

# Case Study

Project: **Stockton Beach S.L.S.C**  
 Location: **Newcastle, NSW, Australia**  
 Client: **City of Newcastle**  
 Contractor: **City of Newcastle**  
 Consultant: **WBM Oceanics**  
 Date: **1996 - 2007**

UPDATE  
2007



## ELCOROCK®

In 1996, the Newcastle City Council instigated temporary erosion protection to the Stockton Surf Club. Severe erosion to the beachfront had endangered the club building and was at risk of collapse. Geofabrics offered a soft solution to the problem and provided ELCOROCK® sand containers that resulted in this being one of the first engineered sand container structures constructed to protect oceanfront properties.

In the recent severe weather conditions in Newcastle and the Hunter Valley on 8 June 2007, dubbed “Black Friday” in the media, swells up to 17.5 metres were recorded and caused major coastal erosion of beaches and major flooding. The conditions were severe enough for the Pasher Bulker, a bulk coal carrier, waiting offshore to be loaded, to run aground onto the reef off Nobbys Beach.

Once again, the ELCOROCK® sand containers proved effective in preventing any damage to the Stockton Surf Club. Despite sand being eroded from the beach and exposing the sand containers, the structure, being flexible, remained intact and in fact there were no visible signs of displacement. Sections of beach on either side of the Club have been subjected to ongoing erosion by wind and wave action since 1996 more than eleven years ago.

The original structure consisted of 2 tonne ELCOROCK® sand containers laid in a stretcher bond formation to ensure maximum interlock at 1.5H:1V slope. A self healing “Dutch Toe” was incorporated into the design to prevent scouring during storm events. In addition heavy duty UV stabilised non woven staple fibre needle-punched ELCOMAX® 900R was used between the sand and sand containers.

In contrast to the sand containers, rock armour protection was constructed approximately five hundred metres north of the Surf Club by Council. However, as a result of the latest wave action and loss of sand, rock has been displaced and rendered the beach inaccessible to the public. In addition, to being unsightly, the cost to remediate the rock armour is an expensive and time consuming operation.



*ELCOROCK® exposed after severe sea swells*

Despite the ELCOROCK® structure initially being of a temporary nature, the sand containers have withstood numerous storm events. The soft solution has proven to be extremely versatile and is popular with the local community.

As a result additional containers are now proposed adjacent to the surf club under the proposed Newcastle Coastal Management Plan.



*June 2007 – Pasher Bulker run aground*



*Displaced rock armour protection*

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