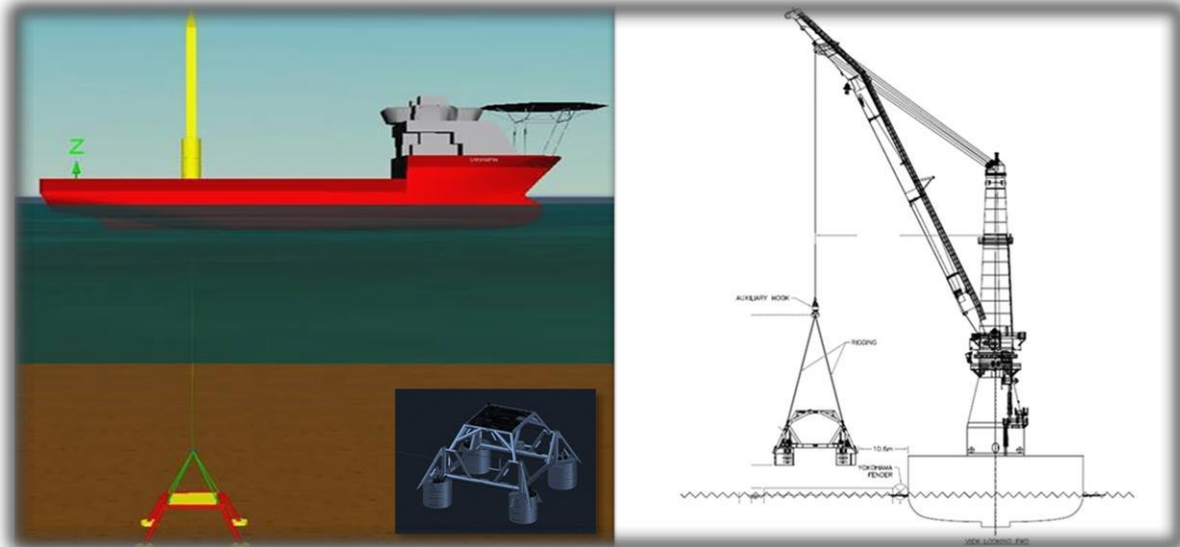
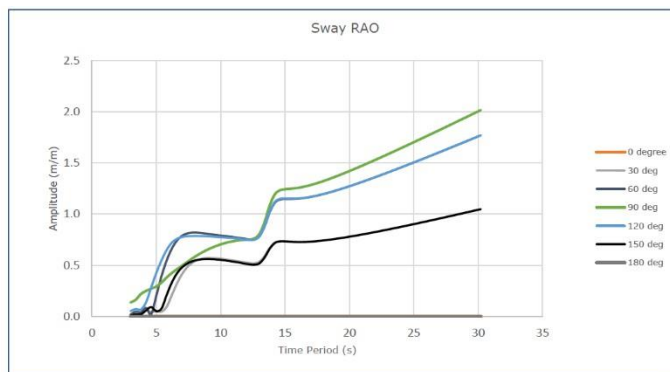
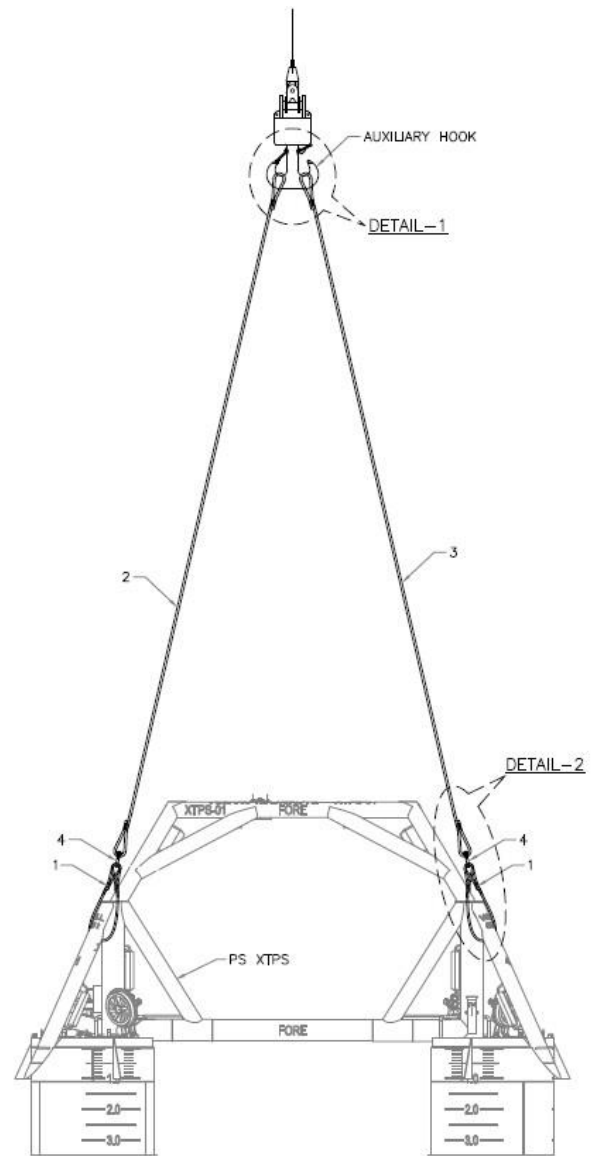
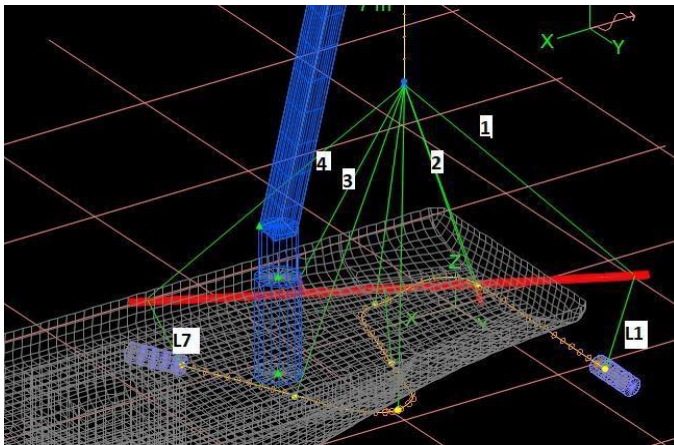
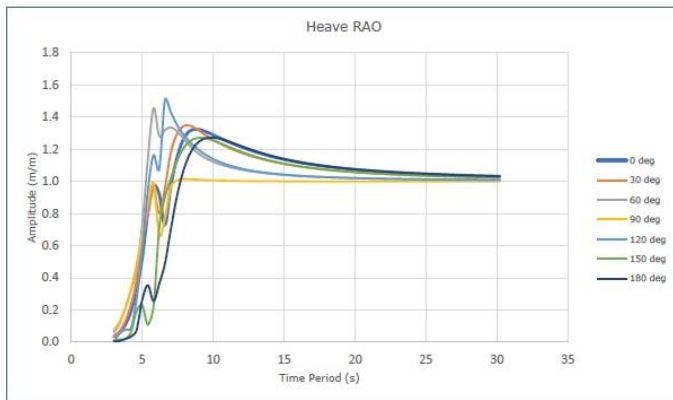
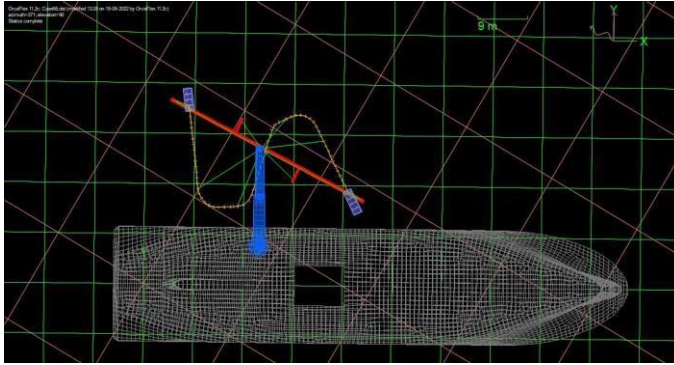


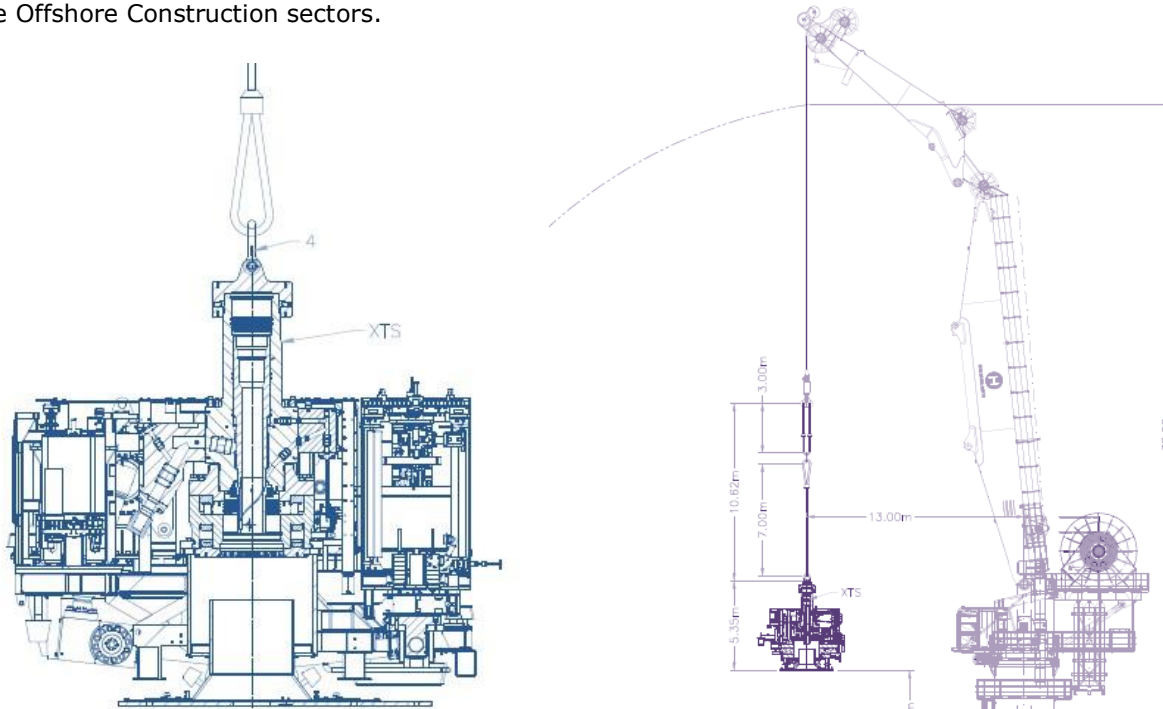
Marine Consultants & Engineers (MCE) an independent marine and engineering consultancy with