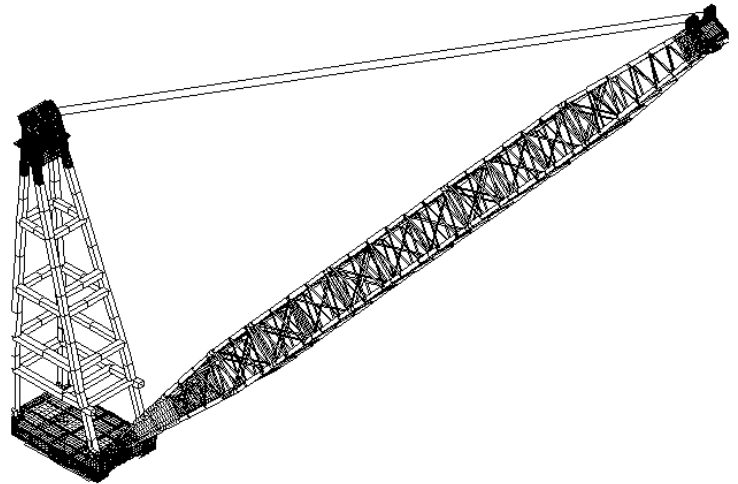


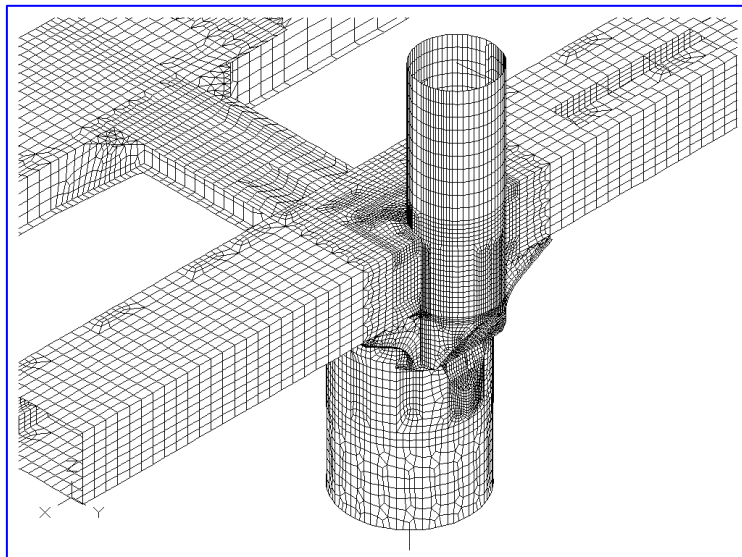
## Crane Structural Engineering

SeaDyn provides a wide range of engineering services related to offshore cranes:

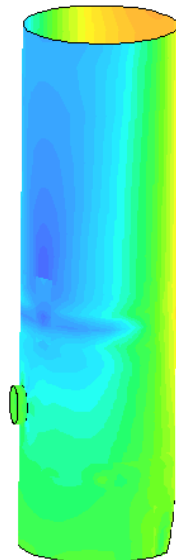
- Crane Assessments & Upgrades
- Pedestal Design & Modification
- Finite Element & Fatigue Analysis
- Boom Rests
- Special Lifts
- Test Procedures & Lifting Plans
- Load Rating Charts
- Risk Assessments
- 3D CAD modelling
- Failure Mode Analysis Verification
- Independent Verification (EN13852, API 2C, DNV, Lloyds)



*FE Model of a Typical Offshore Crane  
(Fixed Offshore Platform)*



*FE Model of a Crane Pedestal & Deck Structure  
(Semi-Submersible Drilling Platform)*



*Stress Plot From FE Analysis  
Of New Crane Pedestal*

## Crane Package Engineering

SeaDyn personnel have represented the Client as 'Package Engineer' on numerous new offshore crane build projects with responsibility for the following activities:

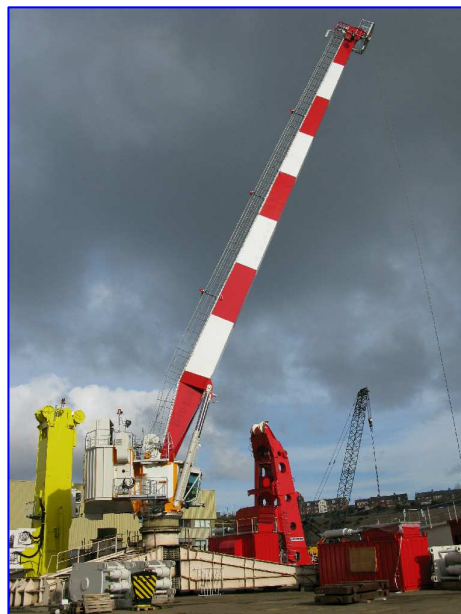
- Develop Crane Purchase Specifications
- Perform Tender Assessments
- Technical Focal Point With Vendor For Order
- Vendor Package Management
  - Design
  - Build
  - Documentation Approval
  - Test
  - Commissioning
- QC Inspections
- LOLER & PUWER Reviews
- F.A.T Witnessing
- Final Acceptance of Crane
- Liaison With Certifying Authorities



*New Build Crane Pre-Installed on New Offshore Module*



*QC Inspection*



*New Crane On Test Stand During F.A.T*

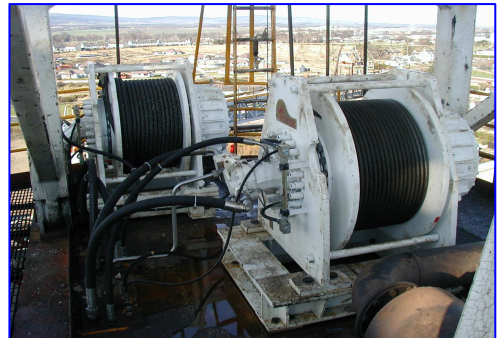
## Crane Modification & Replacement

SeaDyn personnel have extensive experience in delivering comprehensive engineering services associated with crane upgrades and crane replacement:

- Offshore Surveys
- Winch Upgrades
- Crane & Pedestal Modifications
- Assessment of defects and damage
- Crane Replacements
- Pedestal Replacements
- Lifting and Skidding Systems
- Installation, Testing and Temporary Works
- Site & Offshore Supervision
- Procedures



*Crane Replacement Using Modular Skidding*



*Winch Upgrade*



*Offshore Pedestal Replacement*



*Onshore Testing of Large Offshore Gantry Crane*



## Lifting & Seafastening

Delivering the equipment safely to site is an essential part of any project. SeaDyn has extensive experience in the design of heavy lifting and sea-fastening schemes as well as supervision of equipment load-outs and vessel mobilisations.

Including:

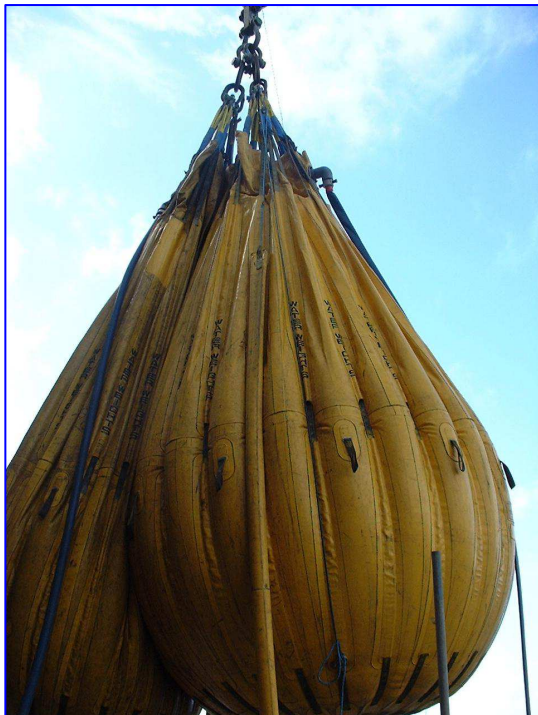
- Heavy Lifting Design (DNV, Lloyds, Noble Denton)
- Rigging
- Lifting Beams & Lift Frames
- Load Testing Procedures
- Lifting Plans
- Sea-fastening Design (DNV, Lloyds, Noble Denton)
- Sea-fastening Grillages
- Derivation Of Vessel Motions
- Supervision Of Vessel Mobilisations



*Lifting Of Crane Machinery House*



*Lifting Of Crane During Load-out*



*Load Test*



*Crane Components In Transit*