

Limbe Shipyard Breakwater

The Chantier Naval et Industriel du Cameroun s.a. (CNIC) is setting up a new shipyard and oilrig repair facility in Limbe to overcome the restriction in water depth at their present yard in Douala and to prepare for future demands of the market.

Delta Marine Consultants carried out the Detailed Design of the breakwater and shore protection. The rock armoured breakwater with a length of 700m and an average depth of -14 mCD shall protect the future shipyard against severe wave action. The shore protection will be applied along the land reclamation connecting the breakwater with the shore.

Main Client

CNIC Shipyard

Client

BAM International

Type of Contract

Design & Construct

Completion

2008 (design)

Location

Limbe, Cameroon

Construction Costs

Euro 27 million

Consultancy Fees

Category 4 (see page 2)

Scope

Design of a new shipyard facility

Services

Detailed Design Breakwater
Shore Protection and Quay Walls
Planning and Supervision on 2D and 3D Model Tests



Limbe Shipyard Breakwater

Project Description

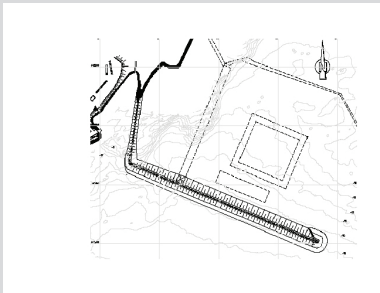
The Detailed Design work consisted of the preparation of the Basis of Design, the detailed design of the breakwater including crown-wall and slope protection, the supervision of 2-D and 3-D physical model testing of the breakwater, the performance of a wave diffraction analysis and the preparation of technical specifications for the construction.

In the second stage of the project 400 m of quay wall (gravity type) have been brought to detail design.

Role DMC

2-D and 3-D physical model tests have been carried out to verify the stability of the rock armoured breakwater. Besides the verification of the stability of the armour, consisting of up to 5-7 ton basaltic rock from a local quarry, the required lowest level of the front armour is determined and wave transmission through and over the breakwater and wave diffraction around the breakwater has been assessed during the model tests.

Consultancy Fees: 1: 50.000€ 2: 50 - 150.000€ 3: 150 - 300.000€ 4: 300 - 600.000€ 5: > 600.000€



Delta Marine
Consultants