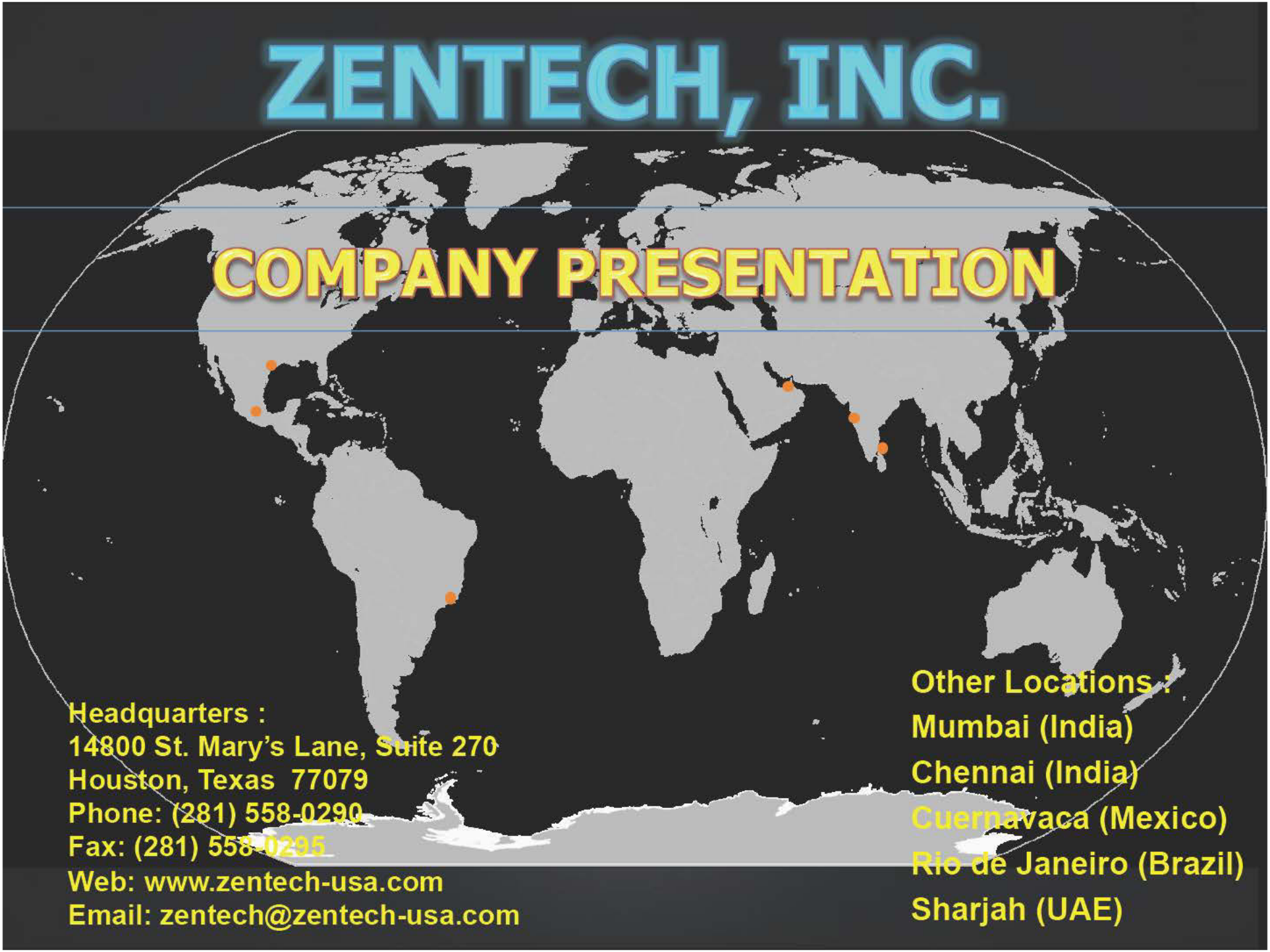
ZENTECH, INC.

COMPANY PRESENTATION



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Other Locations :
Mumbai (India)
Chennai (India)
Cuernavaca (Mexico)
Rio de Janeiro (Brazil)
Sharjah (UAE)

INTRODUCTION

A leading engineering consulting, software development and construction management company, found in 1978.

Zentech is dedicated to providing the best solutions and results, which are critical to the productivity of our clients through quality design, consulting services, computer software solutions and construction management services to the marine, petroleum, offshore wind and construction industries.

Staff of 160+, include 7 PhDs and 35 Masters degree professionals.

This diverse group of highly educated, talented, and motivated individuals produce optimal solutions for our clients' challenges and problems.

Own Assets -

Zee Rig 1 – SemiSWATH Unit

Available for Ready Conversion to Multi-Service Vessel or Accommodations Unit, US Flagged

Zee Rig 3 – Heavy Lift Crane Barge (1100 Mtons)

Available for work as a Crane Barge or for Conversion to Multi-Service Jackup Crane Barge

STAFF MAKE-UP

OWNERSHIP – THREE PARTNERS

Rao Guntur
Executive Vice President

Ramesh Maini
PRESIDENT

Sonny Nejad
Vice President Engineering

- Professional Group of 150+ people
- Includes 7 PhDs and 35 Masters Degree holders
- Project Managers, Construction Managers

- Project Engineers, Analysts, Designers
- Software Developers
- Sales and Marketing Team, and Admin Staff

Engineering	Drafting	Software	Construction Engineering	Other Branches
Structural	Basic Design Drafting	ZenMoor	Shipyard Support	Mumbai, India
Naval Architecture	Legacy Conversions	Neptune	Project Management	Chennai, India
Marine Engineering	General Arrangements	LoSemi	Construction Crew,	Cuernavaca, Mexico
Mechanical	Construction Drafting	LosJack	Supervision and	Johor, Malaysia
Electrical	Bill-of-Material	ZenMAP	Management	Sharjah, UAE
		ZenMAS/WMS	On-board Rig and	Rio de Janeiro, Brazil
		ZenRiser	Yard Construction	
		ZenCrack	Support	
		ZAIMS		

With its core business in Engineering Consulting, Zentech is spread across several verticals including EPC Contracting and owning some Assets which offer unique solutions to the offshore industry.

- EPC Contracting
- Construction Management
- Engineering Consulting
- New-Build Designs
- Assets
- Software

Zentech Verticals

Zentech Services

Type of Services

- Conversion and Upgrade Design
- Repair and Life Extension
- New-Build Vessel Design
- Engineering Design and CAD Services
- Naval Architecture & Marine Engineering
- Structural, Electrical, Mechanical and Piping
- Construction Management Services
- Specialty Software Development
- Vessel, Platform or other Structure Inspection and Life Enhancement Study

Types of Units

- Fixed Facilities : Jackets, Topsides, Modular Rigs
- Drilling Rigs : Jackups, Semi-submersibles, Drillships, Drill Barges
- Offshore Production Units : Jackup MOPUs, SPARs, TLPs, FSOs & FPSOs
- Vessels for Multiple Applications Offshore Construction Vessels,
- Pipelay Barges, Derrick Barges, Loadout Barges, Launch Barges




Analysis Capabilities

Structural Engineering	Naval Architecture & Marine Engineering	Mechanical Engineering	Electrical Engineering
Global	Stability Analysis (Intact and Damage)	P & IDs	Load Analysis
Redundancy	Mooring analysis (static, quasi-static dynamic and fatigue	Isometrics	Circuit Breaker Studies
Fatigue	Motions Analysis (diffraction)	Piping Arrangements	DP systems (up to DP 3)
Site-Specific Analysis	Longitudinal Strength	Complete 3D Modeling	AC – DC systems, new and upgraded
Punch-Through	Tonnage and Freeboard Calculation	Piping Systems up to 15,000 psi	Emergency shut-down systems
Cantilever, Substructure, Drill Floor, Derrick	Loadline Calculations	Firefighting System	Fire detection systems
Crane, Thruster and Other equipment Foundations	Deadweight Survey and Inclining Experiments	System Steam Balance Calculations	Instrumentation
Collision	Displacement and Payload Upgrades	Riser Tensioners Upgrade	Page party systems
Corrosion	Loading Conditions and Preload/Ballasting Procedures	Skidding System Design and Modifications	Obstruction Lighting
Wet and dry Tow		Mechanical Locking System	Aids to Navigation
Earthquake		Calculation for Noise and Vibration	General Alarm Systems
Risers (rigid and Flexible)		HVAC System	Hazardous area classification
			Aligning Distribution

Partial Client List

Drilling Contractors
Construction Companies
Equipment Manufacturers
Oil Companies
Shipyards
Fabricators
Regulatory Agencies
Government Agencies

Partial Client List

AMFELS

UMC Petroleum

MarAD (U.S. Govt.)

Air Force Research Laboratory

Floaters (Drilling) Capabilities (Semisubmersible / Drillships)

Hull Design

- Pontoon, Columns and Hull Design
- Pontoon Sponsons and Column Blisters
- Moon Pool Addition
- Bracings Design / Modifications
- Detailed Structural Design
- Helideck Design
- Quarters Design / Modifications
- Fairlead Support Design

Rig Related

- Rig Design
- Drill Floor Design / Enhancements
- Riser Gantry Crane Support
- Casing Rack Analysis
- Riser Tensioners, Sheaves and Bottles
- BOP / ROV Handling Support Structure
- Bulk Mud Cement System Modifications

Analysis Types

- Stability Analysis
- Dynamic Mooring Analysis
- Motion Response Analysis
- Structural Engineering
- Thruster Vibration Analysis
- Fatigue Life Assessment
- Rigid / Flexible Riser Analysis

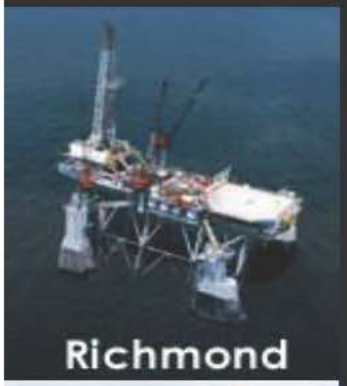
Other Capabilities

- Piping System
- Electrical Engineering
- Ballasting / Deballasting Procedures
- Inclining Experiments
- Operations Manuals
- Onboard Stability & Mooring Advisory Software
- Fabrication and Construction Details

FLOATERS (DRILLING) : SEMISUBMERSIBLES and DRILLSHIPS – Examples of Completed Projects

- Atwood Oceanics
- Diamond Offshore
- Ensco
- Global SantaFe
- Japan Drilling Company
- Marine Drilling
- Noble Drilling
- ONGC
- TOR Drilling
- Transocean
- Seadrill
- Viking Offshore

Atwood Oceanics, Inc.



Drilling tender conversion from semisubmersible

- Damage stability studies
- Operations manuals
- Structural engineering
- Dynamic mooring analysis
- Inclining procedures

Tor Drilling

Tor Viking – Pentagone Semisubmersible

- Extension of mooring system capability
- Mooring analysis for various depths
- Stability analysis for top drive addition
- Addition of new cranes
- Addition of decks
- Modifications of cellar deck area
- Operations manual
- Ballasting / deballasting procedures

Diamond Offshore

Ocean Confidence

- Conversion from Accommodations to Drilling Unit
- Construction Drawings
- Riser gantry crane support, deck superstructures
- Drill floor modifications
- Bracket Modifications
- Piping systems
- BOP handling support structure
- Moon pool addition
- ROV handling structures

Ocean Quest
Ocean Star
Ocean Victory

- On-site supervision
- Dry-docking Analysis
- Operations manuals
- Mooring advisory on-board load, & stability analysis
- Construction drawings
- Addition of column blisters, pontoon sponsons
- Mud pumps, mud systems
- Riser tensioners, sheaves and APV bottles
- New cranes, lifeboats
- New forward and aft decks

Ocean Valiant

- Motion response
- Structural analysis to DEN Code
- Post damage structural behavior
- Collision analysis (consideration for
- denting and yielding, collapse)

Construction Engineering for Enhancement of Drilling Capacity

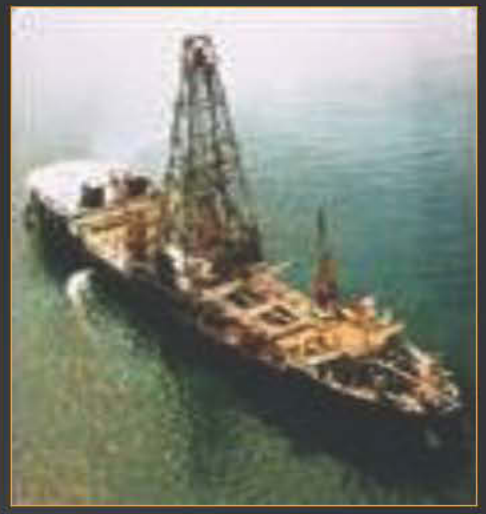
GlobalSantaFe

Arctic I and III

Extended Operating Water Depth Capability

- Column and Pontoon Blisters
- Stability Analysis
- Structural Design
- Motion Response Analysis
- Mooring Analysis (w.d. 2,500 to 5,200 ft.)
- Onboard Loading and Mooring Advisory System

Robert F. Bauer



Upgrade for Deeper Water Depth

- Study for Upgrade
- Substructure Analysis
- Helideck Design
- Casing Rack Analysis
- Weight Calculations

