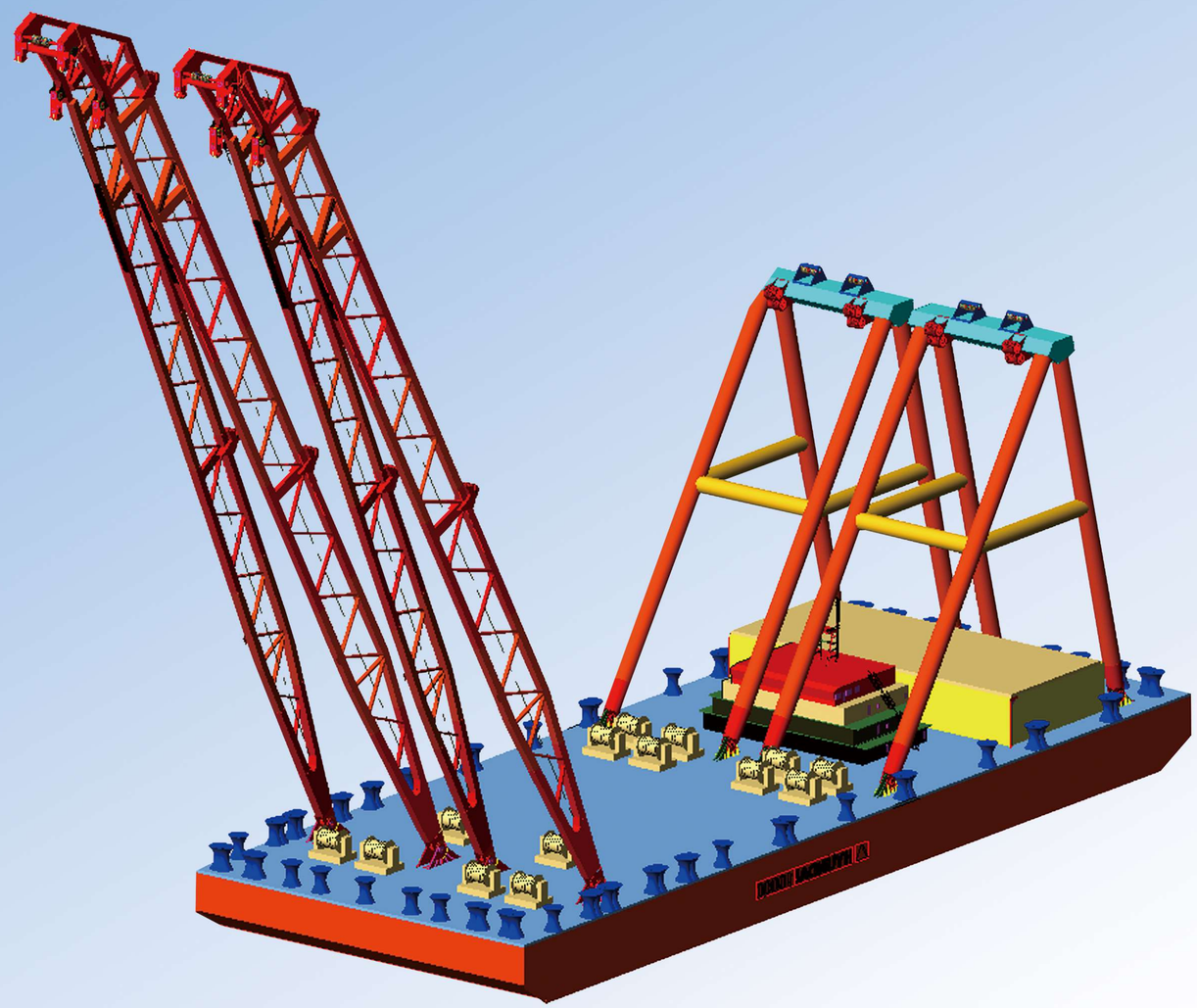
Lifting and Moving Technology
SEHO ENGINEERING

