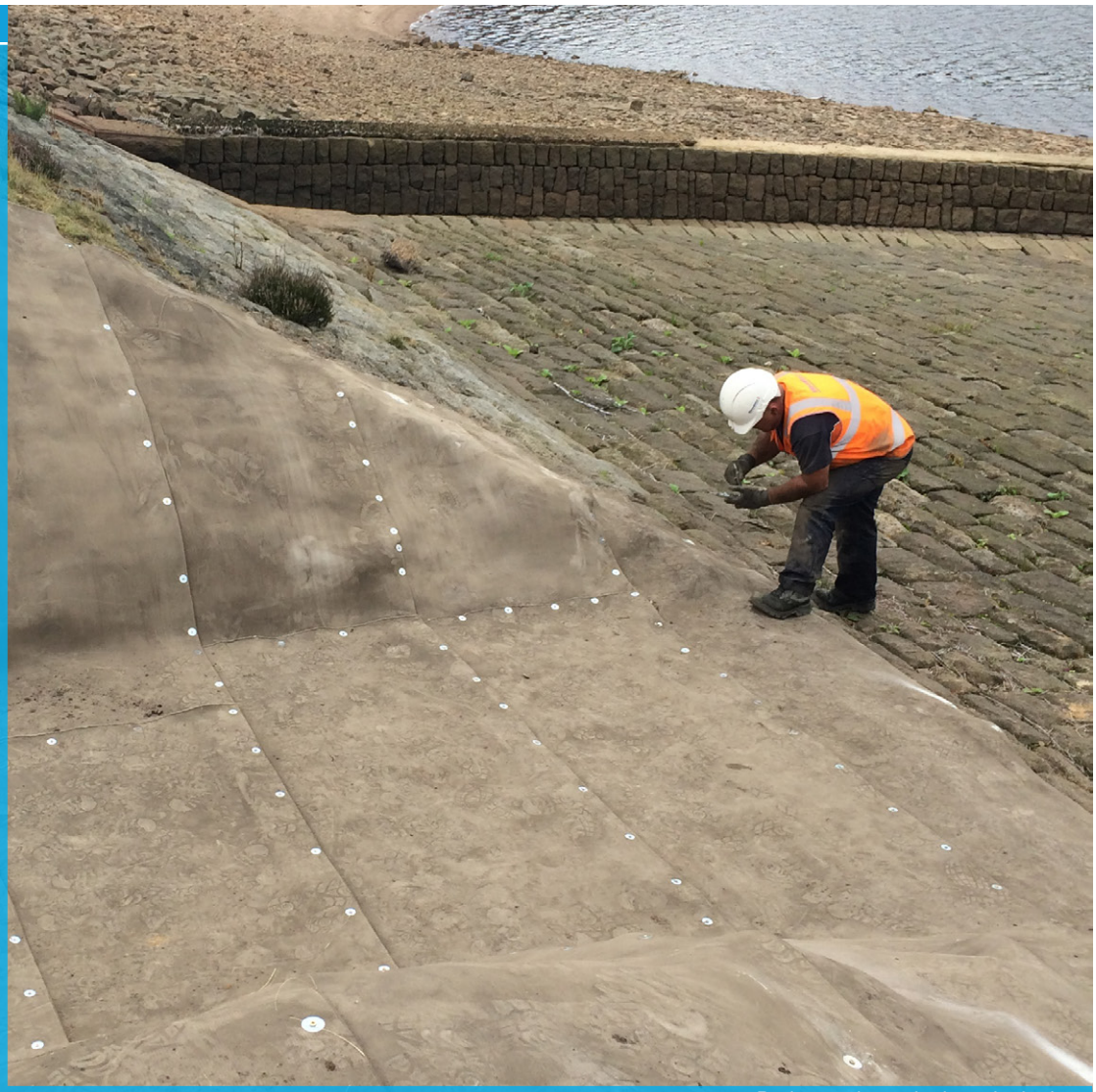
# CONCRETE CANVAS®

# CHANNEL LINING

## Project Info

- 10 / 08 / 16
- CC8™ Batched Rolls
- 150m²
- Transverse layers
- Widdop Reservoir, Hebden Bridge, Yorkshire, UK
- J N Bentley / Mott MacDonald Bentley
- CC8™ was used to provide protection to a drainage channel at a reservoir in Yorkshire