GLOBALSANTAFE

Japan Drilling Company

Naga 1

Semisubmersible Upgrade

- Helideck Extension and Outfitting
- New APV Rack for 21 Vessels
- New Deck for Choke Manifold and MGS
- New Windbreaker Around Drill Floor
- New Rig Air Compressor and Dryer
- New Centrifuge Deck
- Piping Systems

Marine Drilling

New Construction
Semisubmersible

- Mooring analysis
- Structural analysis
- Motions analysis
- Upper hull structural design engineering and drafting

Marine 700

Noble Drilling

SOW
Project Management
Attend Model Tests
Study Model Test Results
General Arrangements
Weight Control
Lightship Buildup
Loading Conditions
Stability
Motions, Air-gap
Global Strength
Redundancy
Fatigue
Drill Floor / Substructure
Sponsons : Columns
Truss Braces
Pontoon Sponsons

Mud Pits
Mud Process House
P-tank Foundations
Drill Floor
Substructure
Moon Pool Area
Riser Deck
Riser Handling System
Drill Pipe and Casing Rack
Catwalk
Thruster Foundations
Dry Transportation
Misc. Structures & Foundations
Harbor Mooring Winches
Fairlead Foundations
Anchor Rack
Rig Visits

Main Deck
Quarters
Helideck
Fwd Lifeboat Platform
Aft Lifeboat Platform
Crane Pedestals
Package of Drawings for bids
Preliminary Ops Manual

Alternative Concepts
Tween Deck Design
Study for DP3 vs. DP2
Electrical (except DP)
Piping
Ventilation
Instrumentation & Controls

10,000’ WD, DP2 Class Rig

Noble Dave Beard (Shelf Class)

Noble Danny Adkins & Noble Jim Day (Bingo Class)

Noble Drilling

Noble Roger Eason

Conversion to DP II for Petrobras Contract

Feasibility Study

Basic Design

Detailed Design

Stability analysis, Motions Analysis

Design engineering to remove and replace Stern section with new thrusters

Design engineering to add quarters and add thrusters in the Bow section

Design engineering to add Port and Starboard Sponsons

Lorris Bouzigard & Therald Martin

- Increase operating water depth to 4,000 ft.
- Enhanced pay-load and stability
- Accommodations increased to 120 persons (2-man rooms)
- Enhanced moon pool area
- New life boat, crane foundations
- P-tank, foundation and BOP garage
- Global and fatigue analysis

Semisubmersible Modifications

Noble Drilling

Paul Wolff

Conversion From Submersible to DP Semisubmersible

- Feasibility study
- Stability analysis
- Motion response
- Mooring analysis
- Riser analysis
- Options studies for increased VDL:
  - Column blisters
  - Increased column diameter
  - Additional column

Homer Ferrington

Increase Water Depth Capability

- Crane column and lifeboat foundation
- New sponsons
- Pontoon extensions
- Drill floor substructure
- Main deck extension
- Working in West Africa

Oil & Natural Gas Companies, Ltd. (ONGC)

Sagar Bhusan

Mooring Analysis for Drillship

- Quasi-static and Dynamic Analysis for:
  - Intact
  - Damage
  - Mooring Analysis
  - Transient Conditions
- Water Depths of 1,300’ to 3,000 ft.

Viking Offshore

Pentagone Semisubmersible

Converting Bare Deck to Drilling Rig

- Analysis and Detailed Design
- Structural, Naval Architecture, Piping, Mechanical designs.
- Equipment specifications and selection
- Presence of site team for shipyard support
- Shipyard conversion support
- 3D modeling and clash checks

Seadrill Americas

West Sirius

Various Engineering Projects

- Structural engineering
- Piping
- Electrical
- Software development
- Development of indexing system for as-built drawings

Transocean Offshore

Amirante

Various Engineering Projects

- Structural engineering (substructure)
- Crane installation engineering
- Naval architecture
- On board system
- Tensioners

Jackup Capabilities

Hull Design

- Hull Design / Modifications
- Leg Design / Strengthening and Leg Extensions
- Spud Can Design / Enhancements
- Sponson and Cantilever Design
- Slot to Cantilever Conversions
- Cantilever Extensions / Enhancements
- Mat Design / Modifications

Rig Component Design

- Helideck Design
- Quarters Design
- Water Tower Design
- Drill Package Design / Enhancements
- Skidding Systems Design
- Bulk Mud Cement System
- Elevated Pipe Rack Design
- Crane Foundations
- Life Boats

Analysis Types

- Naval Architectural Studies
- Structural Engineering and Drafting of Various Components
- Site Specific Assessment (Simple to Complex)
- Piping Systems
- Electrical Engineering

Other Capabilities

- Inclining Experiments
- Operations Manuals
- Onboard Stability Software

JACKUPS / LAND RIGS– EXAMPLES OF COMPLETED PROJECTS

- ENSCO International
- GDI (Gulf Drilling International), Qatar
- Global SantaFe
- Hercules Offshore / TODCO
- Marine Drilling
- Nabors Offshore
- NDC (National Drilling Company), Abu Dhabi
- Noble Drilling
- OASES
- ONGC
- Parker Drilling
- Perforadora Central
- Pride International
- ROWAN Companies
- Songa Offshore
- Transocean Drilling

ENSCO International

All 38 Jackup Drilling Rigs:
Between 1991-1999
(LeTourneau, Levingston, Bethlehem, Baker Marine, KFELS, Modec, Hitachi)

- Extended cantilever beams / added new beams
- New or enhanced spud cans
- New or modified drill floors
- New quarters and helidecks
- New water towers, mud process houses
- Added leg length, Modified Spud Can
- Increased VDL, Inclining experiments
- Operations manuals
- On-board systems

ENSCO

Gulf Drilling International (GDI), Qatar, United Arab Emirates

Gulf-3: 2004

- LeTourneau Class Jackup Drilling Rig
- New cantilever package with sub-base
- Push-up and hold-down structures
- New drill floor
- Design of all new electrical cabling, MCCs
- New quarters and helideck for CAP-437
- New mud pumps and more mud capacity
- Engineering done to ABS class
- Operating as a MOPU in Iran

Goimar X10 – 3000 HP Platform Rig

- Modular
- Self Erecting
- Light weight

GLOBALSANTAFE

Cantilever Extensions (LeTourneau 116-C Class)

- Adriatic I
- Adriatic II
- Adriatic III
- Adriatic IV
- Adriatic VI
- Adriatic VII
- Adriatic VIII
- Adriatic IX
- Adriatic X
- Adriatic XI

Cantilever Extensions (LeTourneau 82 S-DC Class)

- High Island I
- High Island II
- High Island III
- High Island IV
- High Island V
- High Island VII
- High Island VIII
- High Island IX

GLOBALSANTAFE

Hercules Offshore / TODCO

Hercules (TODCO) 208 Upgrade

- Basic engineering
- Malaysia Yard detail engineering by Zentech Malaysia office
- Upper Skid Modifications
- Crane Upgrade
- Quarters Upgrade
- Leg Strapping
- Engine Room Upgrade
- Aux Machine Room Upgrade
- Pump Room and Mud Pit Room Upgrade
- Emergency Generator Upgrade
- Rig Air Room Upgrade and Ventilation Analysis
- Helideck Extension and Outfittings
- Inclining Experiment

Hercules 26 LeTourneau Class 150-44C Jackup Drilling Rig

- Cantilever enhancement
- Hull widening
- Longer legs
- New drill floor
- Three new mud pumps
- New operations manual

HERCULES Offshore

Marine Drilling

Various Engineering Projects
Including Creation of New Operations Manuals






Marine 15

Marine 16

Marine 17

Marine 18

Marine 201

Marine 202

Marine 300

Marine 303

Marine 304
- Cantilever Conversion
- LeTourneau 116S Design

Marine 305
- Cantilever Extension: 50'
- Levingston 111-C Design

300' Water Depth Capacity

NABORS OFFSHORE CORPORATION

Nabors 660
(ex Ocean Warwick): 2006

- Cantilever conversion to reach 70 ft.
- Hull strengthening and widening
- New cantilever package
- New drill floor
- Additional mud capacity, 3rd mud pump
- 3 new, stronger legs and spudcans
- Added jacking pinions
- New operations manual

Various Engineering Projects Offshore Platforms

Sundowner X

Sundowner XI

Super Sundowner XII

Super Sundowner XVII

Amoco Trinidad

Sundowner 240K Rig

Nabors 269

Sundowner Rig 801

Sundowner Rig 802

Sundowner Rig 803

National Drilling Company

Al Ittihad: 2004

- Conversion from a slot to cantilever
- Life enhancement
- New cantilever package
- Push-up and hold-down
- Complete rig re-powering
- All new electrical cabling
- New engines and MCCs
- New quarters and helideck for CAP-437
- New mud pumps and increased capacity
- Shipyard construction support

Junana: 2006

- Conversion from a slot to cantilever
- Life enhancement
- New cantilever package
- Push-up and hold-down
- Complete rig re-powering
- All new electrical cabling
- New engines and MCCs
- New quarters and helideck for CAP-437
- New mud pumps and increased capacity
- Higher VDL capacity
- Added Jacking Pinions
- Shipyard construction support

Al Ghallan: 2009

- Conversion from a slot to cantilever
- Life enhancement
- New cantilever package
- Push-up and hold-down
- Complete rig re-powering
- All new electrical cabling
- New engines and MCCs
- New quarters and helideck for CAP-437
- New mud pumps and increased capacity
- Only engineering done to GL Class

NOBLE DRILLING

Cantilever Designs

LeTourneau 53-S	Leonard Jones	Slot to Cantilever	65’
LeTourneau 82-SD-C	Chuck Syring	Upgrade	40’
LeTourneau 84-S	Eddie Paul	Extension	70’
	Bill Jennings	Extension	70’
Levingston 111-S	John Sandifer	Slot to Cantilever	50’
Levingston 111-C	Sam Noble	Extension	50’
	Lewis Dugger	Extension	50’
	Gene Rosser	Extension	50’
	Ed Holt	Extension	70’
F&G L-780 Mod II	Percy Johns	Extension	40’ to 52’
	Tommy Craighead	Extension	40’ to 55’
	Kenneth Delaney	Upgrade	40’
	George McLeod	Extension	38’ to 40’

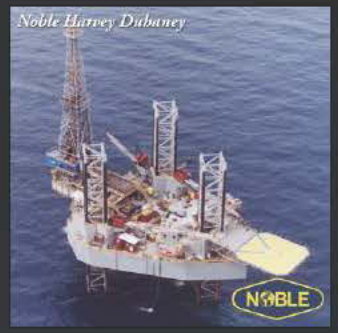
NOBLE DRILLING

Noble Eddie Paul 1995

Noble Bill Jennings Mid -1990s

Noble Leonard Jones: 1998

- LeTourneau 53 into 116C Class
- Cantilever conversion to 70 Ft.
- Hull strengthening and widening
- New cantilever package
- Additional mud capacity
- 3rd mud pump
- Leg, spud can strengthening
- Added leg length



Noble Harvey Duhaney Mid 1990s

Noble John Sandifer 1995

- Levingston 111-S into 111-C Class
- Cantilever conversion to 55 Ft.
- Hull strengthening and widening
- New cantilever package
- Additional mud capacity
- 3rd mud pump
- Leg, spud can strengthening

Noble Lewis Dugger: Mid-1990s

Perforadora Central

TONALA (Ensco 76)

New Construction Jackup
LeTourneau Super 116-C Design

- Structural Engineering and Drafting of Various Components
- Electrical Engineering
- Inclining Experiment
- Quarters Installation