registered offices in Singapore and India. MCE offers a wide range of marine & engineering services to the Energy and the Offshore Construction sectors.



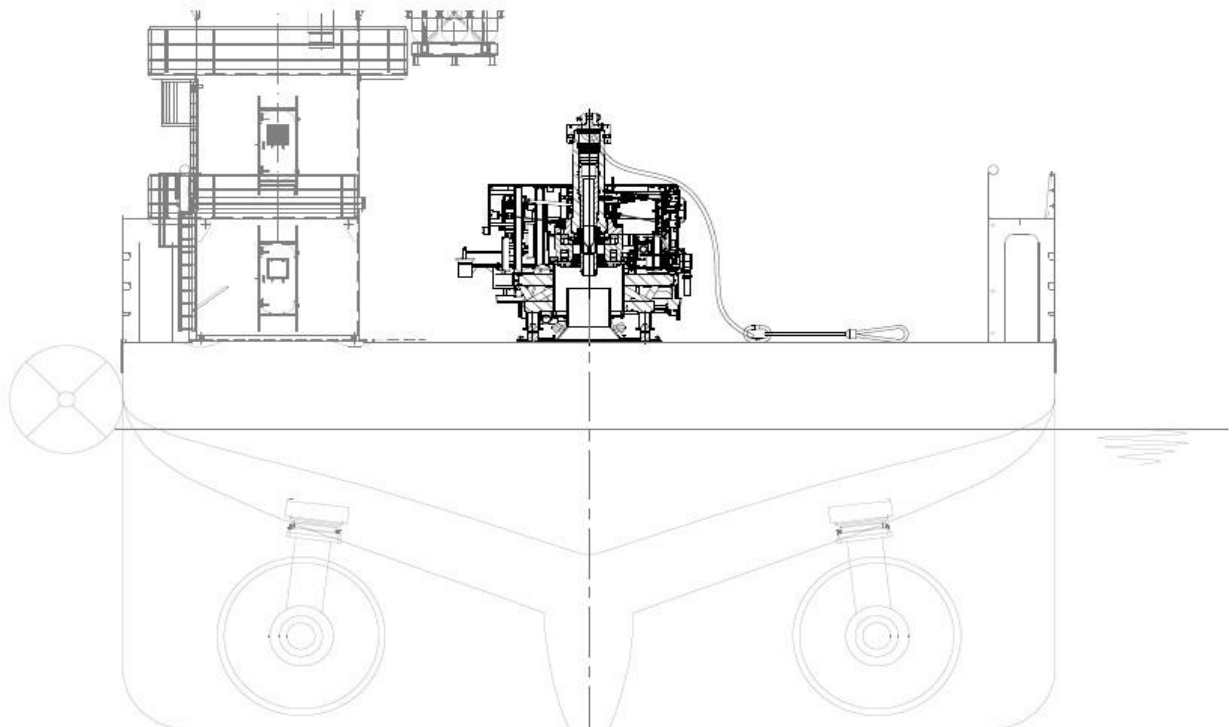
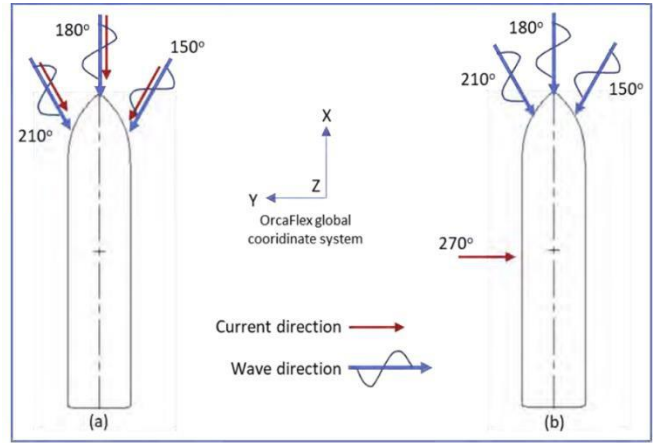
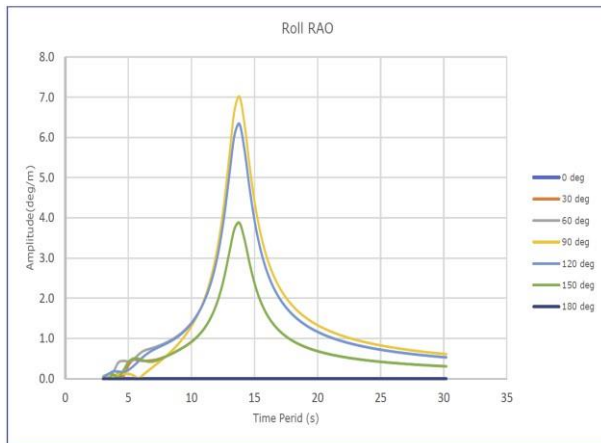
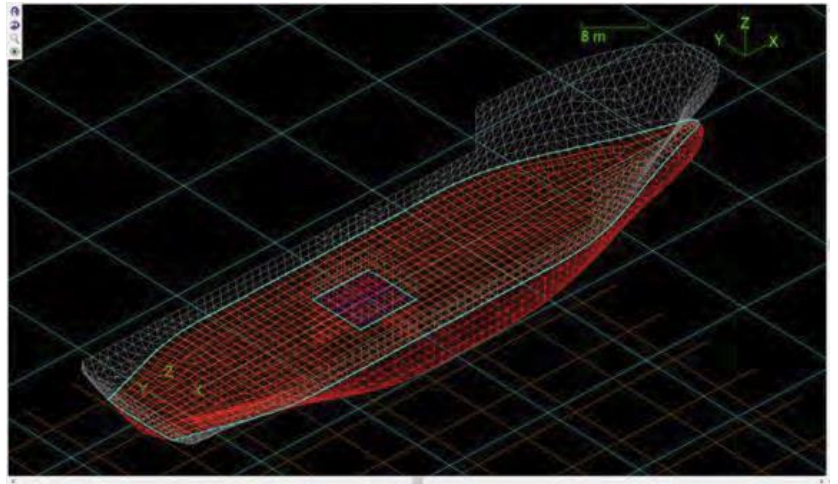
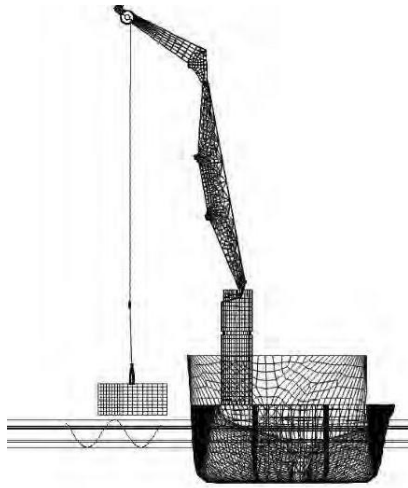
