

PLATFORMS & PIPELINES



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Projecting the Future

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Clough provides both traditional and innovative solutions to offshore oil and gas field developments. We offer clients an integrated EPIC service encompassing engineering, procurement, construction, fabrication, installation, operation and asset support for new and existing facilities.

Capabilities include:

- Conventional platforms and infield pipelines
- Shallow water pipelines and shore approach
- Self-installing developments (ACE platforms)
- Installation of topsides using the floatover method
- Process topside, jacket and wellhead platform fabrication

Our full-field development capabilities incorporate access to a range of specialist construction vessels and regional engineering and fabrication facilities in the South East Asian region.

Conventional Platform and Pipeline Installation Experience

Montara Field Development – Offshore Facilities Installation

Client: PTTEP Australasia (Ashmore Cartier) Pty Ltd

Location: Timor Sea, Australia

Year Completed: 2009

Scope of Work:

Transportation and installation of the 750 tonne Montara Wellhead Platform deck, the 285 tonne mooring buoy with nine associated mooring legs, approximately 29 km of 6-14 inch infield pipelines, and the 100 tonne Swift subsea manifold.

The wellhead platform topsides were successfully installed by Clough's Java Constructor on 7th August 2009; however the project was terminated due to the well publicised hydrocarbon spill on 21st August 2009 and subsequent fire.



Clough's Java Constructor Derrick Pipelay Vessel installing the Montara topsides



NuCoastal Bua Ban Field Development Topsides at Clough's Sattahip Fabrication Yard



Java Constructor on ROIC Pipeline Installation Project

ROIC Pipeline Installation

Client: Real Offshore Installation Company Sdn Bhd

Location: Malaysia Thailand Joint Development Area

Year Completed: 2009

Scope of work:

Installation of a 24 inch pipeline and associated tie-ins and stalk-on risers within the B17 field development.

The B17 field development, which is in the offshore Joint Development Area (JDA) between Malaysia and Thailand, is operated by CPOC (Carigali-PTTEP Operating Company Sdn. Bhd).

INNOVATIVE SOLUTIONS

ACE Platforms

The ACE platform is an important breakthrough in offshore field developments. The concept differs from conventional designs by offering a lower risk solution to clients who require rapid installation without mobilisation of large offshore construction vessels. The solutions are robust, and are available for installation in a variety of soil types and weather conditions.

Clough uses extensive in-house design capability complemented by an agreement with Arup, to deliver innovative and economic ACE Platform solutions to the Australasian offshore industry.

ACE Platform Project Experience

Maari Field Development

Client: OMV New Zealand Limited

Location: Taranaki Basin, New Zealand

Year Completed: 2008

Scope of work:

Clough undertook all engineering, procurement, construction, installation and hook-up and commissioning activities for the wellhead platform on OMV's Maari Field Development. Clough was awarded this project for its innovative, cost effective and lower risk self-elevating ACE platform concept.

The Maari ACE platform (base, support structure and process deck) weighs approximately 10,000 tonnes, including a 145m high jacket, 50m x 55m topsides deck and suction base. The topside facilities include accommodation, crane and helideck, all fully installed during the initial fabrication phase.



The Maari Platform arrives in New Zealand

FLOATOVERS

Clough, in partnership with Aker Marine Contractors, is a leading Australasian floatover contractor.

Deck installation through the floatover technique is quickly gaining popularity in the Australasian region because the deck weight does not significantly affect the floatover procedure or systems, whereas in conventional deck installation the weight is limited by the crane capacity employed. Floatover can be employed in shallow to ultra deep water, for fixed or floating structures, in swell conditions or random waves.

Floatover Project Experience

Angel Platform Topsides Floatover

Client: Woodside Energy Ltd

Location: Angel Gas Field, Western Australia

Year Completed: 2008

Joint Venture: Clough Aker Joint Venture

Scope of work:

The Clough Aker Joint Venture (CAJV) was awarded a transport and installation contract for the topside platform required on the Angel Gas Field Development, off Karratha on the North West Shelf, Western Australia. This engineering, construction and installation project entailed transportation and installation of the Angel topside module weighing 7700 tonnes. The workscope included additional hook-up work for the module to the pre-installed jacket.

Bayu-Undan Floatover of DPP & CUQ Decks

Client: Conoco Phillips Australia Pty Ltd

Location: Bayu-Undan Field, JPDA Timor Sea/Australia

Year Completed: 2004

Joint Venture: Clough Aker Joint Venture

Scope of work:

Installation of the two major production decks for the world scale Bayu-Undan natural gas and gas liquids development in the Timor Sea.

The Joint Venture utilised a specialised high transit speed, heavy lift vessel (HLV) to transport the pre-fabricated integrated decks to the Timor Sea. Floatover installation technology was used to position the Drilling, Production and Processing (DPP) platform and the Compression, Utilities and Quarters (CUQ) platform on top of pre-installed jacket substructures at site.

The two large fully integrated decks, weighing up to 15,000 tonnes (DPP) and 11,500 tonnes (CUQ), were fabricated in Korea and transported approximately 3,000 nautical miles to the offshore site.



Bayu-Undan Facility in the Timor Sea



Angel Platform Topsides Floatover, North West Shelf

Clough Services

For complex projects, sometimes grand designs and the best made plans don't work in reality. That's why Clough offers an integrated Engineering, Procurement and Construction (EPC) service based on the concept of 'Constructability.'

Constructability is how our EPC capabilities come together in a project management technique we've evolved over our 90-year history. Constructability underpins our EPC solutions to ensure all engineering designs are buildable.

Clough's multi-disciplinary, engineering-led EPC services range from concept and front-end engineering design, detailed design, procurement, construction, installation, commissioning and operations and maintenance support for onshore and offshore oil and gas projects.



Domestic Gas

- Conceptual and Front End Engineering Design
- EPC/EPCM for upstream gas processing facilities and onshore pipelines
- Modularisation, fabrication and construction



LNG

- Conceptual and Front End Engineering Design
- Detailed design for offplot facilities
- Modularisation and fabrication
- EPCM or EPC delivery
- Project infrastructure development including onshore pipelines, compression and nodal stations
- Marine infrastructure including jetties



Platforms & Pipelines

- Conceptual, Front End Engineering and Detailed Design
- Installation of conventional platforms and pipelines
- Self-installing platforms
- Installation of topsides using the float-over method
- Process topside, jacket and wellhead platform fabrication



SURF

- Conceptual, Front End Engineering and Detailed Design
- Full subsea field installations including:
 - Umbilicals, risers and flowlines
 - Subsea structures, manifolds, riser-bases, protection structures
 - Spools and tie-ins
 - FPSO or TLP moorings
- Inspection, Repair and Maintenance



Asset Support

- Onshore and offshore asset support including:
- Brownfield engineering
 - Operations and maintenance
 - Shutdowns and campaign management
 - Commissioning
 - Decommissioning