Songa Offshore

Songa Neptune
(ex ENSCO 64): 2006

- LeTourneau Class Jackup
- Cantilever conversion to reach 70 feet aft of transom
- Hull strengthening & widening
- New cantilever package including new drill floor
- Additional mud capacity and 3rd mud pump
- 3 new stronger legs and spud cans
- Added jacking pinions
- New operations manual

carso
INFRAESTRUCTURA Y CONSTRUCCION

Independencia I – F&G JU2000E

- Assistance with rig construction procedure including launching
- Review of 3 construction yards
- Review of Project Schedule
- Review of Project Manning including man-hours
- Review of equipment specifications
- Witness of FAT at various sites around the world
- Assistance with development of JIGS Drawings
- Review and assistance with Detail Engineering (Mechanical, Piping, Instrumentation, Safety, Electrical, Navigational Aids, Secondary Structures)
- Assistance with Commissioning Procedures

carso
INFRAESTRUCTURA Y CONSTRUCCION

Construction Sequencing

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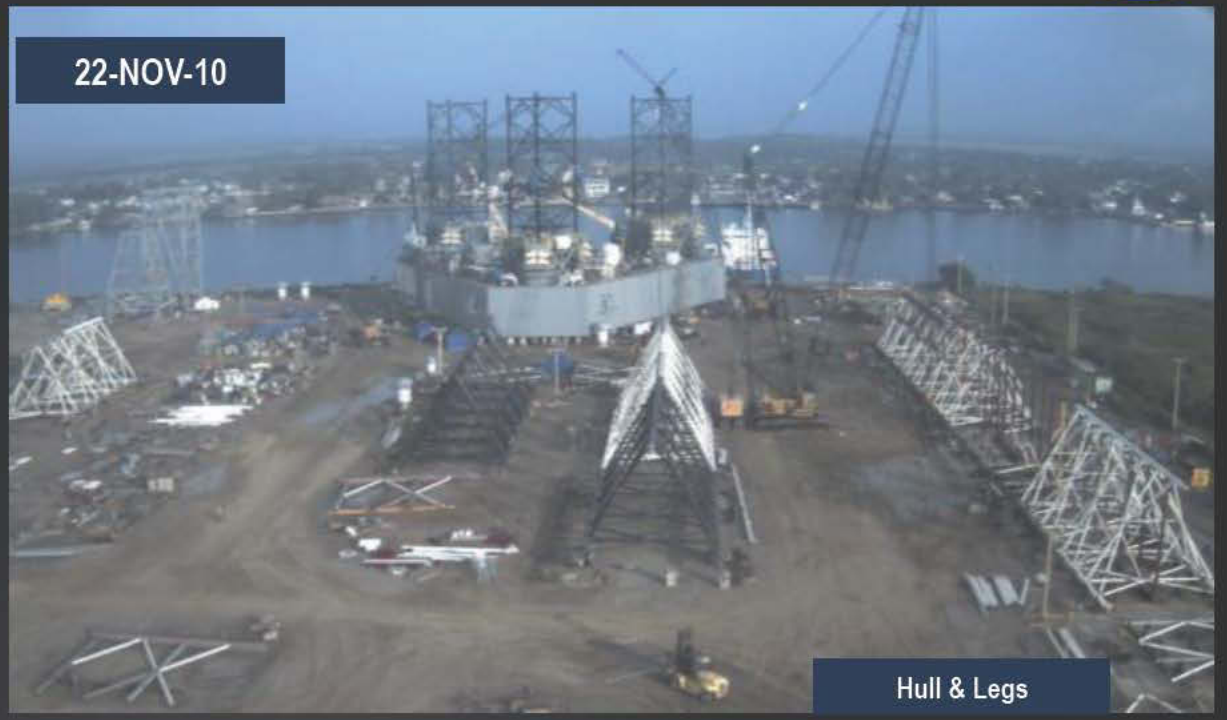
INFRAESTRUCTURA Y CONSTRUCCION

Construction Sequencing

22-NOV-09

22-NOV-10



Hull & Legs

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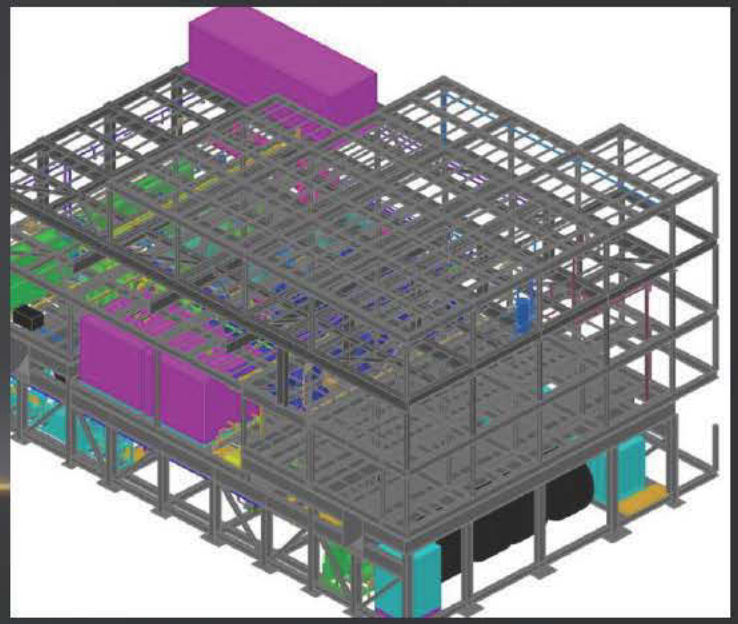
Parker Drilling : Arctic Alaska Drilling Unit for BP

- Zentech did all the engineering completely in 3D.
- Land Rig will operate in severe cold temperatures down to -60 deg. F
- Modular rig with three modules : Utility, Mud & Drill Modules
- Mast, Drill Floor, Substructure, Mud Process House, all other structures

- All piping systems – Mud LP & HP, Engine cooling, Drill water, Fire Main, Air
- Complete HVAC including Boiler room
- Engine Room and associated systems, foundations, utilities
- Transportation, Lifting and Installation engineering
- The module is being constructed in Vancouver, Washington State
- Rig will travel at 1 mph on 17’ diameter wheels



Pride International

PRIDE KANSAS & TEXAS (Bethlehem Class Jackups)

- Cantilever conversion (only Bethlehem class rigs ever converted)
- 1st two mat rigs converted to cantilever
- Mat enhancement
- Leg strengthening
- Additional quarters
- Most piping systems

Rig Design for Kizomba and Holstein

- Conceptual Drilling Rig Layouts and Studies
- Detail Structural Design for:
  - Inplace Conditions
  - Transportation Analysis
  - Loadout Studies
- Integrated Structural Analyses for:
  - Topsides Interaction
  - Transportation Barge During Tow
  - Prepared Structural Drawings
- Fabrication Yard Support with Clarifications

Transocean

A NEXT GENERATION DRILLER IS / GLOBAL

11 GlobalSantaFe Jackups
3 Transocean Jackups

(Letourneau 116C, Super 300, 82-SDC; Various Class of CFEM, Baker Marine Jackups)

- Extended cantilever beams and new or modified drill floors
- Added leg length and new or enhanced spud cans
- New mud process houses
- Increased VDL
- Inclining experiments
- Operations manuals
- On board systems






Zentech Capabilities in Land Rig Design

- Helicopter Drilling Rig for Parker Drilling Company
- Mud System, Mud Pits
- Mast and Substructure Design for a number of Land Rigs
- Converted Land rigs to Platform rigs for Nabors International
- Design of Mast for a number of Land rigs for Branham Industries
- Design of Mast for NOV (ex Dreco) for earthquake zone
- Design a new Land rig for Grey Wolff Drilling Company (now Precision Drilling)
- Design a new Land rig for WZ Industries

Jacket Structures Capabilities

- In-place Analysis for Storm and Design
- Load Out Analysis
- Launch Analysis, Upending, and Flotation
- Transportation Analysis and Sea-Fastening Design
- Lifting Analysis
- Dynamic Analysis
- Spectral Fatigue Analysis for In-place and Transportation
- On-bottom, Unpiled Stability, and Mud-mat Analysis and Design
- Integrated Pile Analysis and Design
- Non-linear Pushover Analysis
- Seismic Analysis and Ductility Assessment
- Machine Vibration Analysis for Deck Equipment
- Blast Analysis for Accidental Over-pressure
- Boat Impact Analysis and Fender Design

New Build Platform Drilling Rigs

1. Currently available new build designs
   - 1000 HP.....~8,000 feet drilling depth
   - 1500 HP.....~12,000 feet drilling depth
   - 2000 HP.....~20,000 feet drilling depth
   - 3000 HP .....~28,000 feet drilling depth
2. Our designs are based on new technology
3. 5 Packages (Drilling, Power & Support Systems, Pipe Rack, Accommodations, Helideck)

Production Systems : Jacket / Fixed Structures, MOPUs, FSOs, FPSOs - Examples of Completed Projects

- Bumi Armada
- Chevron
- Helix Energy
- Kerr McGee
- Moss Maritime
- Nabors
- Oceaneering International
- Ocean Energy
- PEMEX
- Perisai Petroleum
- Petrobras
- Pride International
- Tanker Pacific
- Other Examples

Bumi Armada

TGT FPSO Topsides

- Basic Engineering and Design of Top Side Structural Modules
- Detail Engineering and Design of Top side Structural Modules
- Erection Engineering for Structural Modules
- Documentation and Reporting for Structural Analysis
- Maximum Lift Weight of Structural Modules Varied between 600mt to 1600mt
- Set up Basic design Procedure for Piping Stress analysis for all Top side piping in Modules and Between Modules
- Some of the major Modules handled
  - (1) Power Generation Module
  - (2) HP /LP Compressor Module
  - (3) Condensate Stabilizing Unit
  - (4) Switch Gear Module
  - (5) Gas Knock Out Module
  - (6) Produced Water Module

Chevron

INDA & IDAMA

- Jackup Production Units
- Conversions from Drilling rigs
- Corrosion measurements to modify existing steel
- Naval architectural studies
- Helideck redesign
- Quarters modifications
- Mat modifications
- Hull modifications

Kerr - McGee

Boomvang & Nansen SPARs

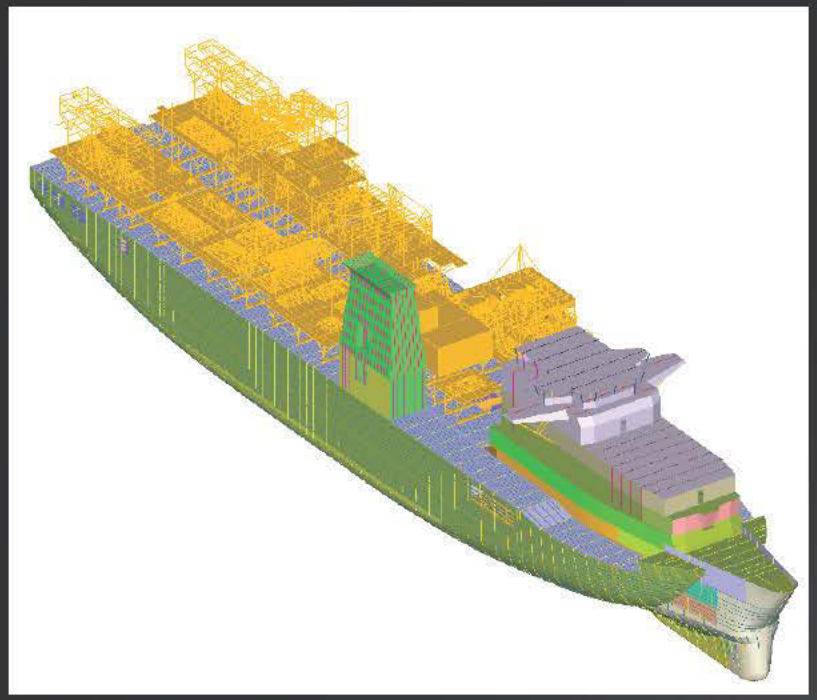
- Structural, naval architectural, mooring & risers feasibility analysis
- Risk management analysis
- HSE & quality plan review & analysis
- Fabrication & construction plan review
- Hydrocarbon processing and operations viability review