PROJECT WORK REPORT

HD-10000 PROJECT

Floating Crane Mooring Design & Analysis



HD - 10000

· Width	70 m
· Length	182 m
· Operating Draft	6 m
· Crane Capacity	10000 ton

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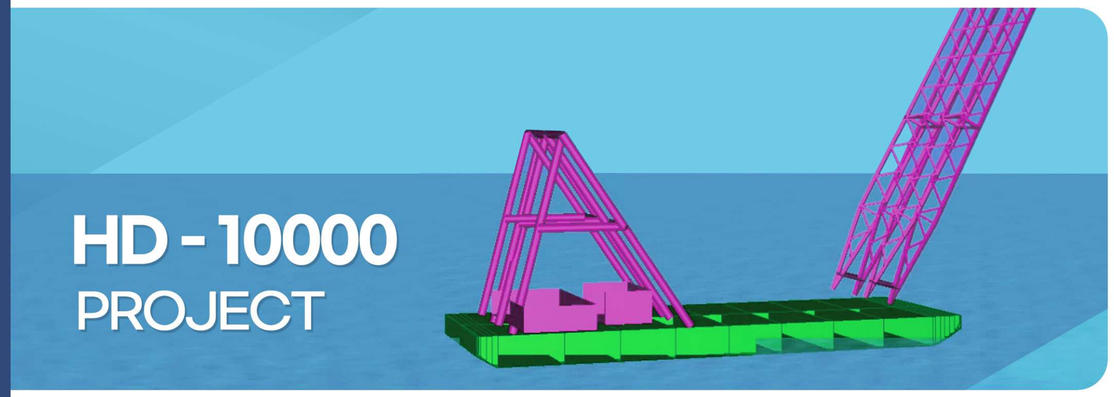


HD - 10000 Project

This project confirms the mooring capacity of the「HD-10000」floating crane moored at the SK Oceanplant Co., Ltd. (SKOP) pier. Three mooring cases are reviewed.
Case-1 analyzes the mooring condition of a typhoon moored at No.1 Quay with a wind speed of 40m/sec, and Case-2 is a general environment with a wind speed of 25m/sec and HD-10000 Floating Crane the mooring condition is moored at SKOP's Floating Dock, and Case-3 analyzes the mooring force of the HD-10000 Floating Crane lifting working condition.

Project Period

2023.07 ~ 2023.08

Scope of Work

- Draw up the Mooring Arrangement
- Check Mooring Line Capacity
- Arrange the Fender and Check the Capacity
- Check the Motion of Floating Crane under Certain Environment Condition

Program

OPTI-MOOR

Mooring Analysis

MOSES

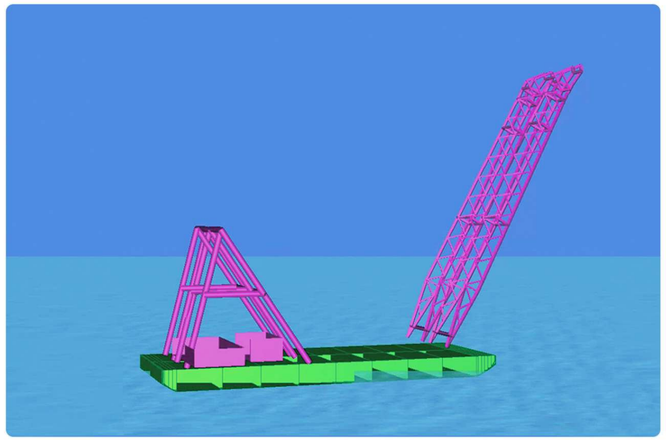
Multi-Operational Structural Engineering Simulator, Motion & Stability Analysis

The Motion analysis program OPTI-MOOR used in previous project, was checking the mooring line capacity based on environmental forces occur at vessel. In this project, the floating crane which has boom, back stay and deck house which can affected by wind condition was considered in analysis. The Motion analysis program MOSES is used in analysis instead of OPTI-MOOR. The MOSESE can model the equipment like boom, backstay and deckhouse, so the wind load applied in equipment can be included in analysis.

