

BOSCASTLE FLOOD DEFENCES
BOSCASTLE, CORNWALL, UNITED KINGDOM

Longitudinal Protection

Problem

Engineers Halcrow Group Ltd was set a difficult challenge by their client, The Environment Agency. This was the provision of robust flood protection measures for the pretty village of Boscastle, without affecting the soft, rural aspect of an area of Outstanding Natural Beauty. The village had already made national news in 2004, during extreme and extensive flooding, which now required mitigation.

To give the village protection against extreme conditions but without affecting the rural aspect, we needed a solution that gave us a soft, river-bank appearance but with a robust, hard-engineered core," added Green.

Halcrow knew that during storm events, the performance of erosion control systems deteriorates and that vegetation cannot be relied upon to provide long-term erosion protection. Halcrow therefore, with the assistance of Maccaferri, designed a system that would offer the required erosion protection for the entire design storm duration, with or without vegetation. Under long storm durations, vegetation is ripped out from erosion protection systems, leaving the erosion protection alone.

Solution

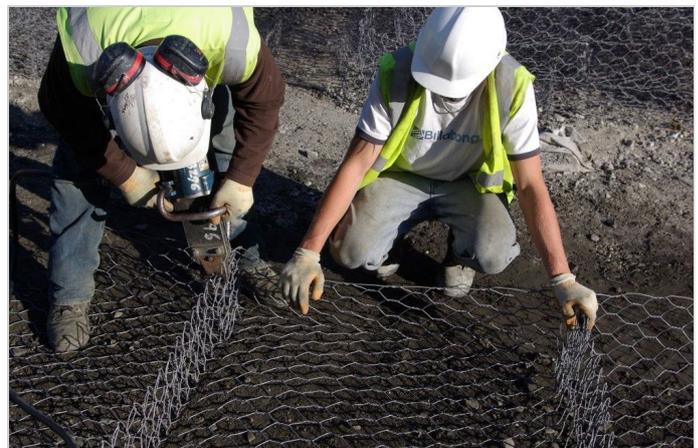
To achieve this solution, Halcrow specified a combination of Reno Mattresses and MacMat-R from Maccaferri.

Over 7000 sq metres of Maccaferri wire mesh, "Reno Mattress" units and MacMat-R reinforced geomats are being used to reinforce and protect a vulnerable embankment between the River Valency and a newly raised and extended car park close to the village. The car park will effectively form a wide, sacrificial flood plain, should extreme conditions similar to those of August 16th 2004 be repeated. Reno Mattresses are large flat wire cages, similar to gabions, 6m x 2m x 0.23m, lined with Bidim filter fabric and filled with site won fill material.

Reno units were also capped with MacMat-R, a three dimensional geomat made of polypropylene monofilaments with an integrated double twist wire mesh reinforcement.

Client: THE ENVIRONMENT AGENCY**Designer / Consultant:** Harlcrow Group Ltd**Contractor:** Carillion**Products used (Qty.)****Date of construction:** 10/2006 - 03/2007[Google Maps](#)[Google Earth](#)

Dramatic floods in Boscastle, August 2004



Construction of the Reno Mattresses



Adding the Bidim filter fabric lining to the Reno Mattresses



Filling the Reno Mattresses with site won material



MacMat-R lids, prior to being covered in top soil