Project Sheet

Delta Marine Consultants
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Delta Marine Consultants is a trade name of BAM Infraconsult bv

Module Offloading Facility, Ichthys

Main Client
INPEX (operator)
JV JGC, KBR and Chiyodo (main contractor)

Client
BAM Clough JV

Type of Contract
Engineering, Procurement and Construction (EPC)

Completion
2013 (design)

Location
Darwin, Australia

Consultancy Fees
Category 5 (see page 2)

Construction Costs
Euro 70 Mio

Scope
Module Offloading Facility (MOF) with 1 LoLo and 2 RoRo Berths

Services
Tender Design
Basic Design
Detailed Design
Site Engineering
PDA Pile Testing

INPEX Operations Australia Pty Ltd is the proponent for the construction and operation of hydrocarbon production and export facilities that are required for the development of the Ichthys gas field located off the northern coast of Western Australia.

As part of this development, extensive onshore facilities are required. A Module Offloading Facility (MOF) is built as part of the initial infrastructure to enable the delivery of modules and other materials required for the construction of the LNG plant.

The MOF is located on Elizabeth River in Darwin (NT).

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Module Offloading Facility, Ichthys

As subcontractor of the BAM Clough JV, DMC was responsible for all aspects of the design of the MOF, from tender design through to site-engineering.

The Ichthys MOF project has been an example of close cooperation between Design, Engineering and Construction-teams. This cooperation allowed several important constructability optimizations that benefited the project.

Scope of Work

The main body of the Module Offloading Facility (MOF) is a cellular cofferdam structure, which serves as quay for 1 LoLo and 2 RoRo berths. The MOF also includes associated breasting and mooring dolphins, access catwalk, provisions for marine operations, cathodic protection systems and navigation aids. The causeway leading to the main body and dredging of berth pockets were done by others.

Cellular Cofferdam

A cellular cofferdam is a gravity base structure consisting of a row of circular cells and intermediate cells, filled with selected rock material. The cellular cofferdam at the MOF consists of 14 cells, each measuring about 17 metres in diameter. Each cell is made by piling of more than 100 flat sheet piles.

The cell sheet piles are installed by using a purpose built temporary structure called as a cell template.

Design Involvement

DMC was contracted by BAM Clough JV as their civil marine designer for the MOF and as such responsible for the design of the MOF structure throughout tender, basic and detailed design. DMC have performed all aspects of the design in-house, which besides marine and structural design also included geotechnical design, scour/revetment/slope protection and Dynamic Mooring Analyses.

Construction Support

During the construction phase DMC engineers were present on site to ensure correct implementation of the design specifications to actively support the construction team.

Pile Driveability Analysis

DMC also performed PDA testing and was therefore able to immediately correlate test results with the detailed design assumptions, ensuring early identification of any problems and implementing risk mitigation measures where required.

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

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