*Drainage channel prior to hydration.*

In August 2014, Concrete Canvas® GCCM* (CC) was used to line a drainage channel at Widdop Reservoir, Yorkshire, UK. CC provided cost savings compared to conventional concrete solutions given the speed of installation in a remote, limited access location. The works were carried out by Contractors J N Bentley on behalf of the consultant Mott MacDonald Bentley for Yorkshire Water.

The reservoir was drawn down, but the channel that normally discharged into the spillway also needed attention. It was decided that a temporary channel would be constructed between the by-wash channel and the reservoir itself, before constructing a stank to divert the flows.

The original temporary works design called for the channel to be lined with 250mm thick concrete with a layer of reinforcing mesh. With plant access to the location difficult, CC was suggested as an alternative. Despite costing a little more in actual materials, using Concrete Canvas significantly reduced the time required on site, and the plant, labour and staff costs.

The install took place on a clear and sunny day. In order to dig out the channel, a temporary flume was built to enable a 360° digger to access the other side of the drainage channel. The wall of the channel was left in place while the channel was excavated. The wall was removed and the stones were marked and kept ready to re-build once the repair and maintenance work further down the channel had been completed.

*Geosynthetic Cementitious Composite Mat

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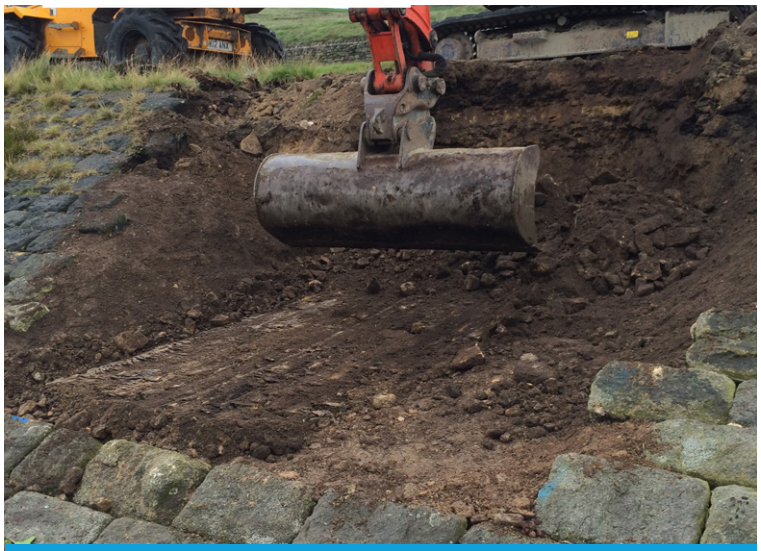
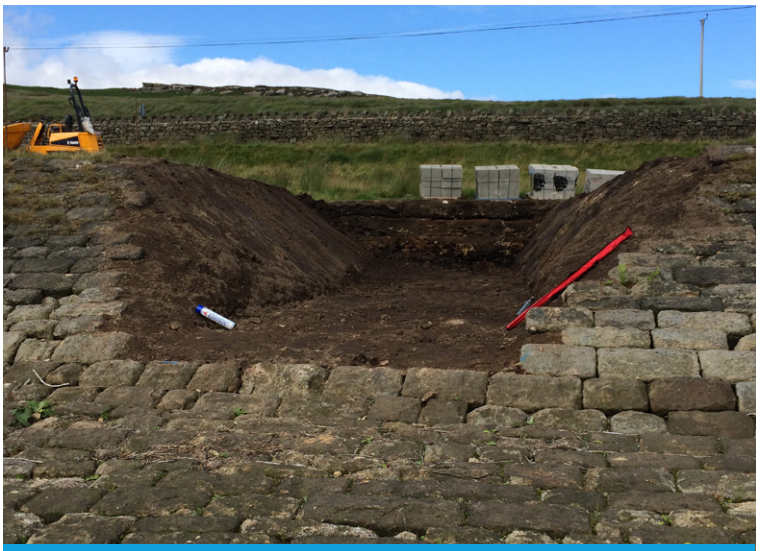


