

Project Info



03 / 02 / 10



CC8™ Bulk Rolls



240m²



Longitudinal layers



Church Village Bypass,
South Wales, UK



Costain



CC8™ used to line a
drainage channel at
the crest of a slope
adjacent to a newly
constructed bypass.



Completed installation in Church Village

In February 2010, Concrete Canvas® GCCM* (CC) was used to line a drainage channel in Church Village, South Wales. The slope was situated along the crest of a slope, and adjacent to a main road. In the previous year, Costain were appointed as the main contractor for the £90m Church Village Bypass scheme.

The scheme involved the construction and introduction of two road bridges, four roundabouts, three community footbridges, two cattle grids and one subway, along with the installation of holding ponds and an extensive surface drainage network. The contractor aimed to use alternative materials, such as recycled aggregates, to minimise the impact on the local ecology and environment. Following approval from the Environment Agency, the Costain specified CC for use within the drainage network.

The original channel was graded and vegetation removed prior to installation. The bulk rolls were then delivered to site and lifted on a spreader beam using plant equipment before being unrolled and laid within the channel. The installation was carried out in three parts, with the first length of material laid along the channel's base and fixed to the substrate using ground pegs. The material was then laid either side of the first length, overlapping this first layer by 100mm. The overlaps were then jointed using screws at approximately 200mm intervals, however the overlaps were not sealed in order to allow for natural weep paths. The edges of these layers were then fixed to the substrate within anchor trenches on each shoulder of the channel, which were later backfilled following hydration. A total of 240m² of CC8™ was installed in the installation.

*Geosynthetic Cementitious Composite Mat





Site prior to works - channel is at close proximity to a main road



Deploying CC



Cutting CC to required length using hand tools



CC was laid in three longitudinal sections



CC edges were captured in anchor trenches following installation



Anchor trenches were backfilled to prevent ingress



Termination of channel into stream



Completed installation



Install was re-visited in winter to find out how well the material was performing in cold, frosty conditions

“The Church Village Bypass scheme presented our team with a unique challenge. The location and nature of the works required the sensitive use of appropriate construction materials in order to minimise the impact on the local environment. Concrete Canvas provided a means of rapidly installing a low carbon concrete ditch whilst maintaining the natural aesthetic of the overall scheme.”

**Daniel Powrie CEng MICE,
Project Manager,
Costain Group**

9 YEARS AFTER INSTALLATION



Despite significant weed and vegetation growth around the channel, the CC is performing as expected and providing weed suppression within the channel itself



Downstream view of the channel



Algae and moss growth established on the fibrous top surface of the CC material