

# Pulau Busing Jetty 6 Upgrade, Singapore

DMC was appointed by Tankstore to provide design and engineering consultancy services for the detailed design of the upgrading of the existing Jetty 6 at Pulau Busing Terminal, Singapore. Pulau Busing is an industrial island in Singapore solely occupied by Tankstore. Since the very early days, when Pulau Busing was still a greenfield site, DMC has been supporting Tankstore with the development of their waterfront infrastructure.

Up to the time of the upgrade, Jetty 6 was catering for bunker barges of up to 12,000DWT at a single berth. Tankstore wanted to increase the capacity and expand the jetty with an additional berth to accommodate up to two 12,000DWT bunker vessels simultaneously.

## Client

Tankstore

## Type of contract

Detailed Design, Bid Package and Construction Management

## Completion

2015

## Location

Pulau Busing, Singapore

## Start design

Jan 2012 (Basic Design)

Nov 2014 (Construction Management)

## Completion design

July 2013 (Detailed Design)

July 2014 (Construction Management)

## Consultancy Fees

Category 4 (see page 2)

## Services

Detailed Design

Construction Management

Construction Supervision

Government Submissions

## Scope

Upgrading of existing Jetty 6



# Pulau Busing Jetty 6 Upgrade



## Challenges

A number of challenges existed in this project. Firstly, as much as reasonably possible the old facilities had to be incorporated into the new development to minimize demolition works. Secondly, during construction the existing berth was to remain operable for as long as possible. Limited available construction time added to the challenge of this project.

## Scope of Work

As Marine designer and PMC, our scope of work covered the Basic and Detailed Design for the jetty expansion and all related front-end engineering studies. Front-end and conceptual engineering for the marine works included metocean data studies, navigation assessment, dynamic mooring analyses and coastal and geotechnical design. DMC was also responsible for the overall project management including for the topsides and piping contract (separate D&C package), government submissions and liaising with the authorities.

## Design involvement

As the design was to incorporate the existing structures where possible, our design started with a detailed structural inspection and capacity assessment of the jetty.

Being the designer of the original jetty 6 and having been involved with asset management of Tankstore's Pulau Busing jetty structures on a regular basis, DMC was able to optimally integrate the existing structures into the design. This had very favorable environmental and permitting consequences.

The design included 2 loading platforms, trestle upgrade design, pipe racks, mooring and breasting dolphins, connecting catwalks and navigation aids.

## Construction support and supervision

The design services extended to the construction site, where hands-on support was provided by our engineers. Two dedicated site-supervisors, hired by and reporting to DMC, were present at the project site and fabrication yard for quality control.

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



Delta Marine  
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