

PROJECT SHEET

PORT 2000

CREATION OF A BIRD ISLAND SOUTH OF THE LE HAVRE PORT EXTENSION

Increasing or compensating nature is one of the challenges in modern infrastructural projects

INTRODUCTION

Under the name "Port 2000" the Port Autonome du Havre is realizing a major port extension which includes the creation of a new container terminal and a number of projects related herewith.

Part of the environmental compensation measures for the Port 2000 project was the creation of "Ilot Reposoir", an island that will serve as a bird habitat.

THE ISLAND

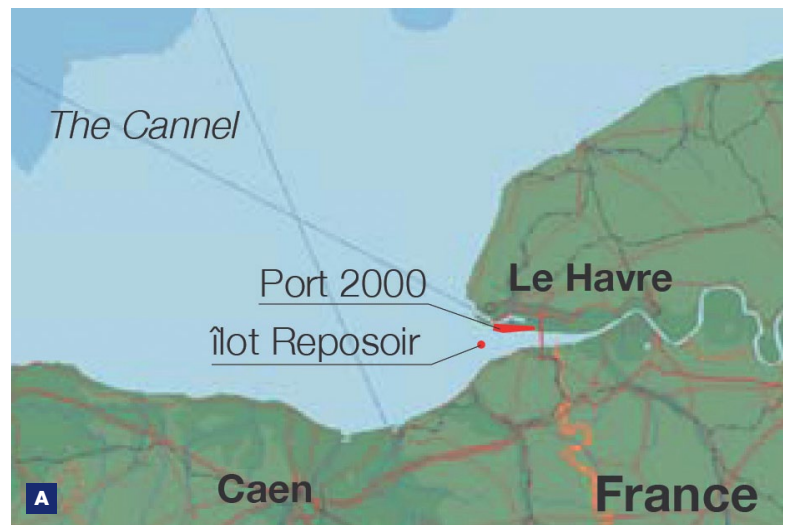
Ilot Reposoir was constructed south of the Le Havre port extension, on a sandbank called "Banc du Ratier" which is situated on the opposite side of the river Seine and the access channel to the ports of Honfleur and Rouen.

The island has a complex geometry, but in general it can be described as an oval with an opening in the southern side. In size it measures 200 m from the north to the south and 325 m from the east to the west.

Various requirements were imposed on the design. For example, the estuary currents should not be affected, the island had to be strong enough to withstand storms, and in particular the island had to meet the needs of its bird populations, especially those of the tern, which is an endangered species.

FEATURES

Client	Port Autonome du Havre
Location	Le Havre, France
Period	September 2004 - May 2005
Contractor	Atlantique Dragage



A Location map

B Construction of the island and general layout island



B

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DREDGING WORKS

The execution of the works started in September 2004 after a 2 months' preparation period. To create the island a diversity of floating equipment was used consisting of:

- > Side-stone-dumper Arca
- > TSHD Sospan Dau
- > Self-propelled splitbarge Long Sand
- > Multicat Schorpioen.

The latter was used for the transport of the dry equipment to the island. The dry equipment included a wheelloader, 2 excavators and 2 bulldozers.

The first phase of the project consisted of constructing a dike of armourstone along the future outline of the island with the Arca.

The island was reclaimed with dredged material (sand and gravel) from the approach channel to Le Havre port. This approach channel had to be widened as part of the port extension program. Because of the environmental conditions no hydraulic transport of the dredged material (pump-ashore or rainbowing) was accepted.

Instead, the Sospan Dau and the Long Sand used a method whereby sand and gravel was discharged at high tide through bottom doors, which the earth-moving equipment shaped into the right contours at low tide. The island was protected against hydraulic influences (waves and currents) by a revetment consisting of rock grading of 200 - 500 kg.

The execution of the works was tide related as the island is constructed on a sandbank with a main level of +2 m and the tides were varying between +1.50 m and +8 m.

Complicating factors in the construction of the island were also its complex form (all curves and slopes), its size (relatively small for the number of equipment involved) and the unpredictable weather in the Le Havre region during the winter season.

Completion of the project was mid April 2005. A total quantity of 57,000 tonnes of armourstone was deposited and 544,000 cu m tons of sand was contoured (for which 608,000 metric tons was dredged). The end result was an island which at high tide has three separate land areas. These areas can accommodate different species of sea birds, depending on each species' breeding habits. The island also has two expanses of water: a bay that opens to the south that is uncovered at low tide, and a lagoon in the east of the island that is protected on three sides by rubble, and that fills up during the spring tide and thereafter gradually empties thanks to the draining effect of the underlying sand.



- C** TSHD Sospan Dau and multicat Schorpioen
- D** Bulldozer working on the island.
- E** Artist impression island
- F** The completed island