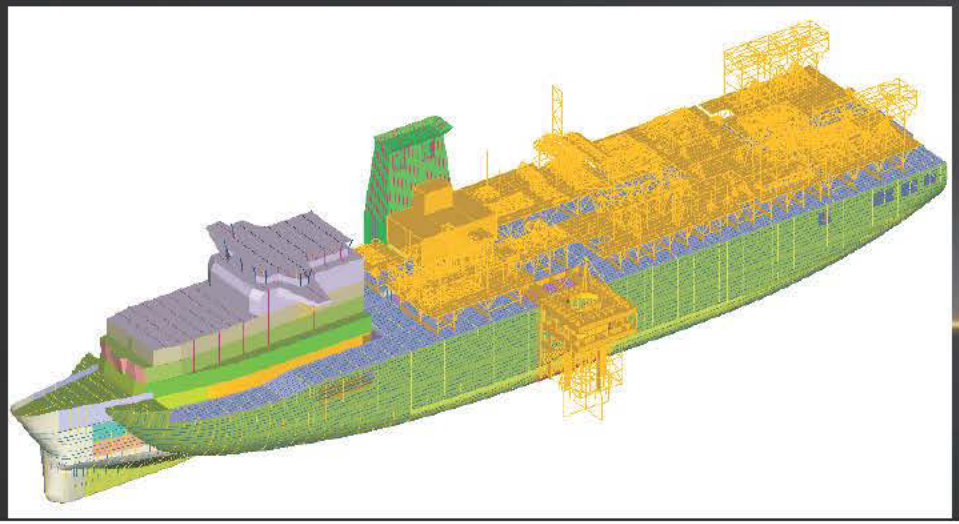
KERR-McGEE CORPORATION

Helix Energy

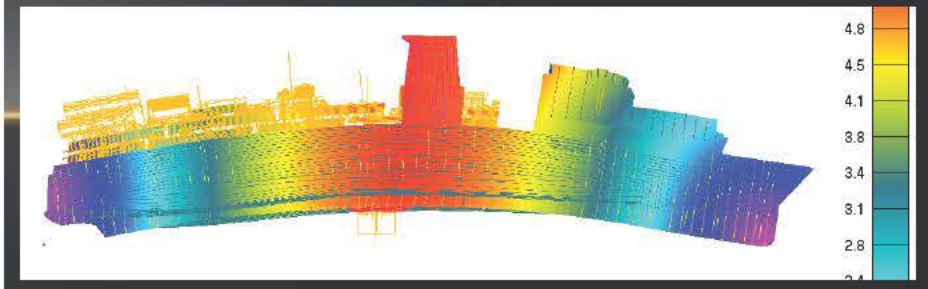
Helix Producer FPSO

Global Hull Strength



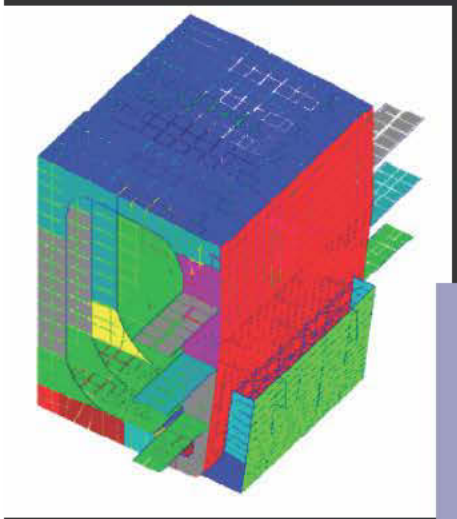


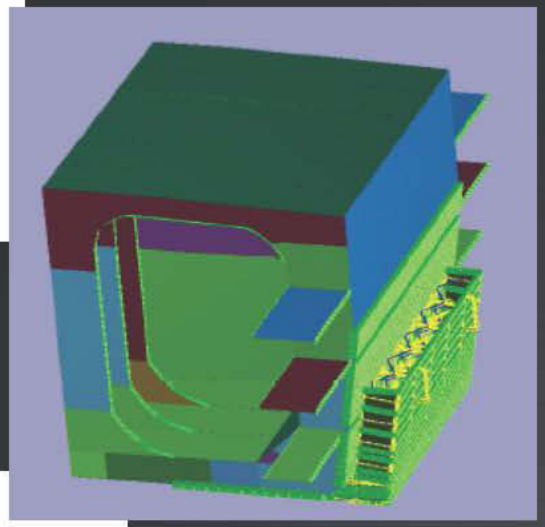
- Preparation of detailed finite element model (over 1.2million elements) including topside modules, deck-house, funnel and disconnectable transfer system.
- Hydrodynamic analysis to extract site-specific wave pressures on the structure.
- Global analysis using site-specific wave loads (obtained through hydrodynamic analysis)
- Global analysis using CSR Rule based methods to cover transit operations.

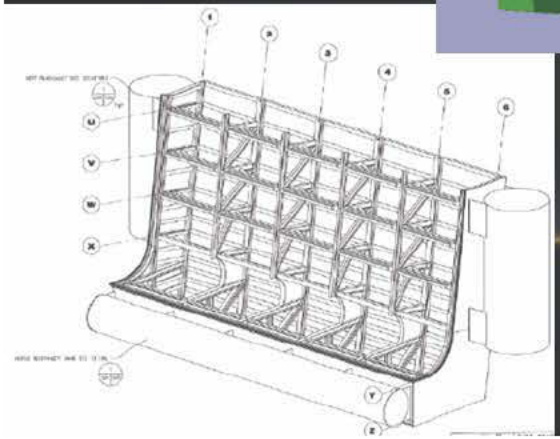


Kiewit Offshore

Terra Nova FPSO







Cofferdam for Bilge Keel Repair

- Replacing bilge keels on Terra Nova FPSO, while afloat
- Local cofferdams build along the side shell
- Cofferdam was tested against a hull mockup before arrival of FPSO at site
- Reviewed the cofferdam for structural, electrical, and HVAC designs
- Structural model included cofferdam and part of the FPSO hull

Moss Maritime

Octabouy

- Deep draft semi with 4 columns supported by pontoons arranged in octagon shape
- Zentech designed the complete lower hull and is approved by ABS
- Structural, Naval Arch, Piping, Electrical and HVAC designs
- Unit currently under construction in China (Aug 2011)
- Will work in the North Sea first and then in the Gulf of Mexico
- 116,000 Ton displacement, 12,000 Ton topsides, 175,000 bbls storage
- 8 inch flexible export riser for gas
  - 16 in flexible export riser for oil
  - 20" and 14" drilling risers
  - 16 line catenary mooring system - chain

OCEANEERING

Oceaneering International, Inc.

Mobile Offshore Production Unit

Conversion from Drilling Rig

- Naval architectural studies
- Third party review of structural analysis, stability, sliding resistance, etc.

Ocean Energy Gulf Tide

Ocean Energy

Mobile Offshore Production Unit

Conversion from Drilling Rig

- Naval architectural studies
- Structural Analysis of plated model
- Corrosion assessment of legs
- Fatigue analysis and Connection design
- Hull strength and fatigue analysis
- Leg analysis
- FEA for assessing SCFs
- Accommodations modifications
- Hull mechanical and electrical engineering

PEMEX

Life Enhancement Studies

Reassessment of 63 platforms (Jackets and decks) in the Bay of Campeche for Pemex. The work involved modeling of the jacket, deck and piles, in-place analysis, nonlinear pushover analysis, spectral fatigue analysis and risk-based inspection planning.

- Dynamics and Static Analysis
- Pushover Analysis
- Seismic Analysis
- Seismic - Pushover Analysis
- Risk Analysis

Tanker Pacific

FSO Caspian Sea Upgrade

- Accommodations Upgrade
- New Boat Landing Tower
- Electrical Engineering
- Telecommunications Upgrade
- Increased Handling Volume for Produced Water
- Chemical Injection Fittings
- Increased Vent Tower Height
- Mooring Upgrade – Single Mooring to Twin
- Two New Life Boat Platform
- Sewage Treatment Plant Replacement
- Addition of Water Maker (RO Plant)

Perisai Petroleum

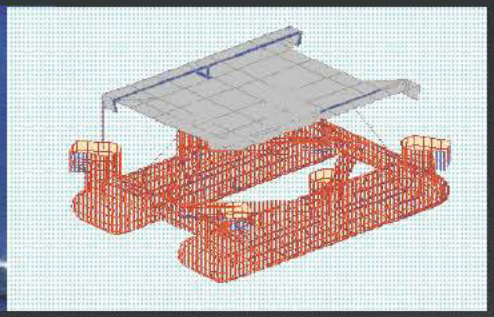
MOPSU : Mobile Offshore Production, Storage and Offloading System

- Completed FEED Study for this New Concept, for Perisai Petroleum
- Currently undertaken Detailed Engineering Work

- Innovative Engineering Solution
- Can perform functions of a typical Platform + Jack-up Rig + MOPU + FSO combination, as one unit
- Cost effective, Easy to Deploy
- Detachable Well-head Platform
- Scope of Work included :
  - Conceptualization and Basic Design
  - Naval Architectural
  - 100% of Structural Work
  - 100% of Piping work
  - 100% Process related Work for the FEED Study
  - 100% Electrical Design
  - All Accommodations and Safety related Design
  - Complete Weight and Materials Estimate
  - Assistance with Shipyard Bids

Petrobras

Petrobras P-27 FPS
(Under subcontract for Statoil)

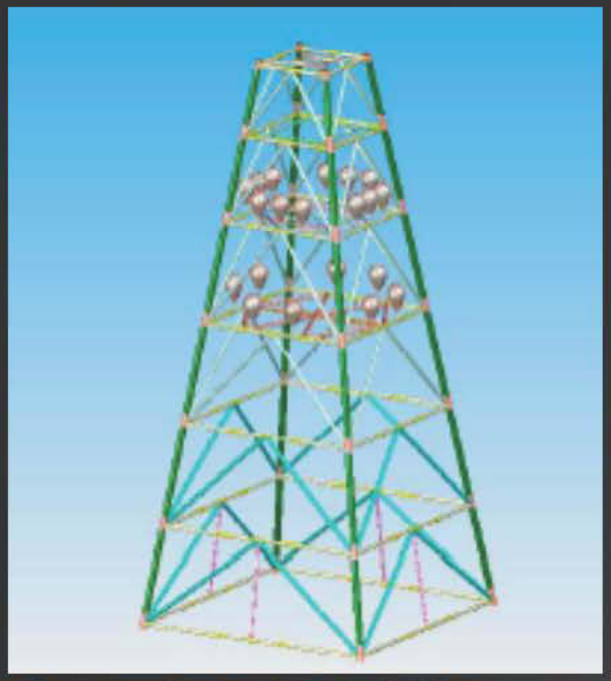


- Conversion from Drilling to Production Unit
- Motion response analysis
- Structural analysis and design modifications
- Damage condition analysis
- Fatigue assessment
- Riser analysis of 29 production risers
- Computer programs: Neptune, StruCAD*3D, Flexriser, StabCAD

Pride International
Kizomba – Rig Design

- Conceptual Drilling Rig Layouts and Studies
- Detail Structural Design for:
  - Inplace Conditions
  - Transportation Analysis
  - Loadout Studies
- Integrated Structural Analyses for:
  - Topsides Interaction
  - Transportation Barge During Tow
- Prepared Structural Drawings
- Fabrication Yard Support with Clarifications

Petrotech Peruana

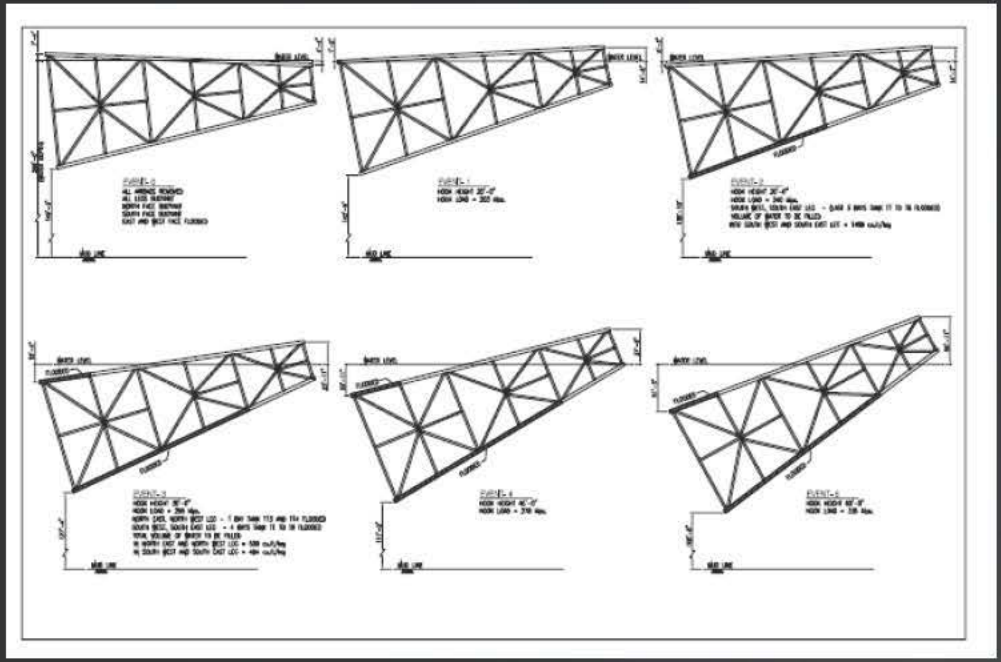


Jacket Relocation in Vertical Position

- Reassessment of five jackets : included pushover analysis (PN-8, LO-7, LO-16, Z, KK) - 2001
- Petrotech Peruana's jacket from ELALTO field to ORX-A location : Design engineering for relocation of the existing jacket platform ORX-A (water depth 192 ft) to a new location (water depth 250 feet) offshore Peru. An extension piece at the upper end of the jacket is installed to cater to the additional water depth. The jacket to be transported in a vertical position to a new location in floating condition using air bags, without the help of a derrick barge. – 2002
- Jacket LT-15 from Negritos field to San Pedro Este location : Design engineering for relocation of LT-15 jacket from Negritos (water depth 122 ft.) to Sanpedro Este (Bahia Sechura) area (water depth 117 ft.). The jacket to be transported in a vertical position to a new location in floating condition using air bags, without the help of a derrick barge – 2005
- Jacket LO2 to PN-13 location - 2005

Petrotech Peruana

Salvage of Jacket Santa Teresa ST-1

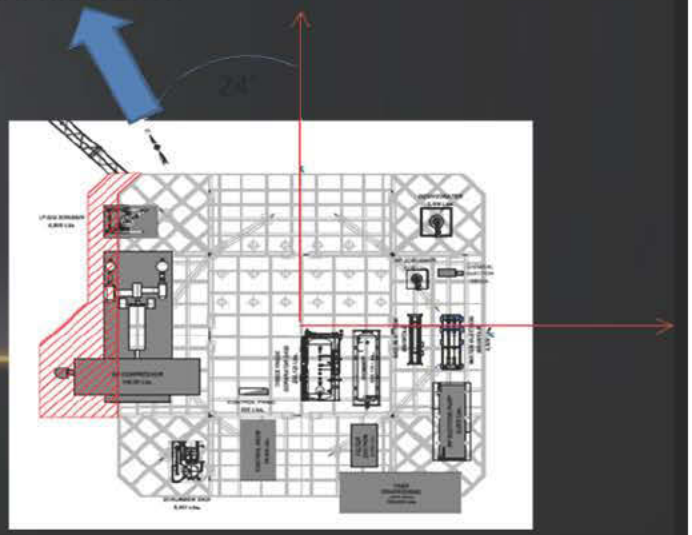


New jacket Santa Teresa ST-1 of Petro-Tech Peruana S.A. (now Savia) sank to the sea floor during initial upending. Zentech Inc. had performed Floatation analysis to salvage the jacket and re-float it to the surface. Project date January 2010.

