

Project: Kirikiriroa Stream Remedial Works
Date: November – December 2014
Client: Hamilton City Council
Location: River Rd, Hamilton



Reno Mattress

The Kirikiriroa Stream flows through eastern Hamilton passing under River Road Bridge before entering the Waikato River upstream of Wairere Drive Bridge. During periods of low water levels in the Waikato River the flow velocity in the Kirikiriroa Stream increases resulting in scour to the riverbed and riverbanks. This has become more pronounced along a stretch of riverbank downstream of the River Road Bridge. As a result something needed to be done to stabilise the riverbanks including the area directly under the bridge. The steep slope angle of the riverbank made it impracticable to establish and retain vegetation.

Reno Mattresses are permeable and permit the natural movement and filtration of groundwater to prevent pore pressure development that could contribute to bank instability. **Reno Mattresses** can also trap sediments to promote natural plant growth making them well suited for stabilising the riverbanks at this site.

The extent of the works required the construction of over 100 Reno mattresses laid at a 45 degree slope angle. This proved to be a challenge as it is difficult to have the rock stay in place when filling each **Reno Mattress**. The contractor, Downer developed a method of using warratahs to hold the **Reno Mattresses** in place while being filled from a suspended skip.

The end of the 130m structure was terminated using 600mm diameter boulders with a layer of **bidim**[®] **A39** geotextile selected as a filtration/separation layer. A toe was constructed at the base of the **Reno Mattress** using 1.0m diameter boulders. **Bidim**[®] **A29** geotextile was used as a filtration layer under the **Reno Mattresses**.



Below River Road Bridge



Middle section of Reno Mattresses



End of 130m of Reno Mattress protection

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