Project Name and Locations	Kirinskoye and Yuzhno-Kirinskoye fields development, the Sea of Okhotsk
Client Information:	RusGasShelf / RusGasDobycha
Scope of Work	<p>Development of engineering solutions for offshore operations for the construction, including,</p> <ul style="list-style-type: none"> • lifting and installation of protective structures of subsea equipment and spools in the sea, • dynamic analyses in OrcaFlex, • rigging design, • safe crane speeds and weather windows requirements • drawings and engineering reports preparation
Project Features:	Subsea development
Key Personnel on the Project:	<p>Project Board:</p> <ul style="list-style-type: none"> • Project sponsor: Capt. Gautam Hiranandani <p>Project management:</p> <ul style="list-style-type: none"> • Appi Singh Walia • Kira Tikhonova <p>Project team:</p> <ul style="list-style-type: none"> • Sreenath Kurup • Igor Lemeshko



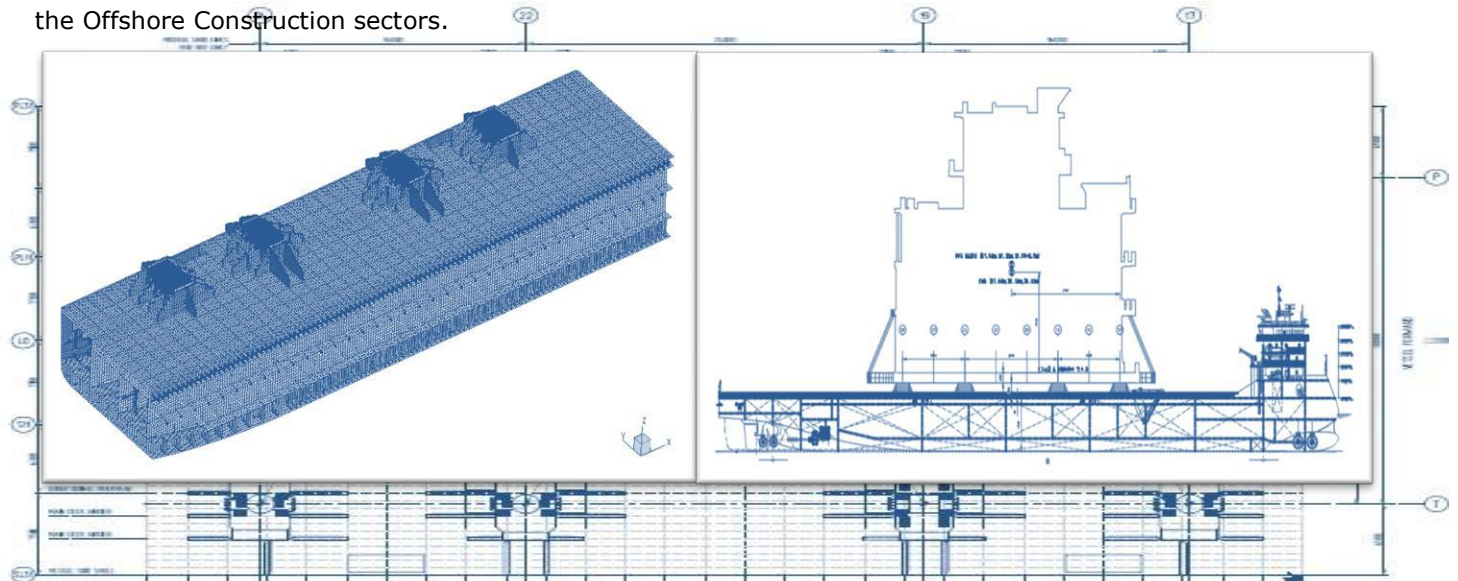
Marine Consultants & Engineers (MCE) an independent marine and engineering consultancy with registered offices in Singapore and India. MCE offers a wide range of marine & engineering services to the Energy and the Offshore Construction sectors.



