PORT OF FUJAIRAH OT2, PHASE 1, UAE

PORT CONSTRUCTION PROJECT

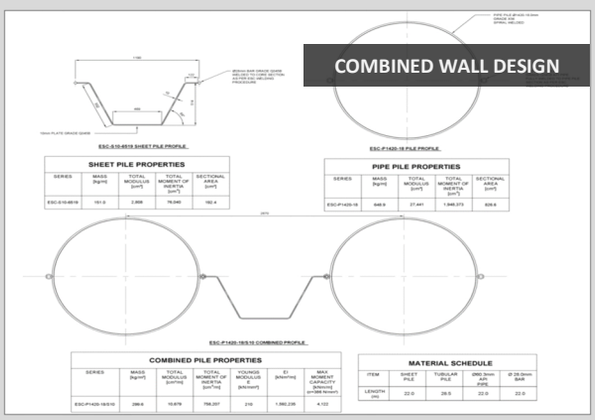
Project Name	Port of Fujairah Oil Terminal 2, Phase 1
Client	Port of Fujairah, UAE
Main Contractor	Athena SA
Engineer	MUC
Location	Port of Fujairah, United Arab Emirates
Product	Tubular Piles, Sheet Piles, Waling Beams, Tie Rods & Corrosion Protection
Total Tonnage	17,000 MT
Delivery Date	November 2008

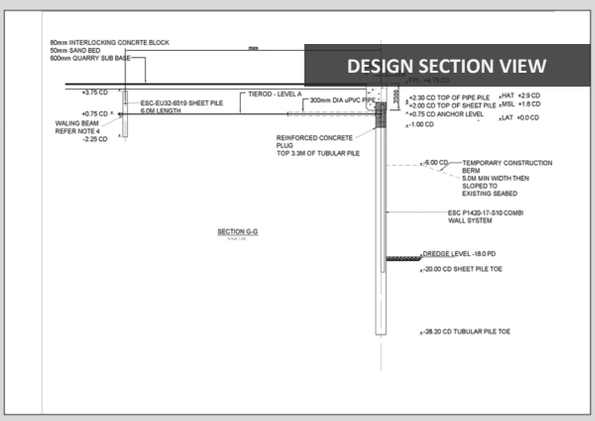
INTRODUCTION

Athena SA and ESC proposed the ESC Combi-wall Tubular Pile system which eventually won the award from the Port of Fujairah and their Engineers MUC of the Netherlands. During the course of the design stage of the project ESC held site meetings in the UAE and visited MUC's geotechnical and structural team in Terheijden, Netherlands. ESC ensured that all facets required by the Client and their Engineers were able to be met.

The Port of Fujairah proposed a new quay wall for an oil terminal facility to be constructed to the north of the existing port facility. The name of this project is Fujairah OT2. The main purpose of this quay will be as a vessel loading facility for oil products.

The type of retaining wall used is a steel tubular pile wall with sheet pile infills, restrained by tie rods to a buried sheet pile anchor wall. This wall was backfilled with locally dredged material. In addition, in order to counter possible liquefaction issues there was significant removal of inadequate material and replacement with suitable rock material.





ESC SCOPE OF SUPPLY

TUBULAR PILES & SHEET PILES

ESC delivered over 17,000 tons of combined wall pipe piles, sheet piles, tie rods and waling beams for the quay wall constuction as part of the expansion works for the Port of Fujairah - a multi-prupose port on the Eastern seaboard of the United Arab Emirates, approximately 110 kilometres from the Straits of Hormuz.

ESC not only worked with the owners but the contractor Athena SA had constant site visits and communication from ESC both during the design stage and the implementation stage of the project. Designs of the wall system took into account the preferred method of construction detailed by Athena SA and were adapted accordingly whilst at the same time ensuring the stringent safety factors of the Clients Engineers were followed in terms of the seismic and structural conditions.

PROJECT DETAILS


COMBINED WALL DESIGN

The design of the sheet pile wall was undertaken by ESC and detailed in a series of reports. The scope of the design covered by these series of reports was as follows;

- Evaluation of geological data and existing site conditions to determine a range of geotechnical parameters for use in the designs.
- Analysis of the retaining wall and restraint system given the geotechnical parameters, site requirements and loading considerations, including seismic design.
- Specification and design of necessary sheet pile and tie rod components to withstand the calculated geotechnical and imposed loads
- Evaluation of the corrosion conditions, and design of the sheet pile system components to accommodate these conditions, including specification of protective coatings.
- Various method statements required for specific tasks, including painting, bitumen sealing and clutch strength testing.

