



## CASE STUDY:

# WATERMAIN PROTECTION

GRASSTREE/CAMPWIN BEACH, MACKAY, QLD  
SEPTEMBER 2017

CLIENT: MACKAY REGIONAL COUNCIL  
CONTRACTOR: HABER EXCAVATIONS

## ELCOROCK COASTAL PROTECTION SYSTEM

The ELCOROCK system consists of sand-filled geotextile containers built to form a stabilising, defensive barrier against coastal erosion.

The geotextile containers are made from Texcel, a durable staple fibre geotextile. It's a versatile system ranging from hand-filled 40 kg containers to hydraulically-filled 300 tonne mega-sand containers and tubes.

The ELCOROCK shoreline protection system has been proven through over 20 years of use in harsh coastal environments. These structures have withstood coastal abrasion, vandalism, UV damage and even Category 5 cyclones.

The ELCOROCK system is supported by extensive research and development and superior design support. It provides a cost-effective alternative to traditional coastal erosion protection systems made from concrete, rock armour, steel or timber.

Following Category 4 Cyclone Debbie making landfall near Airlie Beach in North Queensland in March 2017 the only fresh water service conduit for Sarina residents of Campwin Beach was left exposed and vulnerable.

The pipe ran under the mouth of an Estuary then emerged on the beach near the hamlet of Campwin Beach. The abnormal tidal conditions triggered by Cyclone Debbie severely under scoured the pipe leaving it elevated some 1-2 metres above the beach making it a tempting target for vandals.

Mackay Regional Council contacted Geofabrics Townsville for a solution and we suggested encasing and supporting the pipe in an Elcorock tunnel.

Coastal engineers were engaged to ratify the concept and provide a formal certified design to Council. 2.5 m<sup>3</sup> Elcorock sand containers were the obvious choice. The watermain conduit would be supported with a bedding of indurated material wrapped in a layer of Texcel 600R and encased in Elcorock containers.

Haber Excavations were the chosen contractor who utilised several excavators to fill and place the containers. Geofabric's staff were in attendance in the initial stages to support the contractor. Extreme care had to be taken when placing the containers alongside the conduit to ensure it wasn't damaged as the watermain remained live and is the only source of water to the Campwin Beach community. The project consumed 60 x 2.5 m<sup>3</sup> bags and 60 m<sup>2</sup> of Texcel 1200R.

It was completed in five working days and was delivered in full, on time and under budget. We will monitor the installation over the coming cyclone season, however the basic concept appears sound and may be useful elsewhere in similar circumstances.





**Taking care**

The contractor on the project took great care installing the Elcorock containers to ensure the watermain was not damaged



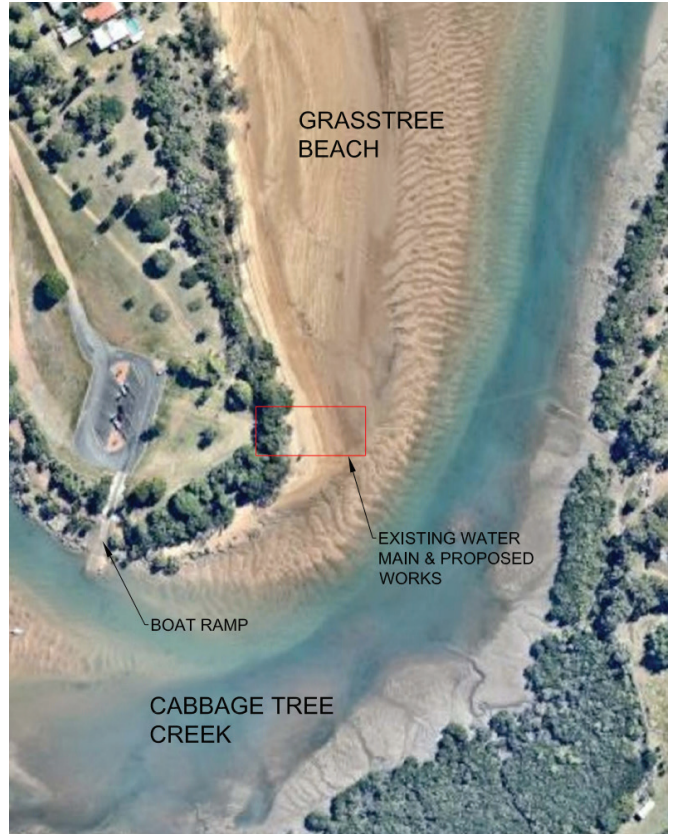
**Prone to vandalism**

In some sections the watermain was 1 m above the beach, making a tempting target for vandals and accidental damage



**After**

Following installation of the Elcorock solution the watermain is no longer visible



**Watermain location**