



## *A Case of ACETube® Application to Beach Nourishment in UAE*

*Location: Fujarah, UAE*

*Application: Beach Nourishment*

### **Problem :**

A strong tropical cyclone Gonu hit the Fujarah coast in 2007, making a great havoc on the Emirates and causing serious erosion for several kilometers. Although the sand movement drifting from south toward north could help the beach nourishment, it is unlikely to recover in a short time; it's not able to prevent cyclones from attacking again to worsen the erosion in this area.

Initially, the Le Meridien Hotel adopted the traditional method, riprap groin, to protect the beach in the northern and southern shore. However, without a solid foundation base, the groin failed to function and it sank due to the repeated wave actions and yearly unexpected cyclone attacks.



### **Solution :**

In order to make less impact on the tourist attractions and environmental aesthetics, the owner of the Le Meridien Hotel appealed to an innovative method, that is to reconstruct the groin and nourish the beach. The ACE engineering team designed a structure with the usage of ACETube® in an anti U shape, forming a seaward breakwater stretching out for 200 meters long on the southern and the northern side. This structure was a vertical submerged breakwater creating a 228m x 225m safe zone to reduce the wave energy and nourish the beach.

A variety of types of ACETube® were designed by the ACE engineering team to conform to the undulating terrain: from 8.6m in circumference to 17.2m, from 52m in length to 77m; these ACETube® were pumped and filled up with the sand in situ to create a cofferdam. As it shows in the photo, using the ACETube® is the wisest and best choice to reduce the impact on the environment, which is exactly the owner's demand. Even the turtle is happy in its habitat here!