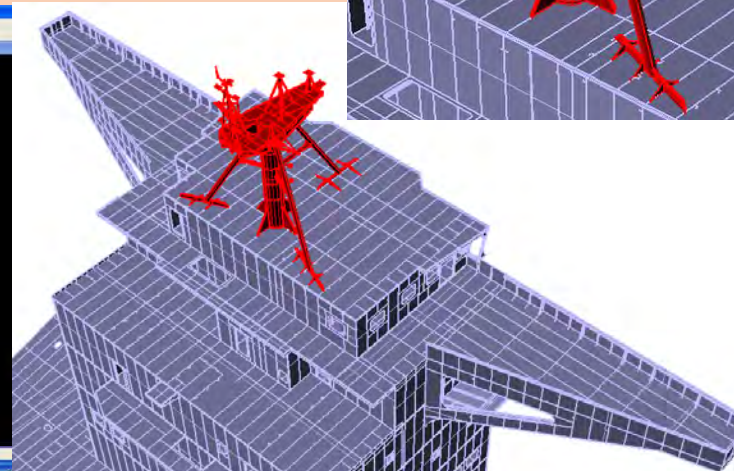
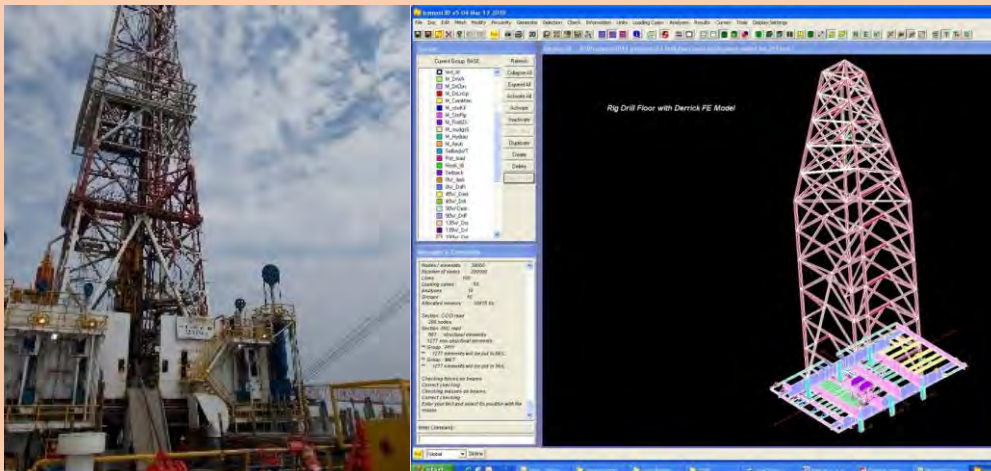
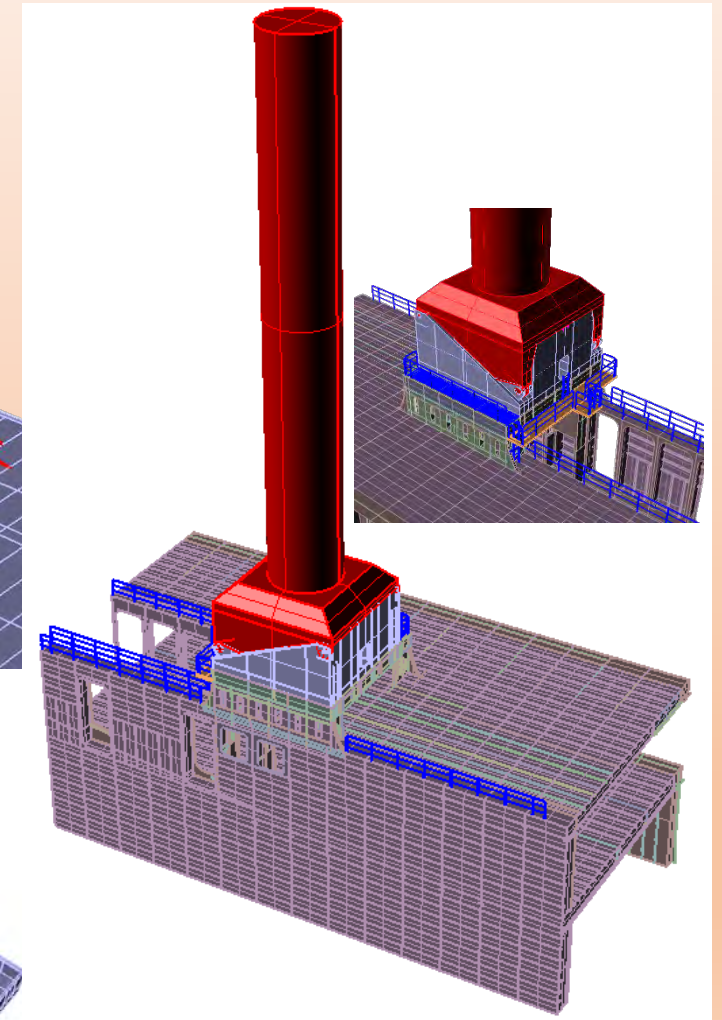
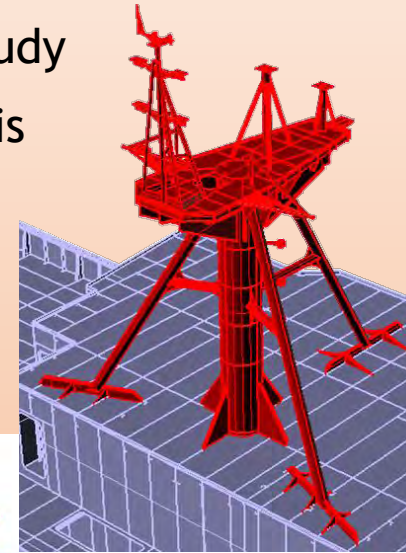


