



Kingfisher Creek Batter Stabilisation Tanager Street, Albany Creek, QLD, Australia

Council: Moreton Bay Regional Council
Contractor: Concrib Pty Ltd

Geoinventions Consulting Services (GCS) were contacted by Concrib Pty Ltd to provide a value engineering design for a bank stabilisation project at Kingfisher Creek, Tanager Street, Albany Creek, Queensland.

Stabilisation was required following a 15.0m wide landslip which occurred on the outer bend on the eastern creek bank. Water flows fastest on the outer bend of the creek and causes erosion/undercutting of the natural creek bank. The natural slope of the creek bank was considered very steep with a slope angle of approximately 30 degrees and continual flooding caused saturation of the ground.

The landslip comprised of a rotational slump which exposed a headscarp approximately 3.0m in height. The exposed material in the headscarp comprised a combination of filling and residual gravelly clays underlain by extremely weathered shale from the Neranleigh-Fernvale beds.

Given the size of the landslip and potential for ongoing erosion and scour, rehabilitation of the site to acceptable levels would be expensive and partly effective. A site inspection was conducted by GCS and Concrib to determine the most cost effective solution for stabilization and to prevent further regression of the slip into the residential allotment above.

GCS adopted a flexible Gabion Reinforced Soil Structure (RSS) which can accommodate any lateral and vertical forces applied to it and is more cost effective than standard mass gravity structures. The Gabion RSS was 36.0m long and varied in heights between 1.5m and 4.5m in height. Mesh reinforcement was attached to the front of the gabions and then laid horizontally within the backfill zone. The reinforced backfill zone was then filled using self compacting gravel which was free draining. In order to achieve the required bearing capacity, foundation improvement was required below the structure in the form of a rock fill foundation placed on the underlying shale. 300mm thick mattresses were installed below the Gabion RSS to prevent any localized and long term scour/erosion at the toe.

The project was completed on-time in September 2013 and has since successfully withstood several flood events.