

## Application Story

**PROJECT** NAVIDUCT, THE NETHERLANDS  
**Product** Geotube® Marine Structures Technology  
**Application** Island Creation

**Location** Naviduct, The Netherlands  
**Installation** 1999-2000

### The Challenge:

A new construction project at the Krabbersgat Lock at Enkhuizen involved a dredged material channel, a double ship lock, and a "Naviduct". The "Naviduct" was described as a combination of an aqueduct and a lock. Another component of the project involved the Naviduct dredged silt material disposal area that was located near Makkam on the IJsselmeer (shallow lake).

### The Solution:

Geotube® island creation technology was used to form the perimeter for the dredge spoil area during the lock construction [photo 1]. The banana-shaped perimeter was constructed by filling two parallel Geotube® units with sand [photo 2]. This involved a total of 7,500 linear meters of Geotube® containers with a 3.92 meter diameter and 13.7 meter circumference. Once the units were filled, a woven polypropylene fabric was used to protect the Geotube® containers from the riprap (limestone rock) used to cover the outside face and top of the perimeter structure [photo 3]. The surplus silt (roughly 2 million cubic meters) resulting from the digging of the two lock chambers was then deposited into the spoil area.

### The Results:

The dredged material disposal site is functioning according to design [photo 4]. The area is now forming as a green space [photo 5].

The new dredged material disposal area was designed to accommodate the new dredge work and ongoing maintenance dredged material from the navigation channels for many decades. Though its primary purpose was the containment of the materials, once the disposal site is filled to the desired elevation, this area will be developed as a shipping port.



### Contact Information:

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