the works.



Pictured above: Retaining wall re-instated, Beach Road re-opened to normal use.

Pictured above:
Fig 1) Griffiths rope access technician installing soil nails.
Fig 2) Griffiths rope access technicians attaching spike plates post installation of soil nails.
Fig 3) Completed slope stabilisation.

Project details at a glance

Client: **Cormac Solutions Limited**
Location: **Newquay, Cornwall**
Completed: **November 2020**
Value: **£125k**
Contract: **NEC3 Option A**