

Project Info

JUNE 24 24 / 06 / 24

CC CCT1® Bulk Rolls

600m²

V Vertical layers

G Pen y Gwely Reservoir,
Cefn Canol, Oswestry,
Wales

H Contractor: JN Bentley
Consultant: Mott MacDonald

i To provide temporary
slope protection and
convey a 1 in 100 year
flood event.



Hydrating CCT1® using a hose

In June 2024, Concrete Canvas® GCCM* (CC) was used to provide temporary erosion protection for a slope located in Pen y Gwely, Oswestry, Wales.

Originally built in the late 1800's Pen y Gwely reservoir provided vital water supply to the neighbouring town of Oswestry before being decommissioned. As part of their maintenance works of the reservoir, Hafren Dyfrdwy Cyfyngedig (Severn Dee Limited) needed a temporary slope protection solution to protect the downstream slope of the dam if overtopping occurred during the excavation works and to convey a 1 in 100 year flood event.

A 150mm thick temporary concrete chute was considered as a possible solution, but consultants Mott MacDonald have used Concrete Canvas® GCCMs for previous projects and were familiar with Concrete Canvas' ability to be rapidly and easily installed in difficult access areas whilst creating minimal waste. Therefore, they decided that a GCCM would be suitable for this scheme. Considering the erosion protection requirements and 6 week temporary installation period, they decided to specify the CCT1® GCCM, which is a Type I GCCM to Specification Standard ASTM D8364.

*Geosynthetic Cementitious Composite Mat



CCT1® being hydrated using water from the reservoir

Before works on installing the CCT1® material could begin, vegetation on the slope was removed and the soil was regraded to create a uniform surface, with anchor trenches then dug along the perimeter of the installation. Once completed, an excavator with a long reach arm and spreader beam attachment was used to lift the CCT1® Bulk Rolls and deployed them vertically down the slope. Each layer of CCT1® was cut to desired length using basic hand tools and was overlapped by 100mm. To join each of the overlapping layers, stainless steel screws spaced 100mm apart, 30-50mm from the edge were used along the overlap. Galvanised J-pegs were inserted to secure the material to the face of the slope and ensure the CCT1® was in direct contact with the soil, with no voids beneath. To prevent any wind-uplift or water ingress, the CCT1® material secured within pre-excavated anchor trenches using J-pegs placed through each overlap.

Once secured, the CCT1® material was hydrated using a hose and water filtered from the reservoir, with the anchor trenches later backfilled with excavated substrate.

Client Hafren Dyfrdwy Cyfyngedig (Severn Dee Limited) and contractor JN Bentley were pleased with the speed and ease in which CCT1® was installed, with a total of 600m² of CCT1® was installed by a team of 6 from JN Bentley over 2 days.