

COASTCARE HBS SYSTEM

Soft Engineering Coastal Solutions

Hydrodynamic Beach Stabilisation

Background

Soft engineering solutions for coastal protection such as Beach Management System (BMS) and Pressure Equalisation Modules (PEM) installed in the beach matrix have been known for a while.

However some disadvantages inherent to both systems has recently led to the development of a system based on Hydrodynamic Beach Stabilisation (HDB). HDB is a new approach towards an enhanced and cost-effective method to combat beach erosion without disturbing the natural aesthetic beauty of beaches and the environment in general.

The BMS system requires comprehensive engineering work with large wells, energy consuming pumps and a complex pipe system regulated by valves. The theory is to drain the intruding seawater from the beach matrix. The costs of implementation, operation and maintenance are known to be very high.

The PEM system comprises vertical steel header pipes extended with water abstraction screens of plastic, placed in a matrix along the coastline and in the swash zone. The steel header pipes protrude above the beach surface and can pose a safety hazard to beach-walkers and bathers. According to SIC, who market the PEM system, the filters equalise the pressure of the ground freshwater basin to increase circulation of seawater in the coastal profile.

However scepticism of the theory behind the PEM system and heavy engineering of the BMS system led our engineering department to use time and effort into the development of the CoastCare System (Hydrodynamic Beach Stabilisation system).

The CoastCare System is designed as a discrete low cost simple technology solution to enhance the infiltration / ex-filtration rate of the beach face to increase sediment entrapment and retention.