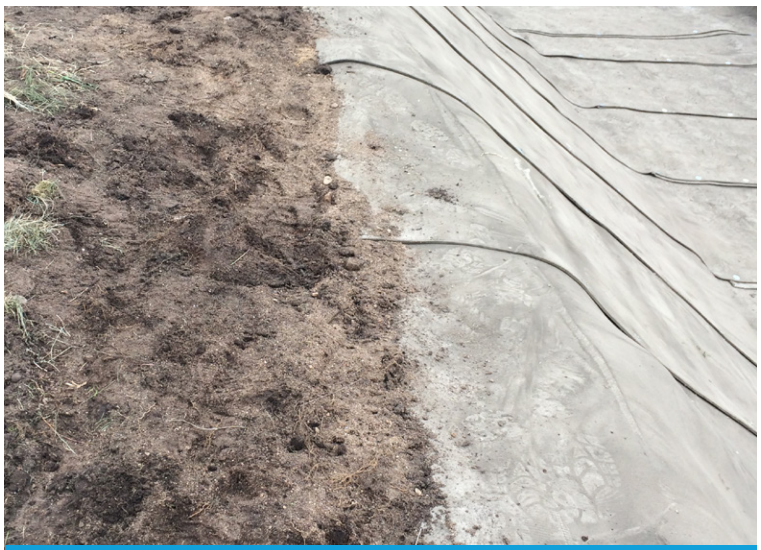
*Site being cleared.*



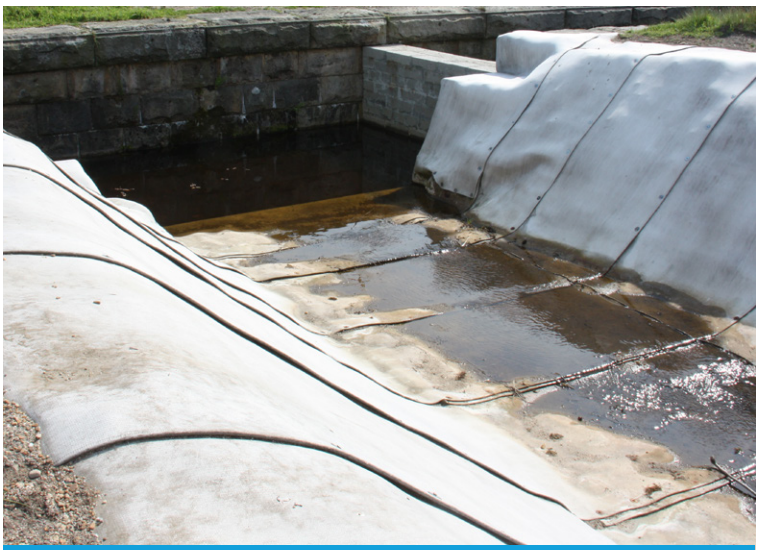
*The drainage channel after being excavated.*