BPZ

Design of Jacket and Deck Structures for BPZ Peruana

- CX-15 Platform for 180 to 200 ft Water Depth
- Located in highly seismic area
- Includes design of deck, jacket, piles covering all aspects of engineering.
- Zentech is current undertaking feasibility study for a new platform in a second location AX-2 for BPZ.



Other Production Systems Experience

Client	Date	Work
Joint Industry Project (By AMOCO, ARCO, Mobil, Shell, Texaco)	Early 1990s	Developed software incorporating API-2A, AISC-LRFD, ASD codes
Pool Company	Early 1990s	Seismic push-over analysis of drill rig structure for **Rig 489** for Maui platform, New Zealand.
Oceaneering, Apache Energy Ltd. (Australia)	1999	3rd party verification of engineering for **Legendre Ocean Legend** MOPU.
Kerr McGee	Late 1990s	Due-diligence study for **Nansen & Boomvang SPARS**
Kerr McGee, Cal Dive	Late 1990s	Due-diligence study for **Gunnison SPAR**, used for bank's risk evaluation for investment decision.
PEMEX (R.S. Platou/Nortech)	Mid 1990s	Assessment of commercial value of gas-gathering platform complex for investors.
Petro-Tech Peruana, Peru	Mid 1990s	Push-over analyses of offshore platforms **PN-8, LO-7, Z and KK** for insurance underwriters.

Other Jacket Structures Experience

Examples of Projects of Zentech Personnel before Joining Zentech

- Design and engineering of more than 80 platforms in Bombay High, South Bassein, Ravva, and Godavari, offshore India, for Engineers India Ltd. on behalf of the national oil company ONGC. The engineering involved from concept to finish including field development plan, detail engineering, drawings, installation engineering, fabrication and installation supervision etc.

- Platforms involved a wide range of water depths and services such as Production and Process, Well Platform, Living Quarters Platform, Flare and Bridge tripods etc.

- Overseeing the structural design for Qatar General Petroleum Company for their North Field Gas Development Project involving several jackets. It included review and approval of the engineering performed by Bechtel, UK and Technip, France.

Barge Capabilities

Designs

- Main Hull Design
- Tub Analysis and Design
- Design of Pipelay Facilities
- Equipment Layout
- Local Foundations
- Quarters / Helideck Design

Other Studies

- Tank Designs
- Oily Water / Bilge Systems
- Electrical Engineering
- Fabrication and Construction Plan Review
- Fatigue Life Assessment

Analysis Types

- 3D Structural Analysis
- Crane Boom / Boom Rest Analysis
- Stinger, Ramp, and A-frame Analysis
- Stability Analysis
- Dynamic Mooring Analysis
- Motion Response Analysis
- Longitudinal Strength
- Fatigue Analysis
- Lift Analysis

Other Capabilities

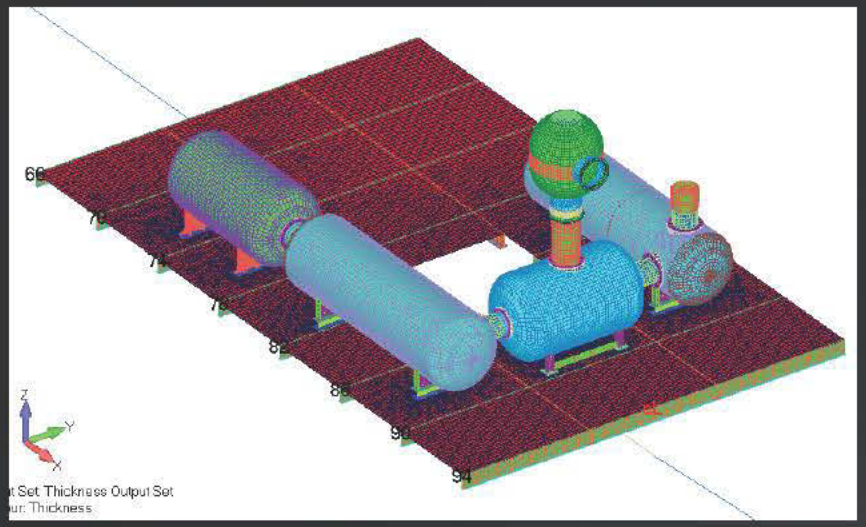
- Structural Engineering and Drafting of Various Components
- Construction Drawings
- Onboard Stability and Mooring Advisory Software
- Ballasting / Deballasting Procedures
- Inclining Experiments
- Operations Manuals
- Docking Plan

Barges (Various Types) – Examples of Completed Projects

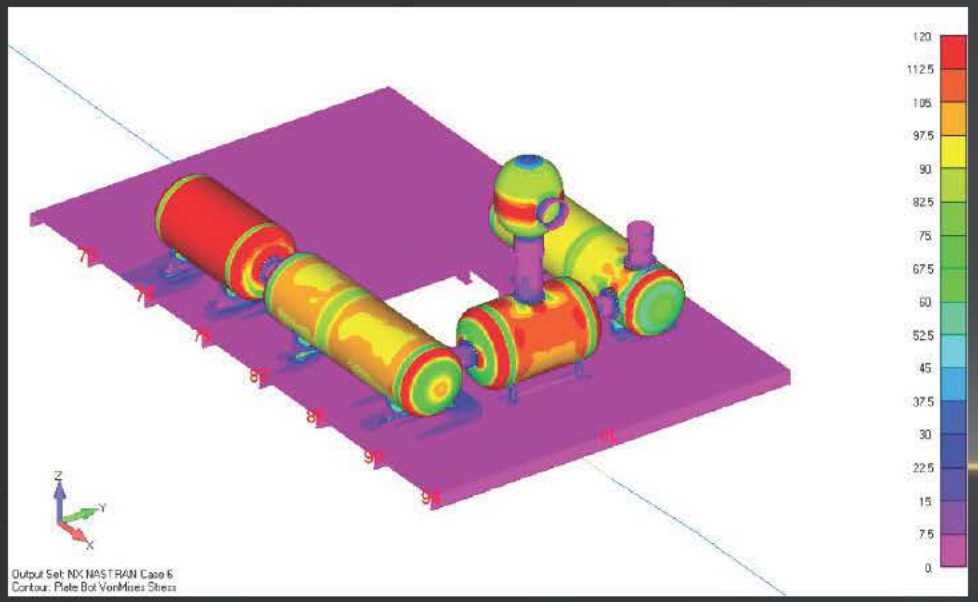
- CalDive International – DSV Eclipse
- CalDive International – Kestrel
- CalDive International – Midnight Express
- Cross Maritime – Cross MAR 7, Cross MAR 14, Cross MAR 21
- Helix Energy Solutions – Intrepid
- Horizon Offshore Contractors
- Marlin Offshore – Searex IX
- Marlin Offshore – WD Kent
- Offshore Specialty Fabricators – DB Raeford
- Transcoastal Marine Services – Atchafalaya Barge

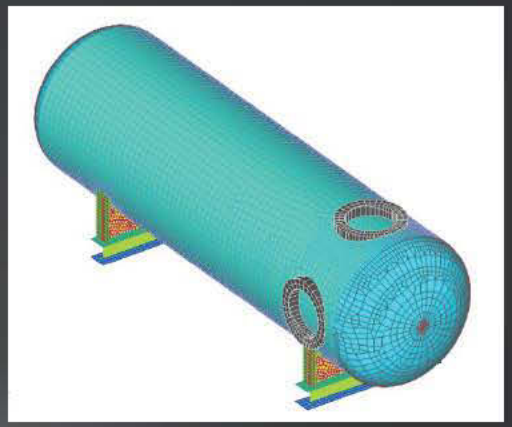
CalDive International

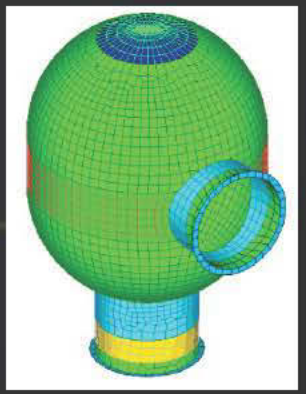
DSV Eclipse



- The DSV Eclipse is equipped with four deck decompression chambers (DDC – 1, 2, 3, 4) and a submersible diving chamber (bell).
- The objective of the finite element analysis is to obtain the water depth rating of the pressure vessels.







CalDive International

Kestrel

Modification of Reel Pipelay DPS2 Vessel to Derrick Vessel

- Liaison with Clients & Class & trips to vessel in Trinidad to determine scope of work
- Estimates of all removal item weights
- Estimation of new Lightship weight and CGs
- Structural analysis, drawings, Class approval of new Pedestal mounted Stern Crane
- New Stern Crane Boom Rest design
- Preparation of new General Arrangement and Fire Safety Plans with Class Approval
- Foundation analysis for new Portable accommodation
- Liaison with shipyard including trips
- Stability Modeling, Analysis and Final Trim and Stability Booklet
- Development of Stability and Longitudinal strength program

CalDive International

Midnight Express

Complete engineering from preparing design basis, doing the design, preparing construction specifications, shipyard bid package, site supervision

- Prepare Design Basis
- Weight Control and Lightship Estimate
- Establish Loading Conditions
- Stability Analysis
- Motions Analysis
- Incline Experiment

- Longitudinal Strength Analysis
- Model Test Planning and Attendance, results review
- Preparation of Demolition Drawings
- Reel arrangement and foundations
- Reel Installation Interface
- Pedestal Crane Design
- Knuckle boom crane interface engineering
- Modification to existing crane
- Crane Cable Sheave Interface Dwgs
- AmClyde Crane boom rest Design

- Hull structural modifications
- Rescue Boat Platform Design
- ROV Systems Foundation
- Deck Reinforcement for Portable Reels
- Sponson Design, Engineering, Hull Interface
- Bilge Keel Modifications
- Wingwall Modification
- HPU Encl. & House Design
- Design of Removable Deck
- Winch House Design

- Winch Foundation Design
- Double Bits Foundation
- Electrical Systems Modification and Reel Control System
- Power Generation and Power Distribution System
- Renew DP Controller Database
- Piping System Modifications
- Pump Sizing Calculations
- Construction Specification
- Shipyard Bid Package

Cross Maritime

Crossmar 21

Modification from Deck Barge to DP3 Offshore Utility Barge

- Development of GA drawings with iterations per Client and Class requirements
- Estimation of new Lightship weight and CGs and Loading Conditions
- New Compartmentation and design of new bulkheads below deck
- Structural analysis, drawings, for modified helideck design
- Structural analysis and drawings for new Thruster and Power Pack supports
- New Forecastle structure and Bulwark design
- Foundation analysis for new Portable accommodation
- Foundation for Storm Anchor Winch and Anchor rack
- Development of all Piping Schematics
- Liaison with shipyard including trips
- Stability Modeling, Analysis and Final Trim and Stability Booklet
- Longitudinal Strength Analysis
- Motions Analysis

Helix Energy Solutions

Intrepid

Modification / Upgrade of Reel Pipelay DPS2 Crane Barge to Self Propelled Class

- New Stbd Quarters Module Package structural, piping and electrical design, including installation methods and tie-in
- New 3-Tier Control Buildings Modules design, including support framework, installation engineering and tie-in
- Structural analysis, drawings, design of Foundation for New A&R Winch and sheaves, including trough on Main Deck for A&R wire

- New ROV system components foundation analysis and design
- New Lifeboats/Davits engineering and design
- All Piping, Mechanical and Electrical upgrade design
- Structural modifications for new anchor, anchor winch and anchor pockets
- New Bow Knuckle Boom Crane Foundation analysis and design
- Detailed engineering for watertight subdivision requirement for vessel
- Check for vessel compliance with SOLAS
- Liaison with shipyard/contractor and Class
- Stability Modeling, Analysis and Final Trim and Stability Booklet
- New Longitudinal Strength Analysis
- On-Board Stability Program

Marlin Offshore

Searex IX – Tender Barge

Site Support and Construction Support Teams

- Basic GAs, Functional GAs, Equipment Arrangements
- Lightship Tracking and Incline Procedure
- Stability, Mooring and Motions Analyses
- Mud Pump Relocation, Engine Addition
- Design of Crane Pedestal and Boom Rests
- Design of Additional Poop Decks
- Design of Piperack and Highline A-frame
- Foundations for Mud Pump, Agitators, SCRs Cementing Unit, Emergency Generator
- Global Structural Analysis

- **Stress Calculations for High Pressure Lines**
- **Design Routing Arrangements and BoMs of Following Piping Systems :**
  - High Pressure Mud and Cement, Low Pressure Mud, Bulk Mud and Cement, Mud Return
  - BOP Control, Diverter and C&K
  - Vents & Sounds, Bilge, Ballast, Drill Water, Fuel Oil, Lube Oil, Brine, Base Oil, Potable Water
  - Deck Drains, Water Maker, Engine Cooling, Control Air, Service Air, Fire & Foam, Sewage, Seawater, Oily-water, Accommodations
- **Main and Distribution Switchboards, Emergency Switchboard, MCCs**
- **Accommodations Lighting, Small Power Distribution, Galley Power, Machinery Spaces Lighting**
- **Load Analysis, Fault Current Analysis**
- **HVAC : Ventilation Design and A/C System Design**
- **Accommodations – Layout, Architectural, Safety, Piping, Electrical, A/C**

