

## TERRAQUA NICOSPAN CASE STUDY

Client:	Bassetlaw District Council
Project:	Canch Park Environmental Improvement Scheme - Dredging & Vegetated Ledges
Contractor:	Land & Water Services Ltd
Site Agent:	Steve Copleston
Material Supplier:	Terraqua Environmental Solutions
Contract Value:	£59 K

As part of “The Canch Environmental Improvement Scheme” Land & Water Services were contracted to carry out dredging & environmental enhancement works on the river Ryton running through the Canch park, Priorswell road, Worksop, Nottinghamshire for Bassetlaw district council.

The enhancement works included dredging 335 metres of river bed to a depth of 1.2M and removing 400m<sup>3</sup> of silts, the instruction from the client was to retain and use all the dredged silts on site as part of a solution to provide new vegetated ledges, which run the full length down one



side of the river bank.

“Nicospan” was the chosen product to install at the water’s edge; it created the vertical revetment required. The products flexibility helped the contractor to create the required ledge shapes, which the client and designers wished for.

Nicospan provides a high-quality and economical erosion control system and is designed specifically for protecting vertical banks. Easily installed, Nicospan is especially useful where access to the bank is limited and is an ideal low cost bank protection system that allows the use of dredged silts as fill.

Once the ledges had been formed 2M x 1M Coir fibre pallets were installed to form part of a bio-engineering system. A range of high quality native shade tolerant plants were pre-selected by the client and pre-established into the coir pallets and grown over a 5 month period in our own nurseries. The coir pallets provide immediate erosion protection to the ledges and will prevent any soil loss, in case of any early floods. Terraqua's products enabled LAWS to deliver a practical solution that complimented the natural environment, adding biodiversity and help improve the water quality.

Coir pallets are made from coir fibre which is a sustainable waste product from the husk of coconut shells. They provide an excellent technique for establishing native marginal vegetation around lakes, ponds and river banks.



The scheme is lined out and the Nicospan installation begins, 2.4M long FSC posts are put into the pockets of the Nicospan and driven into the silt using a hammer attachment on the excavator. As part of the scheme overhanging tree branches were trimmed back to help reduce the organic matter, leaves, branches from dropping into the river system.



Nicospan is installed to form the required ledge shapes and to create the vertical faced revetment. The posts are cut down to the correct levels. A back line of 1.8m long x 100mmØ FSC posts are installed 1.5m behind the front posts, the two sets of posts are tied together, using a galvanised steel wire, to bring strength and stability to the system.

Tencate's Geolon PP15, a medium-strength woven geotextile is then installed at the rear of the Nicospan, the geotextile is folded over and placed along the edge of the front posts and stapled down with 40mm x 4mm galv steel staples, giving a neat front edge finish.. The geotextile acts as a separator and holds the silts in place; it is installed across the back of the system and slightly up the back wall.



The scheme begins to take shape as the Nicospan is quickly installed along the length of the bank. The ledge shapes begin to form as work the continued in good weather.



Dredged silts are used to fill in behind the Nicospan system and create the foundation for the ledges. The fertile silts will provide an excellent growing medium for the soon to be laid pre-planted coir pallets. The established root systems of the plants, within the coir pallets, will soon grow down into the soils taking out excess moisture and quickly stabilise the soil ledges.



The river has now been fully dredged and all the silts have been retained on site and used within the Nicospan system which is now ready to receive the pre-planted coir pallets.



The 2M x 1M pre-planted coir pallets arrive on site and are quickly installed onto the dredged silts and pegged down with FSC timber stakes, as the final stage to formulate the vegetated ledges.



Some coir pallets are cut on site to suite the different shapes of the ledges.



The coir pallets are fully installed into the Nicospan system, in time a fully vegetated edge will develop, the ledges will provide a natural habitat system for the local wildlife. The system gives a long lasting, aesthetic and environmental result.

\*FSC - Forest Stewardship Council.