# Complex Analysis



### Zebec Marine carries out a range of Complex Analysis:

- Structural Analysis and Engineering
- Spread Mooring Analysis
- Multi-body Motion Analysis
- CFD Analysis
- Transportation / F.E Analysis
- Riser Analysis
- DP Capability Study
- Vibration Analysis



## Global Structural Assessment of Fixed and Floating Platforms

### ➤ Jacket Platforms

- In-Place Dynamics Analysis
- Spectral Fatigue Analysis
- Seismic Analysis
- Push Over Analysis

### ➤ Jack Up Platforms

- In-Place Dynamics Analysis
- Spectral Fatigue Analysis
- Seismic Analysis
- Leg Strength Analysis
- Elevated Mode Hull Analysis

### ➤ Semi Submersibles and FPSO

- Design Wave Analysis
- Hull Strength Analysis (3 Hold)
- Global FE Analysis

## Local Structural Analysis

### ➤ Design and Analysis

- Foundation of equipments
- Equipment Deck
- Crane Pedestal, Boom Rest and Support Structure
- Mooring Outfits and Support Structure
- Towing Outfits and Support Structure
- Helideck
- Burner Boom and Kingpost
- Gangway
- A-Frame
- Derrick and Drill Floor

## CFD Analysis

- CFD Analysis for performance of Hull design and optimization
- Software Used - STAR-CCM+

## Mooring Analysis

### Analysis of various mooring systems

- Spread Mooring System
- Single point Mooring System
- Taut mooring system
- Multibody mooring system

### Analysis includes

- Site specific loads
- Seabed bathymetry
- Strength & Fatigue of mooring lines
- Time domain analysis

## Motion Analysis

### Single Body Analysis

- Determination of Roll Period of Vessel in various loading & environmental conditions
- Design & performance analysis of Roll Reduction system (Anti-rolling tanks, free flooding tanks etc.)

### Multibody Analysis

- Effect of damping due to mother vessel
- Effect of passing by ship
- Analysis of transshipment operation to determine operability

## Transportation Analysis

Zebec provides a range of loadout services:

- Lifting feasibility study
- Lifting analysis
- Rigging design
- Vessel stability and strength
- Mooring analysis
- Structural design of attachments and supports
- Barge ballasting calculations
- Loadout procedure

## Structural Vibration Analysis

- Calculate natural frequency/ mode shapes of the structure
- Avoid resonance & excess forces

## Riser Analysis

### Design and Analysis

- Global strength analysis - installation, extreme, operational and accidental conditions
- Riser configuration optimization
- Fatigue analysis of riser system
- Interference / clash analysis
- Integrated analysis involving vessel and the mooring system

## DP Capability Study


- Generation of quadratic transfer functions
- Modelling of Thruster Layout
- Modelling of Environmental conditions
- Preparation of DP Capability Plots
- Preparation of Thrust Utilization Curves

# Zebec Marine Consultants & Services Pvt. Ltd.




- Ship Building Project Management
- Ship Design (Concept, Basic & Detailed)
- Oil & Gas Engineering
- FPSO | FSO | FSRU System Design
- Naval Architectural Services
- Retrofit Engineering (BWTS / Scrubbers)
- Ship Loadicator Software

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