*The CC startind to be fitted.*

*Small penny washers were also used.*



*The CC was back filled into an anchor trench.*



*The drainage channel after hydration.*

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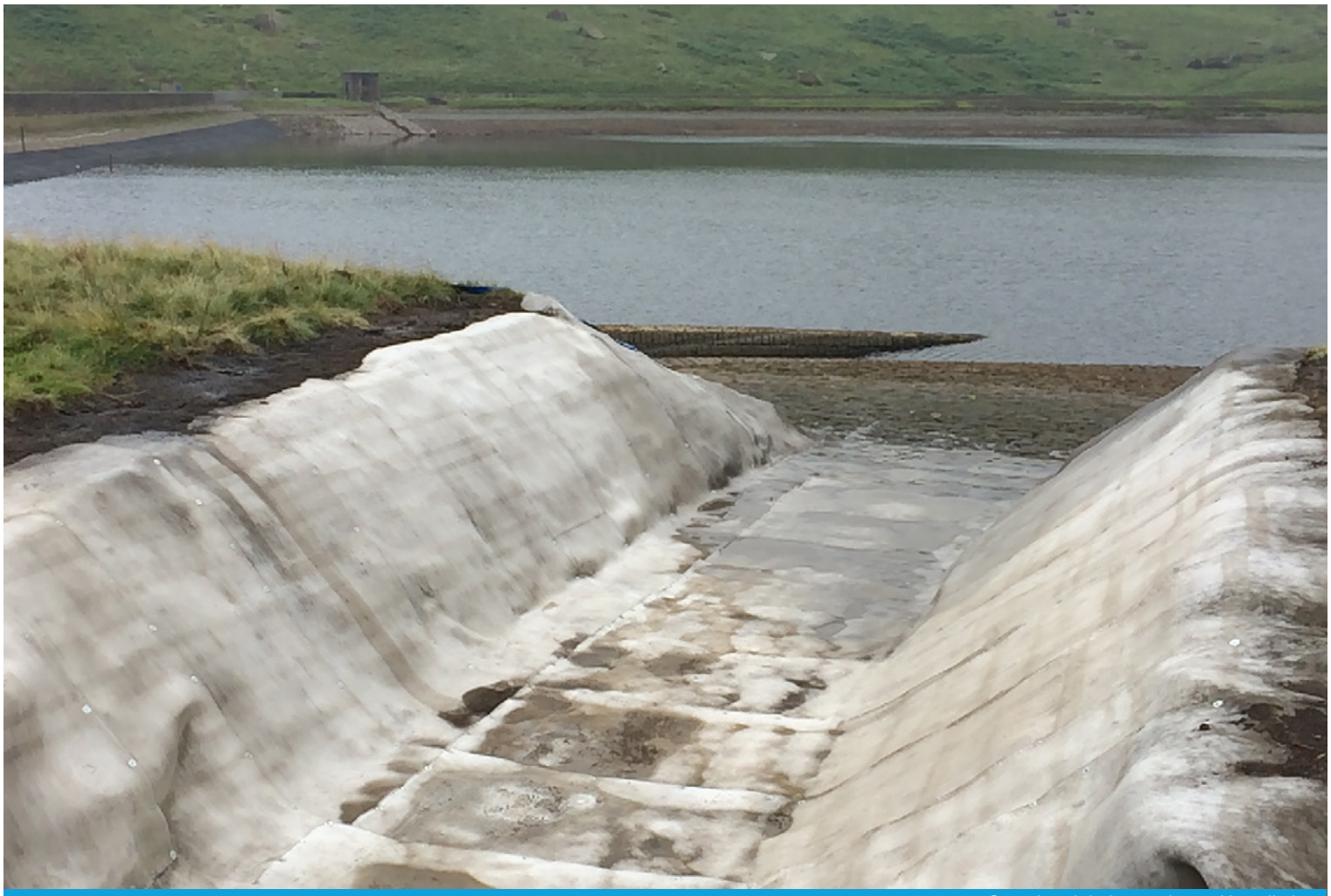

*Completed drainage channel installation.*

Nails were shot-fired into the blockwork of the existing reservoir wall. In the newly dug channel the joints were screwed together, with small penny washers also being used. No anchor pegs were used, however the CC was back filled into an anchor trench. A sump pump was used from the drainage channel above the temporary dam to hydrate the sides and bottom.

150m$^2$ of CC8$^{TM}$ was installed and hydrated in 1 day, with a 67% reduction in labour costs, utilising only 28% of staff that would ordinarily be required using a conventional alternative.

Overall the contractor was suitably impressed with the speed of installation when compared to poured concrete which was the only other method considered for this project. With no need for large equipment on site, this meant additional approvals from Yorkshire Water was not required, which helped with the speed of the project.

***"The product worked well and is especially worth considering for temporary works applications in hard to reach locations as an alternative to in-situ concrete."***

Tom Lewis
**Operations Manager**
**J N Bentley**



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