



Road Embankment Stabilisation 184 Sunrise Drive, Ocean View, QLD, Australia

Council: Moreton Bay Regional Council
Contractor: Brittwood Constructions

Geoinventions Consulting Services (GCS) were contacted by Brittwood Constructions to provide a detailed engineering design for a road embankment stabilisation project at 184 Sunrise Drive, Ocean View, Queensland.

A landslip of the road embankment occurred following heavy rains early in 2011. The 30.0m long landslip extended over the road verge and extended 12.0m from the kerb into private property. Moreton Bay Regional Council required immediate remediation of the road embankment to ensure there is no encroachment into the property toward the house situated above the landslip.

The scope of works included the design and construction of a gabion mass gravity retaining wall on the common boundary between the road reserve and Sunrise Drive, removal of slip material from the road reserve to re-establish the footpath profile and placement of the material within the private property to reinstate the slope back to its original profile.

The subsurface profile encountered consisted generally of stiff to very stiff silty clay underlain by extremely weathered siltstone.

It was proposed that a gravity wall would be ideal to provide primary support of the soil and Council received some design from another consultant which required the base width to be same as the wall height. Brittwood Constructions approached GCS to provide design optimization on the mass gravity structures to provide a more cost effective solution based on GCS immense gabion wall experience.

GCS designed a flexible Gabion mass gravity wall which varied in height between 2.0m and 3.0m in height and extended the full length of 30.0m. In order to achieve the required bearing capacity, the gabion mass gravity wall was embedded ≈ 0.5 m into natural material and was founded on the extremely weathered siltstone. Gabion wall widths were minimized to 70% of the wall height which provided cost savings on materials and reduced the overall construction timeframe.

The gabion wall was constructed within two weeks and was completed on-time in late November 2012.