

LNG and Condensate Loading Jetty, Papua New Guinea

The PNG LNG Project is an integrated development that includes gas production and processing facilities in the highlands and coastal areas of Papua New Guinea. There are over 700 kilometres of pipelines connecting the facilities, which includes amongst others a liquefaction and storage facilities on a remote location northwest of Port Moresby on the coast of the Gulf of Papua. Within this developments a LNG & Condensate jetty is foreseen adjacent to the planned onshore LNG facility. Chiyoda JGC Joint Venture, acting as main contractor for the onshore LNG facility for Esso Australia Pty Ltd., has awarded the subcontract for design and construct of the jetty to BAM Clough JV.

Main Client

ExxonMobil (operator)
JV Chiyoda and JGC (main contractor)

Client

JV BAM International and Clough

Type of Contract

Engineering, Procurement and Construction (EPC)

Completion

2011 (design)

Location

Port Moresby, Papua New Guinea

Consultancy Fees

Category 5 (see page 2)

Construction

300 Mio Euro

Scope

Design of a product loading jetty with combined LNG/Condensate berth

Services

Tender Design
Basic Design
Detailed Design
Site Engineering
PDA Pile Testing



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Project Description

The jetty consists of a 2.4 km approach trestle with a combined LNG/Condensate loading platform and a substation platform for E&I at the end. Typical trestle section is $5 \times 24 = 120$ m. Each section has a strongpoint and expansion loop for the piping. The approach trestle is constructed with tailor-made equipment called the Cantilever Bridge (CLB), being able to shift the work front forwards over the already constructed trestle part, without being dependent on water depth and wave conditions. Four Breasting and six Mooring dolphins allow safe berthing of vessels up to 220.000 m³. The dolphins are of the flexible type and consist of 2.90 m diameter mono piles with varying wall thickness. Loading platform and dolphins are interconnected by space frame catwalks with lengths up to 60 m. Special feature for the design is the earthquake load of 0.55 g PGA.

Role Delta Marine Consultants

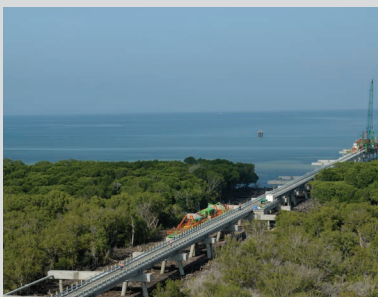
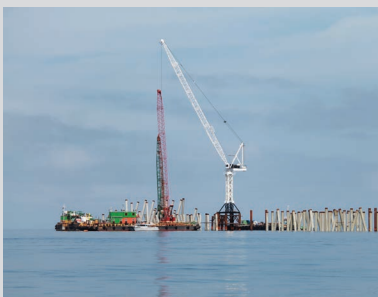
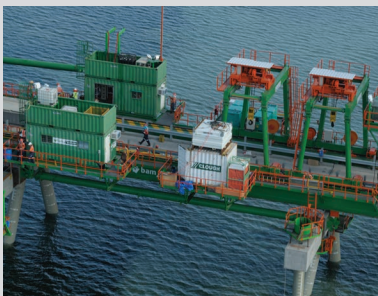
DMC was contracted by BAM Clough JV as their civil marine designer for the jetty and as such

responsible for the design of the jetty structure during tender, basic and detailed design. During construction also site engineering support is delivered as well as support for conducting and interpreting PDA pile tests.

The scope of DMC comprises the civil marine design of:

- 2.4 km of Approach Trestle Structure (steel piles, concrete headstocks and pre-stressed concrete roadway beams)
- Steel pipe racks
- Combined LNG/Condensate Loading Platform (steel piles with precast concrete deck)
- Substation Platform Electrical and Instrumentation Platform (steel piles with precast concrete deck)
- Dynamic Mooring Analysis
- Mooring and Breasting Dolphins (mono pile type) including fender system
- Catwalks
- Sea Water Intake support structure
- Navigation Aids

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



Delta Marine
Consultants