Marlin Offshore

WD Kent – Tender Barge

Site Support and Construction Support Teams

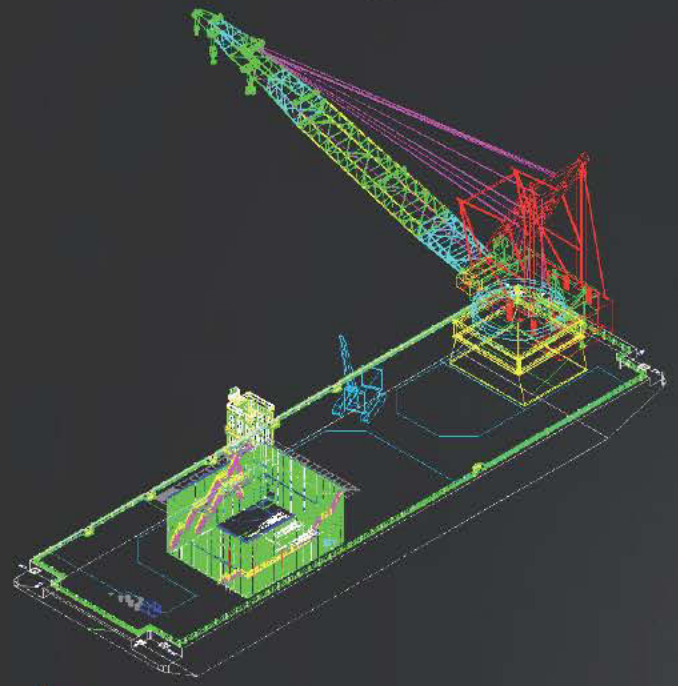
- Structural Design of Accommodations and Helideck Modifications
- Crane Boom Rest Design
- Engine Exhaust Support Structure
- Access Walkways, Platforms and Ladders

- Stress Analysis for High Pressure Piping
- Additional Mud Storage System
- Low Pressure Mud System
- Mud System Modifications for Hoppers
- LP Charge and Mix Manifold Modifications
- 3rd Mud Pump Addition and Piping
- Low Pressure Centrifuge System
- Mud Return System Modifications
- Mud Discharge System and Shear System
- Mud Pits Structural Design

Offshore Specialty Fabricators, Inc.

DB Raeford and DB Swing Thompson

Derrick Barge Conversion

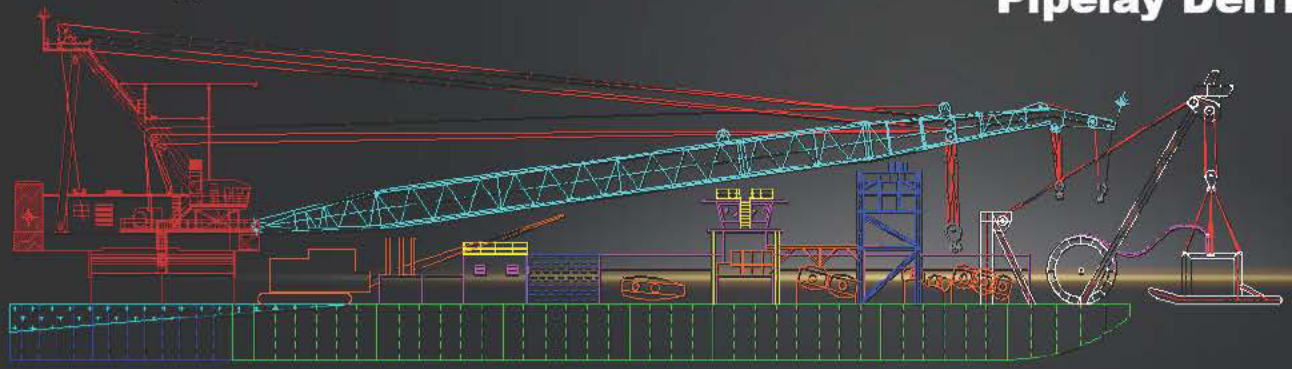


- Converted a flat deck 400’ x 100’ x 25’ barge to a 1200 MT crane barge
- Performed all structural analysis, naval architectural studies, piping arrangements, electrical design, HVAC design and equipment selection
- Site team at location in Houma for construction support
- Performed incline test and Crane load test
- Obtained ABS approval for Complete package

Transcoastal Marine Services, Inc.

Atchafalaya Bay

Pipelay Derrick Barge Conversion



Length	**320 ft.**
Breadth	**100 ft.**
Depth	**16 ft.**
Lifting Cap.	**600 m.t.**

Tacoma Narrows Constructors

- Bridge Pier Construction in-situ (2 piers) – Seattle,

  USA
- 32-point Caisson Mooring and flotilla of other vessels, under the influence of 5-8 knots current and 10 foot tide
- Designed mooring system, performed model tests,

  oversight of CFD work, complete instrumentation

  and real-time data gathering, on-line monitoring and advisory software
- Analysis of supporting vessels like crane barges,

  concrete pouring barges, support barges
- Construction support and assistance with Logistics
- 10 international papers presented and published

  from this project

Benicia Martinez Bridge

Built catamaran barge system with portal frame type structure for heavy lift of bridge sections from dock to bridge location.
Support for ballasting and logistics while operations were held

Busan-Geoje Fixed Link Immersed Tunnel, Korea

Numerical simulation of tunnel elements during immersion process
Time-domain motions analysis of 3 submerged bodies

Folsom Dam Catamaran Barge

Built catamaran barge system with portal frame type structure for lifting cofferdam sections.
Designed for 3000Ton lift U-shaped coffer dam lifted at dock-side and upended vertically against the face of the dam.

Damus – Loadout of Bridge and Flare Tower

Structural design of bridge and flare tower
Performed calculations and performed actual loadout at site in Trinidad

On-board Ballasting, Stability and Mooring Advisory Programs

LosJacks, LoSemis and LoShips

Client	No. of Vessels
ENSCO International (USA)	44 JU + 3 Semi
Global Santa Fe (USA)	24 JU
Noble Drilling (USA)	10 JU + 10 Semi
ONGC (India)	8 JU + 2 DrillShips
Nabors Corporation (USA)	9 JU
Scorpion Offshore (USA)	7 JU
ADC (UAE)	4 JU
Vantage Drilling	3 JU
Gulf Drilling International	3 JU
Hercules Offshore (USA)	3 JU
KCA DEUTAG (Europe)	3 JU
Helix Energy (USA)	3 Multi Purpose Vessels
Seadrill Mgt (Singapore)	2 JU
PV Drilling (Vietnam)	2 JU
Diamond Offshore (USA)	2 JU + 4 Semi
PT Apexindo (Malaysia)	1 JU
Japan Drilling (Japan)	1 JU
TOTAL	126 Jackups + 22 Floaters

Mooring Advisory and Weight Management Systems

#	Operator	Vessel Name	Water Depth	Vessel Type
1	Anadarko	Independence Hub	7920	Semi-Sub
2	BP	Atlantis	7073	Semi-Sub
3	BP	Holstein	4300	Truss Spar
4	BP	Horn Mountain	5400	Truss Spar
5	BP	Mad Dog	4500	Truss Spar
6	Chevron	Genesis	2599	Classic Spar
7	Chevron	Tahiti	4900	Truss Spar
8	Chevron	Blind Faith	6950	Semi-Sub
9	Dominion	Devils Tower	5610	Truss Spar
10	Exxon	Diana	4800	Classic Spar
11	Kerr-McGee	Boomvang	3700	Truss Spar
12	Kerr-McGee	Constitution	4970	Truss Spar
13	Kerr-McGee	Gunnison	3100	Truss Spar
14	Kerr-McGee	Nansen	3675	Truss Spar
15	Kerr-McGee	Neptune	1930	Classic Spar
16	Murphy	Frontrunner	3330	Truss Spar
17	Murphy	Kikeh	4360	Truss Spar
18	Murphy	Medusa	2223	Truss Spar
19	Murphy	Thunder Hawk	6100	Semi-Sub
20	Shell	Perdido	8000	Spar
21	Husky	White Rose	330	FPSO

Every SPAR in the world uses ZenMAS Mooring Advisory System

Other Unique Projects

- NASA - Structural Design of Shuttle Components
- NASA - Neutral Buoyancy Trainer
- Single Point Mooring System
- Helix Express – Jacking System Modification
- FPSO Tech Sdn Bhd – FEA of Mooring Chain Link

National Aeronautics and Space Administration (NASA)

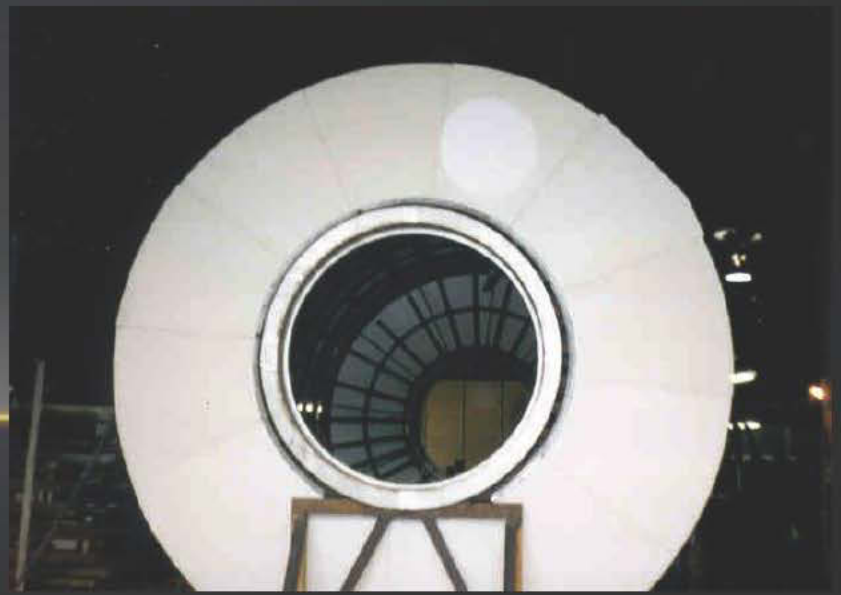
Space Shuttle Article One

With External Airlock and Orbital Docking System

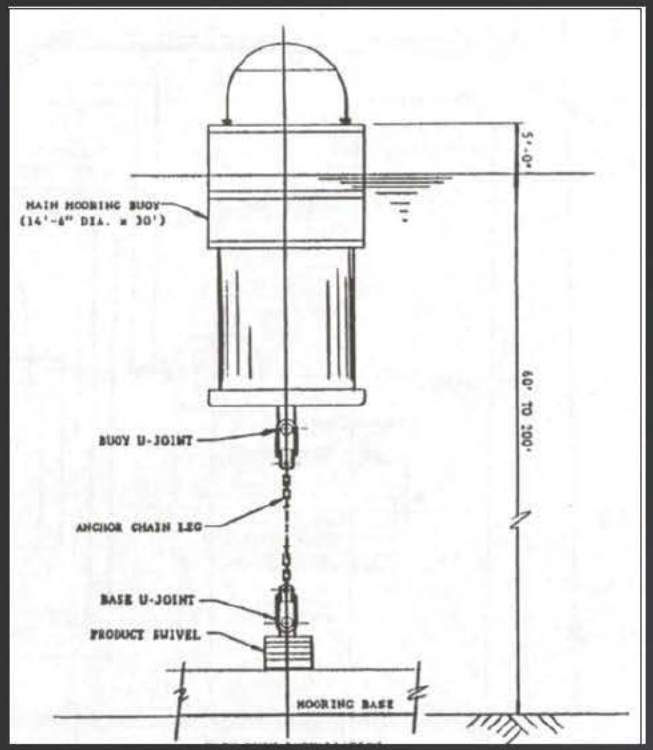
U.S. Laboratory Module Neutral Buoyancy Trainer

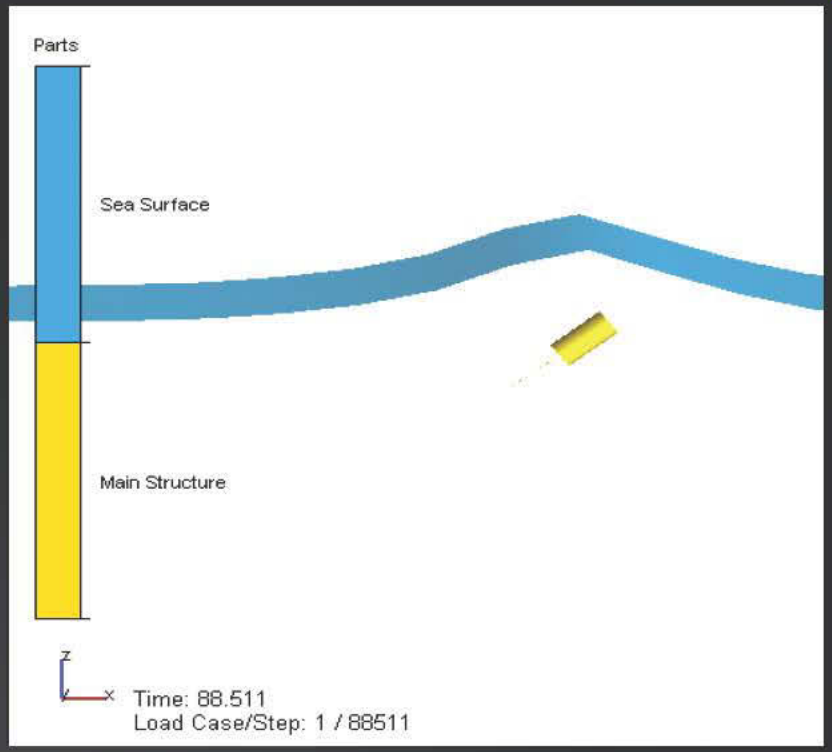
Structural Design and Analysis of the following components:

