CASE STUDY

Project: Pataua Bay Coastal Protection
Date: November 2011
Client: John Morgan
Location: Pataua Bay, Northland

ELCOROCK® Containers

The combination of a movement in the offshore sandbar and a king tide resulted in erosion of the toe of the dune creating a large slip that came within 2m of the corner of this coastal dwelling. The dwelling is located on a sand spit bounded by the ocean to the east and an estuary to the south. The owner of the property was concerned that further erosion would undermine the dwelling foundation and employed Richardson Stevens Consultants in Whangarei to look at a solution that would prevent further loss of the slope.

ELCOROCK® was determined to be the best product to provide the most natural and practicable solution for rapid mobilisation and construction. The use of specialist geosynthetics for hydraulic applications has become increasingly popular practice in the past decade, especially as a replacement to hard rock armour systems. Geofabrics offers ELCOROCK®, a specialist non-woven geotextile container manufactured from UV-stabilised polymeric fibres. The flexibility, robustness and adaptability of ELCOROCK® allows it to be filled with wide range of fill types to form a flexible solution in coastal, river or other dynamic applications where environmental impact must be minimised.

The work was carried out under emergency works which allowed the contractor to use onsite sands to fill the ELCOROCK® containers. The fill was taken from the end of the spit on the lagoon side and consisted of fine to slightly coarse sand. Geofabrics were onsite to help with the set up, training and assisted in the filling operation for the initial couple of days. Geofabrics has a history of providing onsite assistance and support and it is this commitment which was appreciated by the contractor, client and Engineer.

The installation was of great interest to the local community and an article appeared in Issue No 64 of “Bridging the gap” a local publication for Pataua North & South. Many positive comments included the natural appearance of the containers once they trap sand in the outer geotextile layer and the fact the structure will be beach friendly compared to traditional rock armour, which is awkward to walk across and becomes dangerous surface for beach users.
How ELCOROCK® works.

The ELCOROCK® shoreline protection system consists of sand-filled geotextile containers which form a stabilising, defensive barrier in coastal areas. The system provides enhanced public amenity, allowing greater public access at reduced risk for the asset owner.

A world-leader in geosynthetic erosion protection, the ELCOROCK® system effectively combats erosive forces in coastal regions and inland waterways. The robust containers are manufactured in Australia using a nonwoven geotextile with enhanced filtration and extreme UV resistance.

After 20 years of use in the harsh Australian environment, the system’s resilience and strength has been proven many times over. ELCOROCK® structures have withstood UV damage, coastal abrasion, vandalism and even Category 5 cyclones. The system is supported by extensive R&D and world class design modelling.

ELCOROCK® structures provide a cost-effective alternative to traditional coastal structures made from concrete, rock armour, steel and timber. The system also enhances the environment by providing a stable base for marine growth.

Geofabrics supports the ELCOROCK® system with ongoing R&D, installation systems and design support.