

NEW WAREHOUSE EXTENSION AT ALLAN WATER BLACKFORD, PERTSHIRE & KINROSS, UNITED KINGDOM

Channelling Works

Problem

Due to successful sales of bottled water in the UK, Highland Spring Water Ltd, wanted to expand capacity at its bottling plant, based in Blackford, Perthshire.

With water drawn from the Ochil Hills, Highland Spring Water Ltd was the first natural mineral water company in the UK to have its catchment area granted 'Organic Status' by the Soil Association. Therefore, the protection of this pristine area is essential for the ongoing success of the company.

The construction of the new facility would require the diversion of the Allan Water which flowed across the site. Permission to divert the water course required that the ecological value was improved or, at a minimum, maintained.

The site is made up of poor soil types, including peat. This would make any new channel profile vulnerable to rapid erosion. Furthermore, the channel had to maintain a residual flow, as well as have the capacity for storm flows when required, i.e. a two stage channel.

Solution

Maccaferri Ltd were approached by the project consultant for assistance in developing the channel scheme.

To maintain the two-stage channel shape, which was to be constructed from the wet site soils, MacMat® R was proposed. This 3-dimensional open matrix polypropylene geomat is reinforced by a corrosion protected wire mesh. This enables MacMat® R to offer soil erosion control and maintain the channel shape with one material. Being 95% voids, MacMat® R is 'plant friendly' allowing easy root penetration. The matrix also accretes sediments carried by the channel flow.

The project requirement to maintain a constant 'base-flow' in the channel over the permeable peat was achieved by lining the entire channel with an impermeable geo composite clay liner, Macline GCL. Although only 5mm thick, it is equivalent to 1m thickness of 'puddle clay'. Macline GCL does not require special labour to install as all joints are self-sealing. Variations in channel width were introduced using boulders and woven wattles to create the geomorphic diversity normally associated with this type of watercourse.

Client: HIGHLAND SPRING WATER

Designer / Consultant: Kiloh Associates

Contractor: Torith Ltd

Products used (Qty.)

Date of construction: 05/2000 - 07/2000

[Google Maps](#)

[Google Earth](#)



The new two stage channel during construction



Two stage channel immediately after construction



Diverted water course around new warehouse & car park



2 Years post construction showing 2 stage channel



Watercress & other good ecology indicators established