

Maritime work

Slurry wall - Plastic concrete wall

PORT OF NGQURA - PHASES 1 & 2

NGQURA (OR COEGA) - SOUTH AFRICA



Slurry and plastic concrete cut-off curtains used to enable a quay wall to be constructed



Aerial view of the site during phase 2

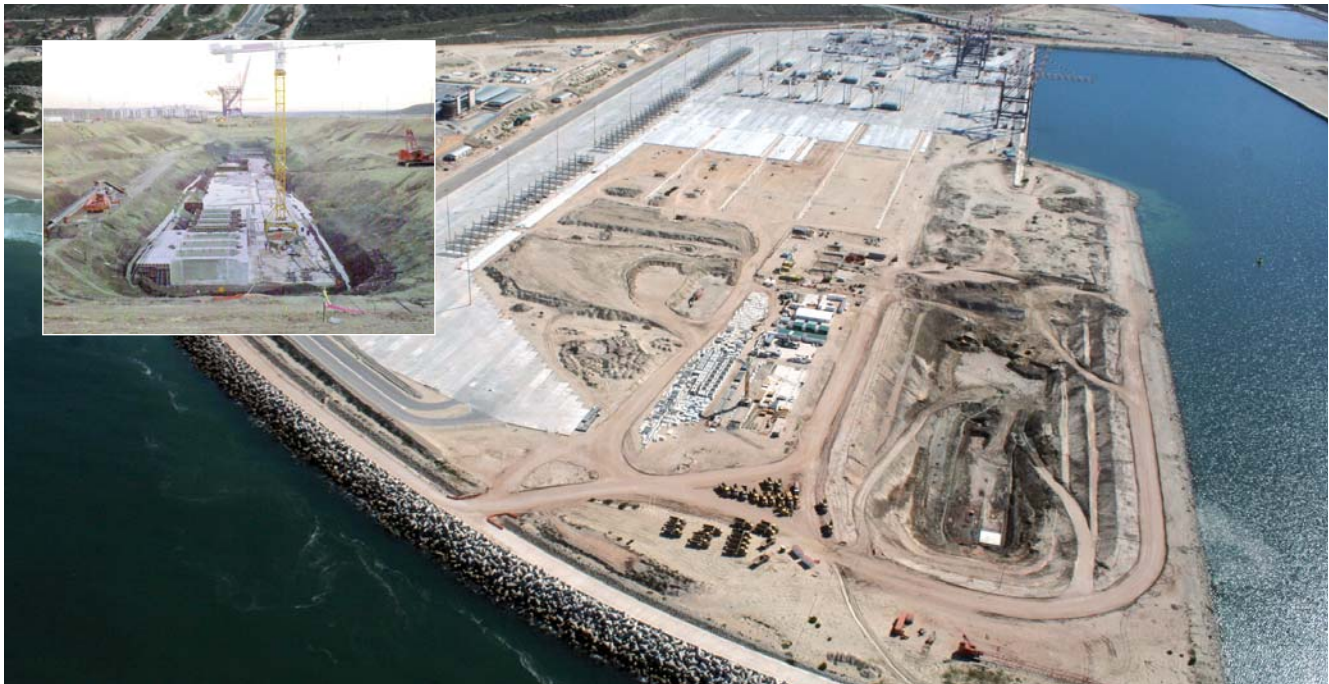
Positioned at the mouth of the river Coega, 20km from Port Elizabeth, the port of Ngqura (or Coega) is intended to become South Africa's 8th commercial port. Dura Solétanche Bachy has constructed watertight curtains enabling excavation works and the construction of quay walls to proceed.

Phase 1 of the project took place in 2003. A 1,350m long watertight wall was erected on

CLIENT:	PORTNET (DIVISION OF TRANSNET SOUTH AFRICAN TRANSPORT AUTHORITY)
MAIN CONTRACTOR:	HOCHTIEF-CONCORD JV
SUBCONTRACTOR:	DURA SOLETANCHE BACHY
DURATION OF WORKS:	PHASE 1: JANUARY 2003 - APRIL 2003 PHASE 2: FEBRUARY 2008 - MAY 2009

MAIN QUANTITIES:

- Phase 1: 23,930m² of slurry wall (600mm wide), up to 25m deep
- Phase 2: 38,000m² of plastic concrete wall (600mm thick), up to 24m deep
- Anchored at a depth of 0.8 m in the impermeable rock



Cell 2 during excavation works

a backfilled area so that a first wharf could be built. Phase 2 of the project includes the construction of a new 1,800m watertight wall so that an extension to the wharf (350m) can be built.

The watertight curtain of both phases encircles the future stepped excavation which goes down to a depth of 18m. Descending to the sound bedrock consisting of mudrock, and supplemented by a pumped dewatering system, the wall will make the excavation works possible, without

being affected by the adjacent water table. The ovoid wall comprises 2 cells separated by a watertight transverse cut-off wall used to isolate the 2 cells so that excavation works can be commenced independently of wall construction completion. The phase 2 wall links into the existing wharf, overlapping a clay core put in place during the phase 1 works.

Two KS hydraulic grabs were used to excavate the phase 1 wall that was constructed using a Slagsol type slurry (an eco-friendly slurry where foundry slag is used as a binder).

The very diverse geological conditions required the use of a hydrofraise to excavate phase 2 and the use of plastic concrete.

The wall was constructed using 3.60m wide primary panels, followed by secondary panels at intervals of 2.50m, keyed into the primary panels. The 0.60 metre wide wall has a permeability of approximately 10^{-8} m/s at 28 days.



HF 4000 Hydrofraise



General view of the site during phase 2