

Project Info



26 / 06 / 19



CC5™ Bulk Rolls



2,000m²



Vertical and Longitudinal layers



Tutong, Brunei



Undisclosed



CC was used to provide erosion protection to a steep slope near a large electric pylon



Installation of CC as slope protection solution in Brunei

In June 2019, Concrete Canvas® (CC) GCCM* was specified and installed as a slope protection and erosion control solution for a 31m high slope in Tutong, Brunei.

Bore pile and erosion control mat were considered for the project, but were disregarded. Bore pile would have been complicated to install due to the limited space and access on the site, particularly as a large pylon sits on top of the slope, just 11m from the edge. CC was ultimately specified as it would eliminate the requirement for heavy machinery and provide the quickest installation.

The installation conditions were challenging for the ten-person crew. The 31m slope is steep and the soil very hard. As a result, the material had to be deployed from the crest of the slope, with skilled climbers needed to assist in positioning, jointing and fixing the material for health and safety purposes.

Prior to the installation, the slope was profiled by removing vegetation and grading its surface. The preparatory works on the slope also involved building in a step half way down the slope to allow the excavator to effectively access and prepare the top and bottom halves of the slope without unnecessary risk to the operator while also providing additional water management by slowing the flow of surface runoff down the slope.

*Geosynthetic Cementitious Composite Mat



+44 (0) 345 680 1908



info@concretecanvas.com



www.concretecanvas.com



Slope prior to installation and preparatory works



Removal of vegetation from crest of the slope



Slope following preparation



Deploying CC bulk roll for installation



Fixing CC to ground using steel pegs



Screwing overlapped joints



Hydration



Completed upper slope section



CC was also installed around the pylon



Small drainage channel created and lined for runoff management



Lined step part way up slope - 2nd drain for further water management



CC was easily installed around the pylon



Completed slope protection installation

The CC was deployed via spreader beam down the face of the slope, positioned and cut to the required length. The edges of the material were secured within anchor trenches using ground pegs at the crest and toe. Due to the hard nature of the substrate, pre-drilling was required before inserting fixings into the soil. Adjacent layers were overlapped and the lower layer hydrated along the overlap before applying adhesive sealant and finally jointing with screws. Further steel ground pegs were used to fix the material to the substrate down the face of the slope; these were inserted through the overlaps with a minimum of 1m spacing between pegs.

Once installation was complete or at the end of each day, the CC was hydrated using a portable water tank. The project was carried out in two phases, with the top section of the slope lined first, taking around 14 days. While the second phase saw the bottom section of the slope lined in seven days.

The client was satisfied with the performance of the material in terms of the time required to complete the installation, delivery time, ease of installation and the strength and capabilities of the material.

A total of 2000m² of CC5™ were installed by the team of ten, including climbers, in a total of 21 days. The CC material was provided by Concrete Canvas Ltd's official partner in Brunei, [ATH Chevron Sdn Bhd](#).