- **SS Article One: Structural Frame**
- **SS Article One: Forward Bulkhead**
- **SS Article One: Stand**
- **External Airlock: Structural Frame**
- **Orbital Docking System: Structural Frame**



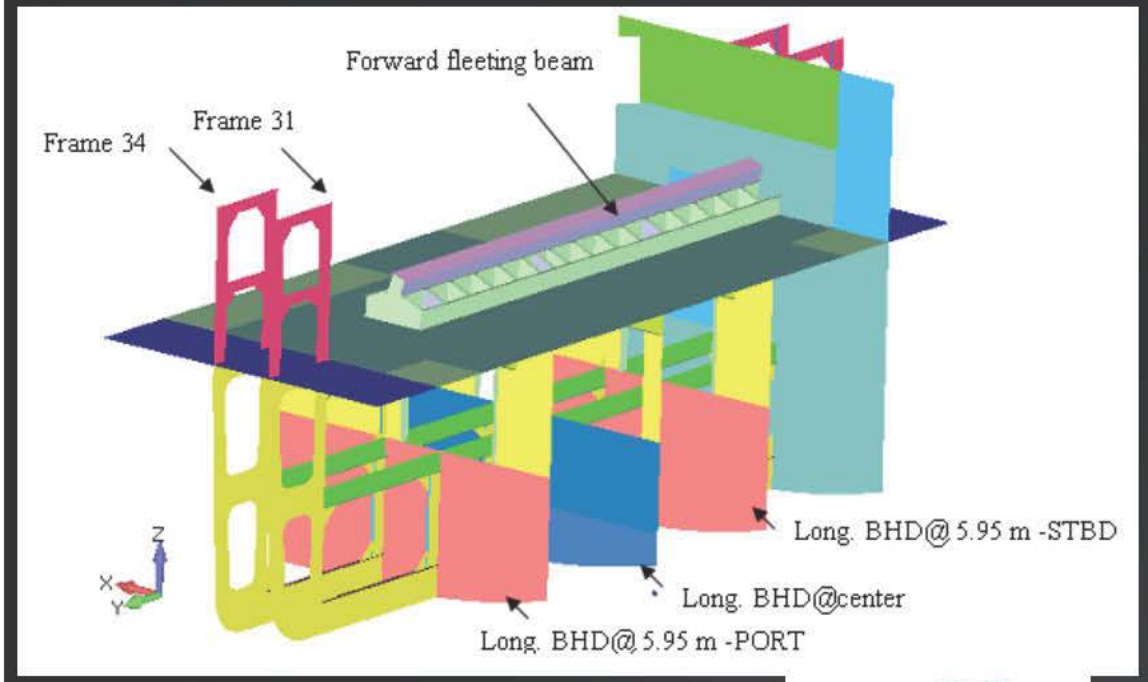
Single Point Mooring System





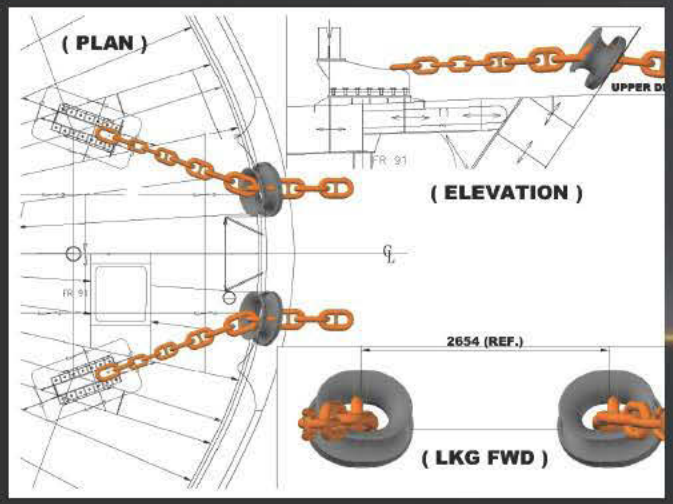
- Evaluation of wave and current forces on the system.
- Study the highly non-linear behavior of the buoy under the action of the 100 year hurricane waves.
- Evaluation of the maximum chain tension and buoy deflections.
- Evaluation of sliding safety. Sliding resistance provided by the friction force of the on-bottom weight and frictional resistance offered by skirts.
- Global analysis using site-specific wave and current loads.

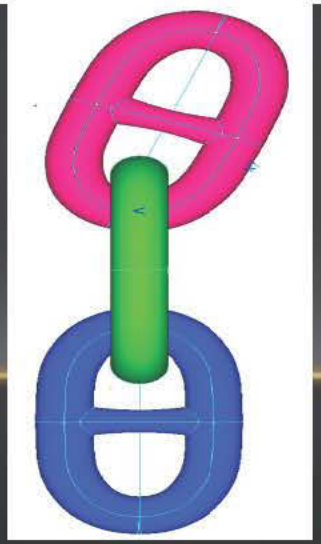
Other Examples of Unique Projects



Helix Express
Jacking System Modification

- Strength of Existing Hull supporting the Fwd fleeting beams was checked for jacking system loads
- Detailed FE model was prepared and still water, operating and survival cases for jacking system loads, were analyzed. Under deck reinforcement was suggested.





FPSO Tech Sdn Bhd
FEA of Mooring Chain Link

- FE model of 3-link assembly at bell mouth was developed to evaluate stress due to contact reactions
- The locking stress was estimated and the combined stress due to locking and that from FE analysis was evaluated and found to be within the allowable limit

Zee Rig 1

Key Dimensions:	US	Metric
Length, overall	237 Ft.	*72.2 m*
Length of pontoons	225 Ft.	*68.6 m*
Breadth overall	95 Ft.	*29.0 m*
Breadth-pontoons	24 Ft.	*7.3 m*
Upper hull depth	13 Ft.	*4.0 m*
Depth to main deck	46 Ft.	*14.0 m*
Draft at design waterline	21.5 Ft.	*6.6 m*
Minimum draft	12.5 Ft.	*3.8 m*
Lightship displacement	1,570 L. Tons	*1,595 mt*
Loadline displacement	3,446 L. Tons	*3,400 mt*
Approximate deck load capacity	200 L. Tons	*203 mt*
Propulsion on each shaft	1,500 HP	*1,200 kw*
Emergency generator	350 KW	*350 kw*
Fuel capacity (95%)	38,265 US Gallons	*144,849 l*
Fresh water capacity (95%)	37,265 US Gallons	*141,063 l*
Service speed transit draft	12 Knots	*12 knots*
Service speed at loadline draft	9-10 Knots	*9-10 knots*

SemiSWATH Vessel, Ultra Stable Available for Charter

- US Flag Vessel, Jones Act Compliant
- Presently located in Florida
- 15,000 ft^2 of Open Main Deck Space
- 16,500 ft^2 of Deck Space below Main Deck
- Excellent Motion Characteristics
- Self-propelled and DP
- Bare deck can be configured to meet Client requirements

Zee Rig 1

As Crew Accommodations

- 300 persons capacity
- Ampelmann HAC gangway
- 15 MT EN box boom crane

As a Maintenance Vessel

- 54 persons capacity
- Ampelmann HAC gangway
- 15 MT EN box boom crane
- Bare deck

Approaching Offshore Wind Turbine

ZENTECH NEW-BUILD DESIGN PORTFOLIO

CURRENTLY AVAILABLE NEW-BUILD DESIGNS:

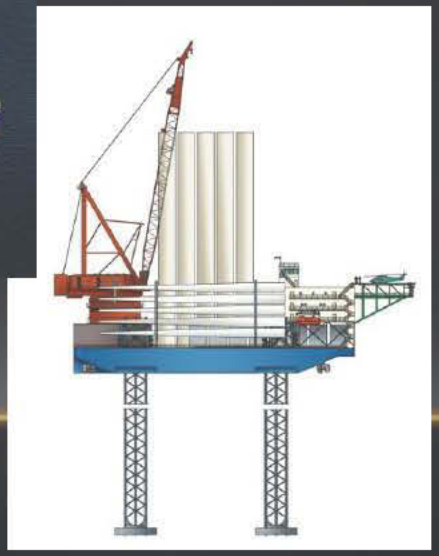
- **Z-210** **210 ft. WD** Self-Propelled Jackup Multi-Purpose Service Vessel
- **Z 210-250** **250 ft. WD** Self-Propelled Jackup Well Intervention and Multi-Purpose Service Vessel
- **Z 210-WF** **210 ft. WD** Wind Farm Installation and/or Service Jackup (self-propelled version available)
- **R-450D** **350 ft. WD** Jackup Drilling rig
- **R-550D** **400 ft. WD** Jackup Drilling Rig
- **Z-636** **500-525 ft. WD** Harsh Environment Jackup Drilling Rig
- **Platform Rig Designs** **1,000 to 3,000 HP**

WORKING DESIGNS:

- **PAN-X** (2) Mat Jackup Rigs designed by Zentech predecessor Company, built in 1980s (now owned and operated by Nabors Offshore)
- **Chiles** (2) R-450-A Jackup Rigs—ordered and designed in 1997 (contract later cancelled due to market conditions)

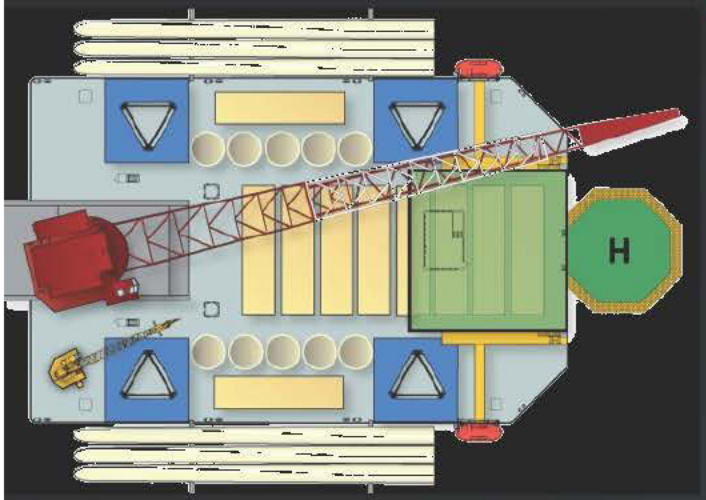
Z-210-WF

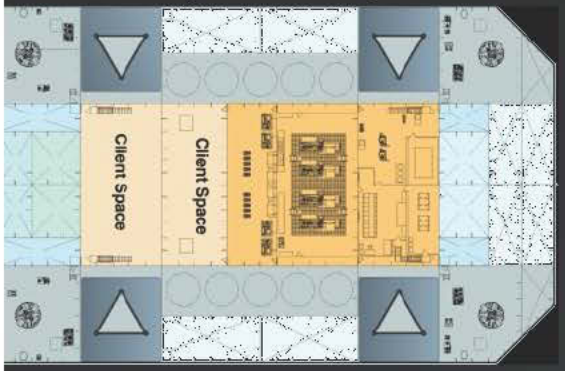
Offshore Wind Farm Installation and Service Vessel

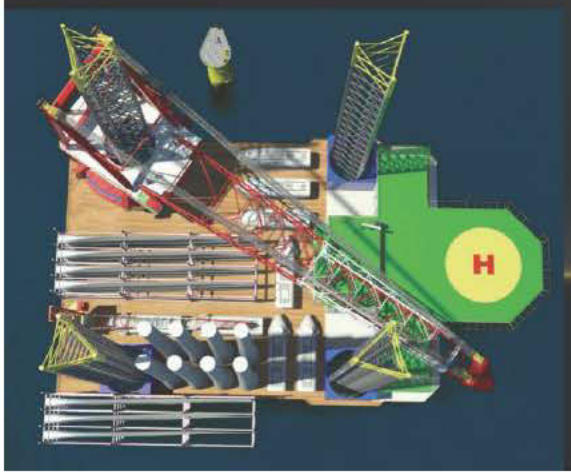


- Rated for up to 150' WD (deeper water variations available)
- Self-propelled and DP
- Four Azimuthing hrusters
- VDL of 5200 Mtons
- Sized for 10 complete wind turbines, towers and blades
- Cantilever mounted Main Crane
- Jacking Speed : 5 feet per minute
- Berthing for 80 personnel
- Helideck rated for S-61 and S092 per CAP437