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SURFACE PREPARATION

ACTIVITIES

SHEET PILES ON SITE READY FOR BLASTING & PAINTING

ON-SITE BLASTING OF PIPES

PAINTING OF PIPES

PAINTING WORKS ARE UNDERWAY ON SITE

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The specified coating for the sheet piles is for shot blasting to SA2.5 followed by 2 layers of 250 micron Jotamastic 87. The coating was applied to the top 22.3m of the front of the ESC Tubular Piles and the back 4m. The ESC Sheet Piles had the full 22m length both sides with paint applied. The ESC Anchor Piles had no coating.

CARGO SHIPPING

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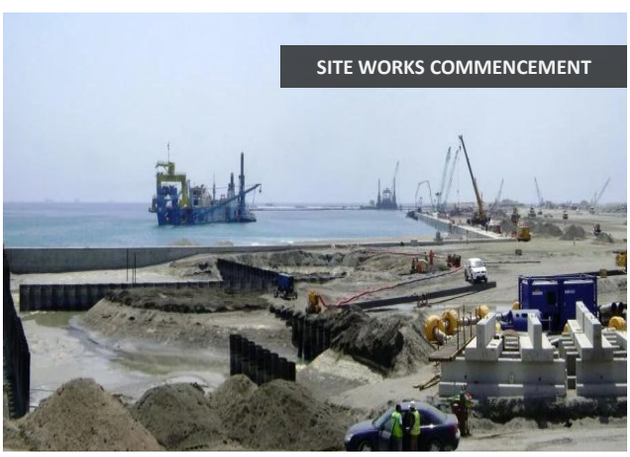
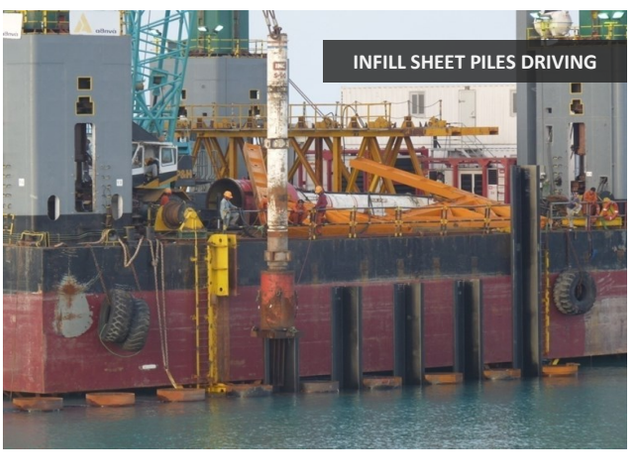
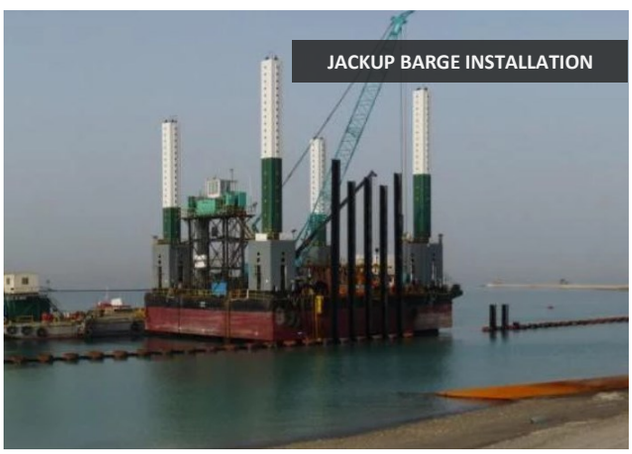
ON-SITE INSTALLATION


CUSTOM DRIVING GUIDE FOR KING PILES


SITE WORKS COMMENCEMENT


TIE BACKS & REINFORCED CONCRETE


INFILL SHEET PILES DRIVING


JACKUP BARGE INSTALLATION

PROJECT COMPLETED

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