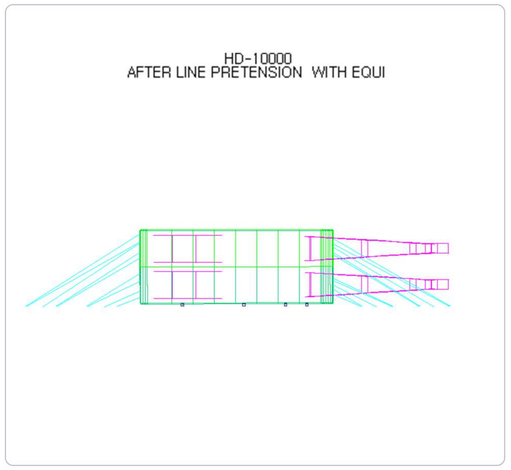
Structural Analysis

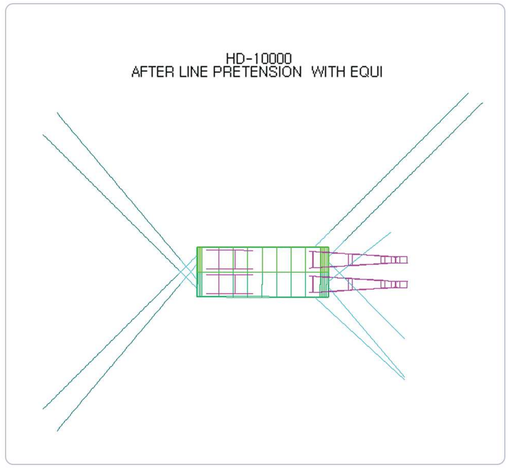
● Floating Crane 3D Model

● Floating Crane Moses Model



● Moses Model With Mooring Lines





Work Performance Records for the last 3-years

No.	Project Name	Company / Contractor	Duration	Remarks
14	ITER - VS - Coil in Situ Winding Work - Staging & Prototype Design	IO / Yujin MS	2022~2023	On-going
13	Vacuum Insulated Pipe Design & Analysis	DuckCheun	2022~2023	On-going
12	Artificial Structure for Display	Government / GSI	2023	On-going
11	HD-10,000 F/C Mooring Design & Analysis	SK Ocean Plant	2023	On-going
10	Consulting of Method Statement for FOWT	SK Ecoplant	2022	Finish
9	Design of Special Lifter for Ship's Propulsion	Zvezda / DH Ent	2021~2023	Finish
8	Barossa FPSO - Structural Analysis	BWO / FG Ind.	2021~2022	Finish
7	Mumbai Trans Harbour Link Project - Marine Work & Installation Analysis	Daewoo TATA / DWST	2021~2023	Finish
6	Cable Protection System(CPS) Design Analysis	DWNT / Panduite	2022	Finish
5	ITER - Bracing Tools Manufacturing Design	IO / Yujin MS	2022	Finish
4	Lifting Work Procedure for Floating Crane	Kumyong	2022	Finish
3	Vibration Analysis for SCR	WK Industry	2021	Finish
2	Power System Design of Air Boat	Government / KUMHA	2021~2022	Finish
1	Development of Mine Laying System Design	Government / KUMHA	2020~2022	Finish

Software & Tools

ANSYS
Structural Analysis

ENGYS
Applications by Industry
CFD & Optimisation

Orca3D
Orca3D
Marine Design for
Rhinoceros

OrcaFlex
Dynamic Analysis Software
for Offshore Marine Systems

SACS
Structure Analysis
Computer System for
Offshore Plant

PATRAN & FEA2007
Hull and General
Structural Analysis
Program

Rhino
Geometric
Modeling

MIDAS-NFX
Structural Analysis
& Civil Engineering

MOSES
Multi-Operational Structural
Engineering Simulator,
Motion & Stability Analysis

OPTI-MOOR
Mooring Analysis

NASTRAN
Analysis Solver

AUTO-CAD
2D & 3D Drawing

3D MAX
3D Drawing

IN-HOUSE SOFTWARE
Ballasting Calculation,
Towing Calculation,
Lug Calculation,
Welding Calculation and Etc.

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