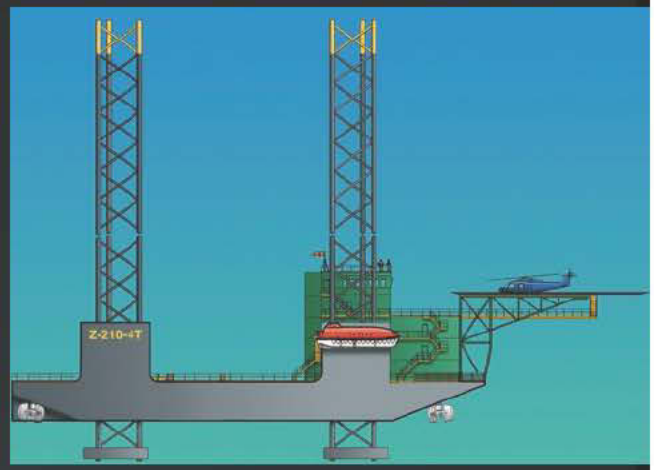
Z-210-WF

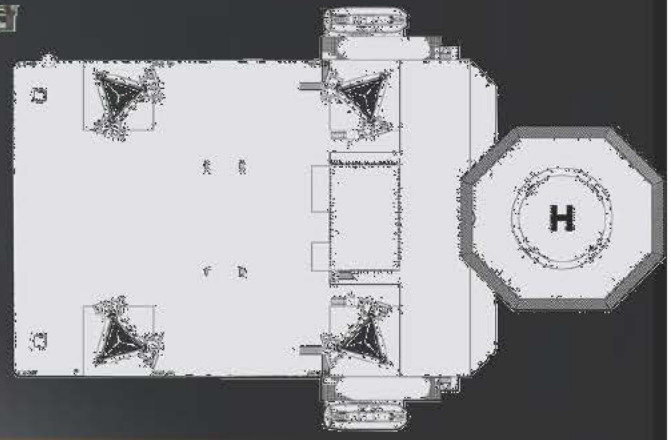




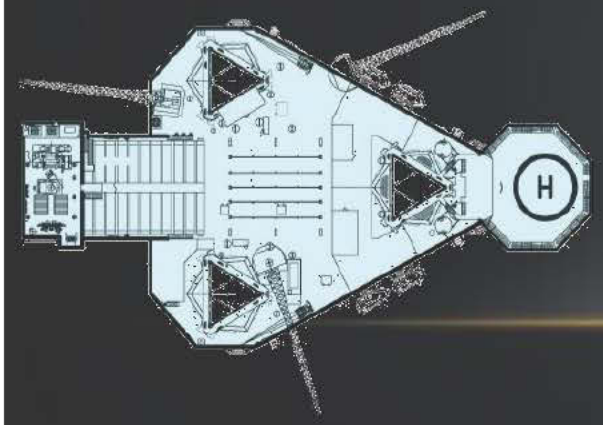


Z-210-4T : 230ft WD

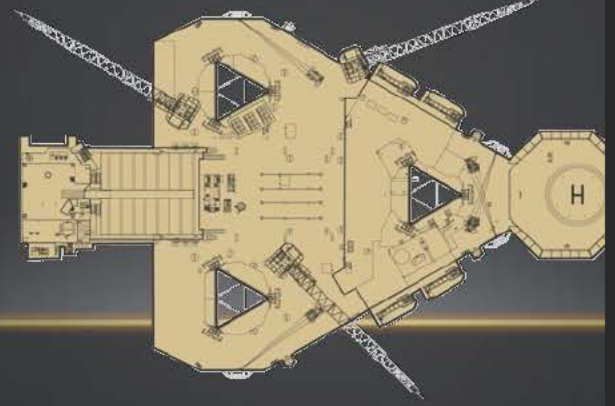




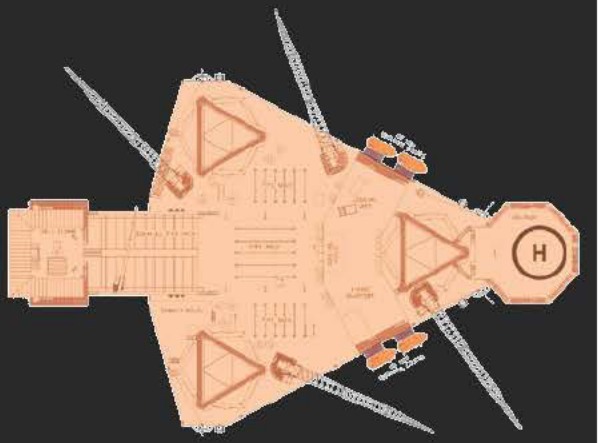
R-450 : 350ft WD



Z-550D : 400ft WD

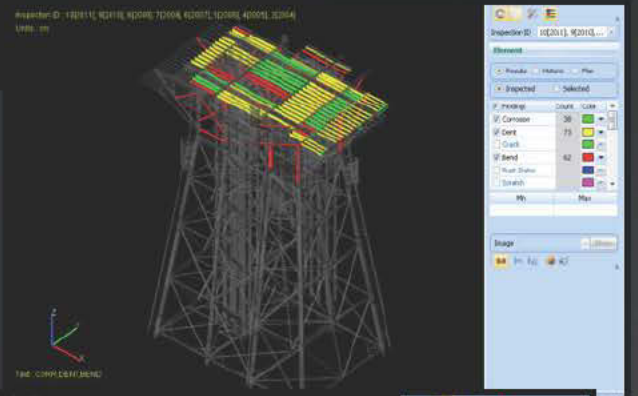


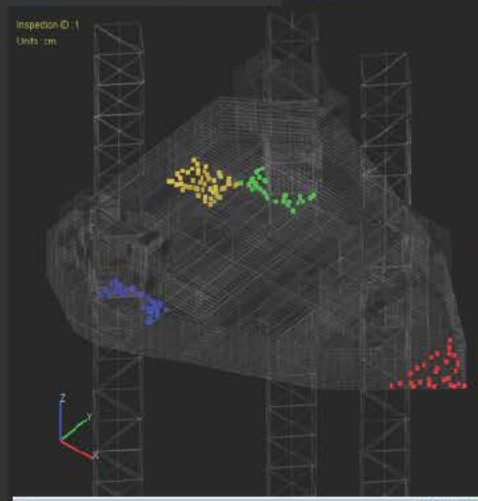
R-636 : 500ft WD

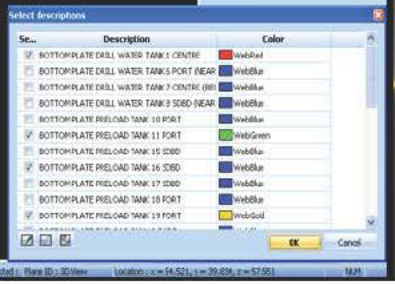


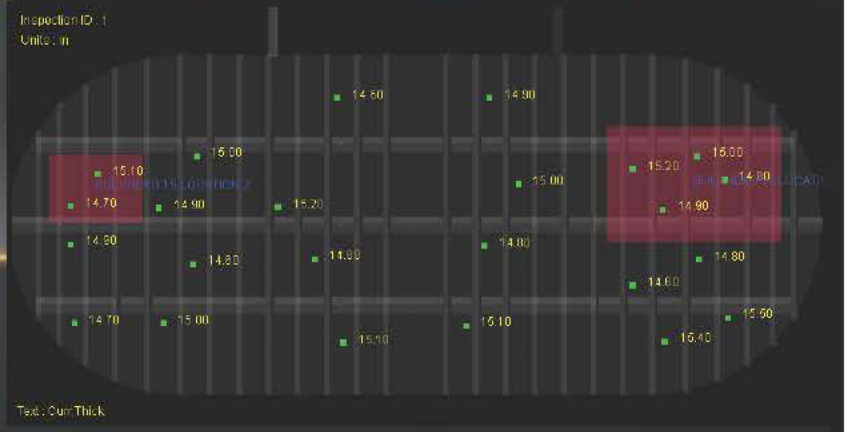
ZAIMS

1. **Global Assets planning and Single Asset Management**
2. **3D Model of Rigs displaying all corrosion values**
3. **Automatic MTO for steel replacement**
4. **Analysis to check integrity of structures**









Phoenix Analysis Design & Drafting System

(Patent Obtained)

- Software Platform for Project Cycle Management
- Automates the *Implementation* of Design Decisions
- Multiple User Interfaces
- Fully Integrated 2D and 3D Designs

PADDS®

Phoenix Analysis Design & Drafting System

Ask for a Live Demo Today

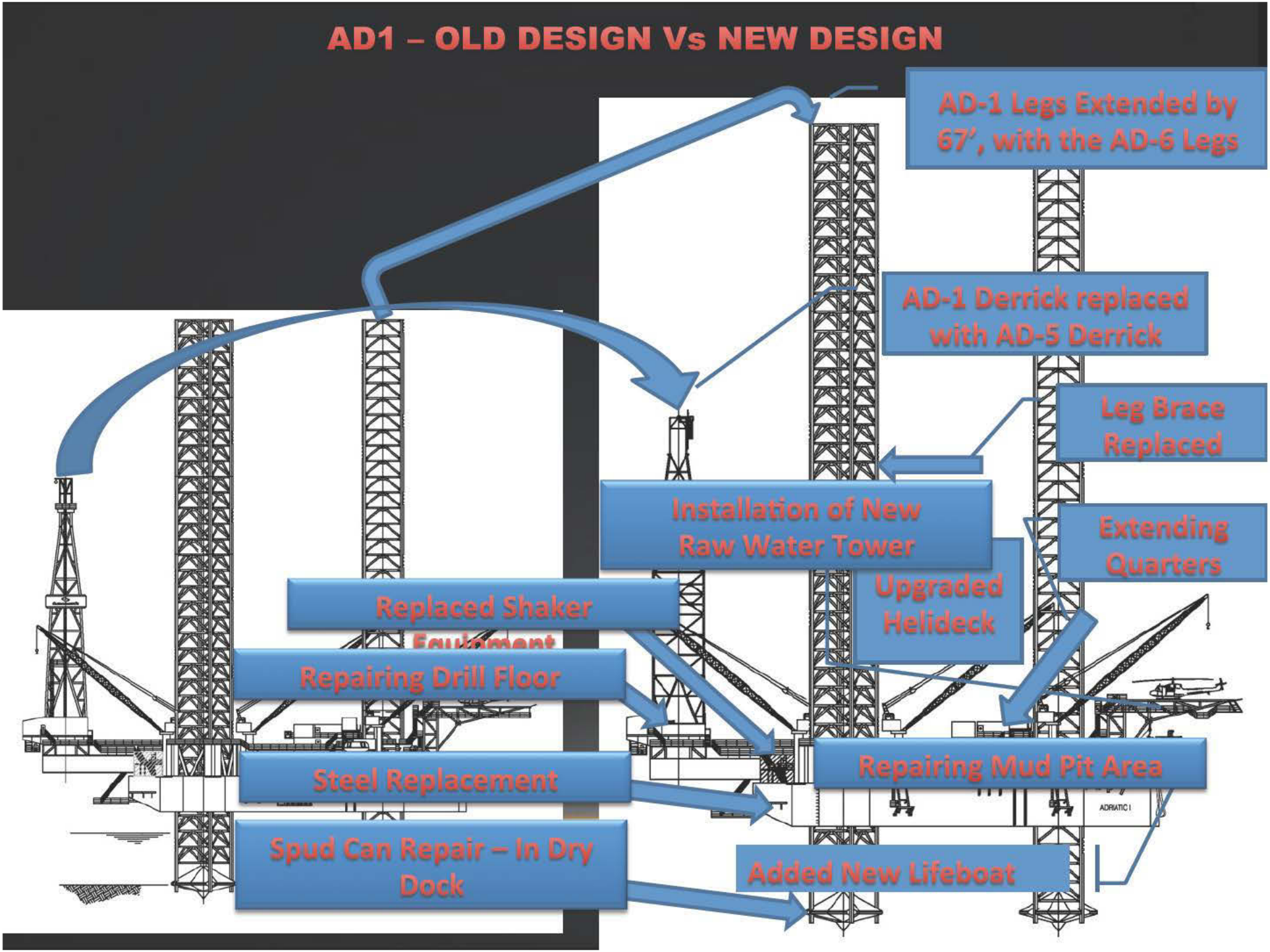
Adriatic – 1 : Reactivation / Upgrade Project

Major Scopes of Work AD-1

The complete SOW below was finished in about 6 months

1. Rig Survey
2. Development of Shipyard Scopes of Work; Over 80 SOWs developed
3. Reactivation of Cold Stacked Rig
4. Leg Extension from 410'to 477'
5. Existing Derrick removed, and replaced with a 1500 Kips derrick
6. All cantilever, substructure, transom, pushup, hold down and skid rail reinforcements for increased drilling loads
7. Complete gutting of quarters, new layout for increased POB, and completely redone quarters on the inside
8. All helideck related work for CAP 437 Upgrade
9. Addition of Fwd Lifeboat
10. Complete change out of Shaker Package
11. Removed existing raw water tower, fab'd new one and installed
12. Steel and piping replacement per gauging and SPS; Over 250 leg braces replaced
13. Changed mud system to 7500 psi
14. Replaced Koomey unit, Trip tank
15. Complete new F&G system all new Communications System, Expanded control room
16. Complete inspection, renewal and upgrade of HVAC system
17. ALL major equipment, removed, serviced and/or replaced, installed, commissioned
18. 100% of all engineering

AD1 – OLD DESIGN Vs NEW DESIGN



THANK YOU

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