

ESKMILLS DEVELOPMENT RIVER WALL PENICUIK, MIDLOTHIAN, UNITED KINGDOM

Channelling Works

Problem

In 2001 Maccaferri Ltd. was approached by Applecross Developments, to assist with the design of a 348m long riverbank retention system to support the main access road through the proposed prestigious housing development site.

The project, located on the River Esk near Penicuik, required a near vertical retaining wall along one bank of the river to provide the required site footprint to accommodate the proposed housing development and access road. The existing former mill site was supported by a combination of concrete, brick and masonry walls that were all in a state of disrepair and deemed mostly unsuitable for incorporation within the proposed development.

Solution

Given the importance of the riverside retaining wall to the project as a whole, both in terms of programme and quality, Maccaferri Construction Ltd was appointed as the Specialist Retaining Wall Contractors.

The proposed Gabion Terramesh® structure was designed by Maccaferri Ltd and the design was accepted by the Local Authority, who will ultimately adopt the main site access road on completion. The design required the wall to be 348m long and to vary in height between 1.5 and an impressive 8m high.

BBA Certified, Maccaferri Gabion Terramesh®, consists of a one-piece soil reinforcement geogrid with an integral gabion fascia unit. This patented system is made from Maccaferri's renowned double twisted steel wire mesh. The mesh is heavily galvanised with an additional tough PVC sheathing to provide a long design life. Structural backfill is compacted upon the geogrid elements reinforcing it.

Maccaferri double twist mesh structures can accommodate larger differential settlement than most retaining structures, useful in this river wall application.

Client: APPLECROSS DEVELOPMENTS

Designer / Consultant: Harley Haddow / Maccaferri Ltd

Contractor: Raynesway Construction

Products used (Qty.)

Date of construction: 11/2005 - 02/2006

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Existing masonry wall before construction



Downstream view of prepared slope



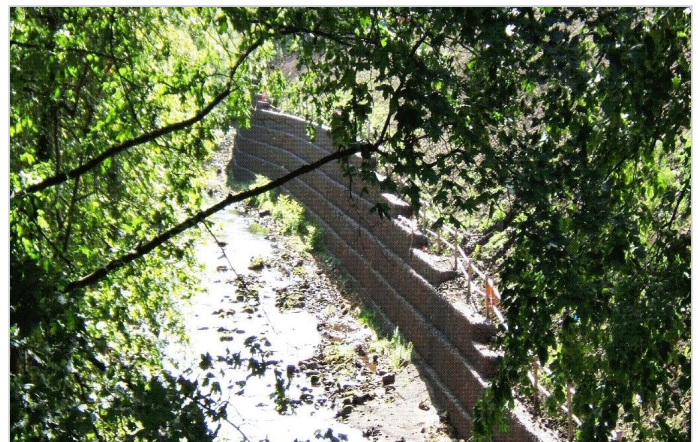
Upstream view of Terramesh wall during construction



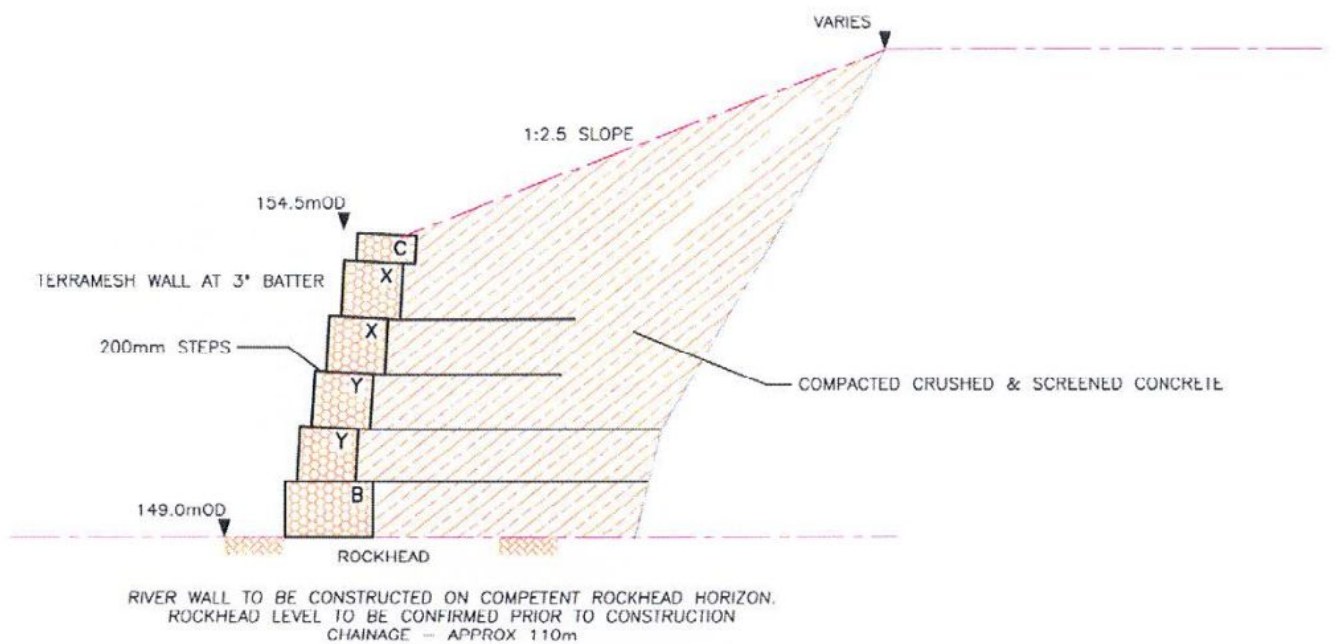
First course of Terramesh during construction



Post-construction restored bank protection



Upstream view of completed Terramesh structure



Typical section drawing