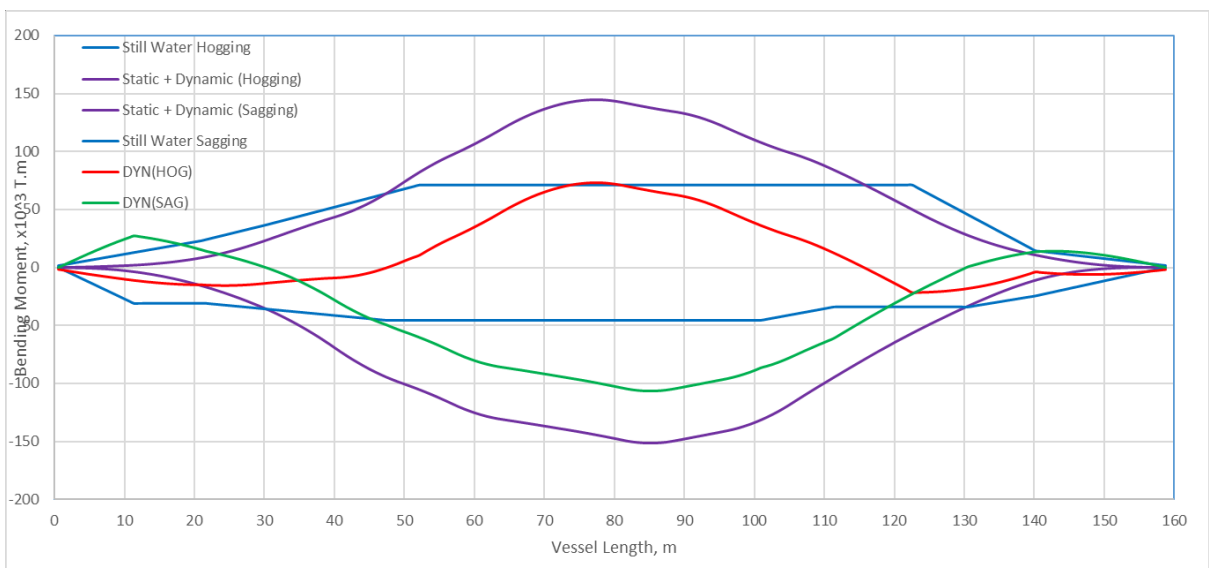
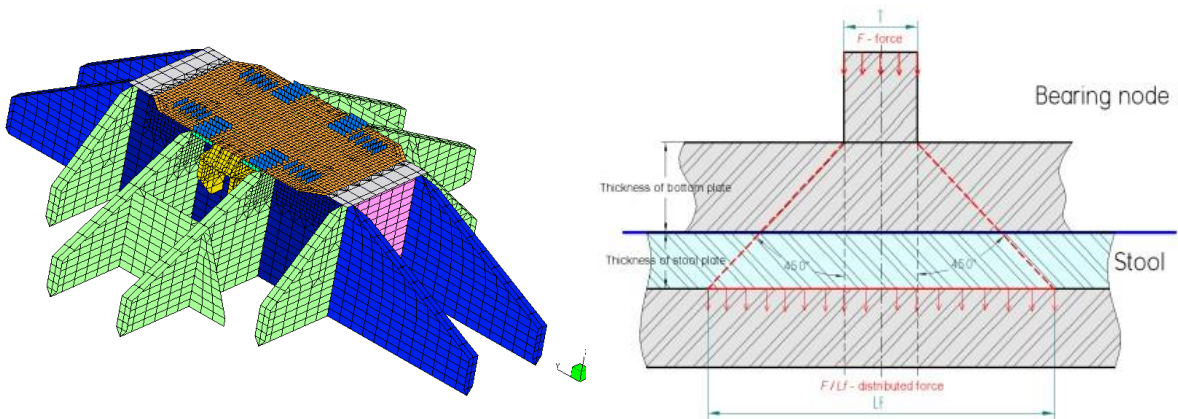
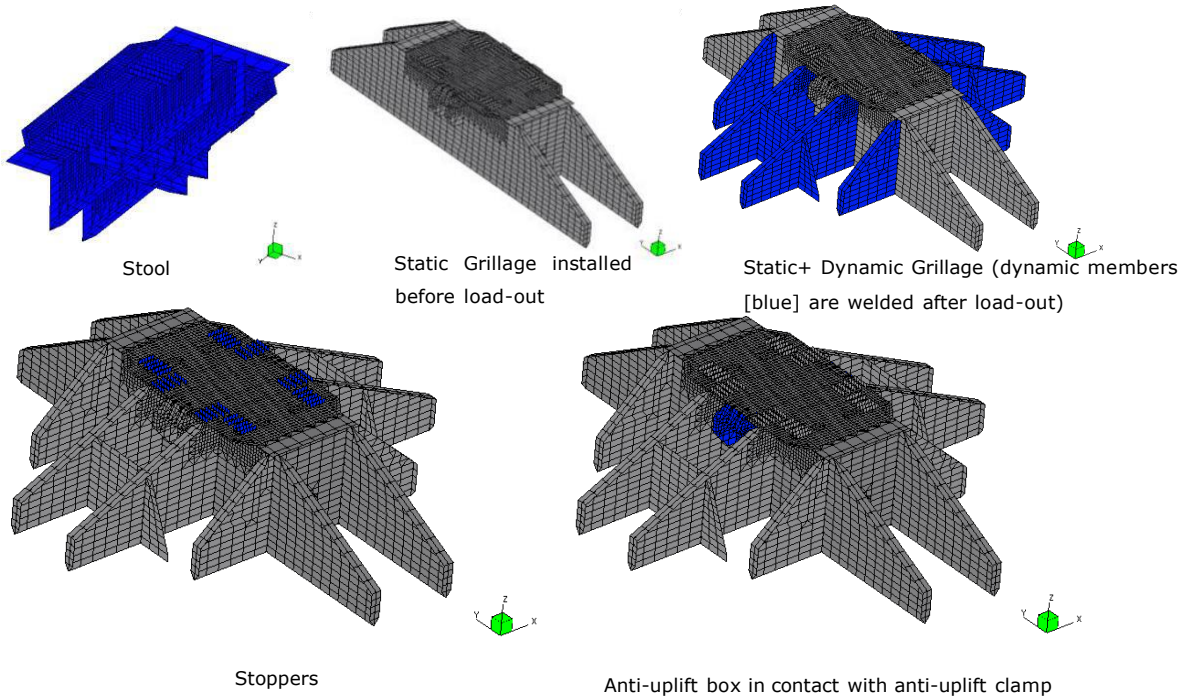
Project Name and Locations	Yuzhno-Kirinskoye fields development, the Sea of Okhotsk
Client Information:	RusGasShelf
Scope of Work:	<p>Development of engineering solutions for offshore operations for subsea production equipment installation, including,</p> <ul style="list-style-type: none"> • lifting and installation of HXT in the sea, • ship to ship loading operation • dynamic analyses in OrcaFlex, • rigging design, • safe crane ops requirements • drawings and engineering reports preparation
Project Features:	Horizontal Christmas Tree
Key Personnel on the Project:	<p>Project Board</p> <ul style="list-style-type: none"> • Project sponsor: Capt. Gautam Hiranandani <p>Project management:</p> <ul style="list-style-type: none"> • Appi Singh Walia • Kira Tikhonova <p>Project team</p> <ul style="list-style-type: none"> • Sreenath Kurup • Igor Lemeshko



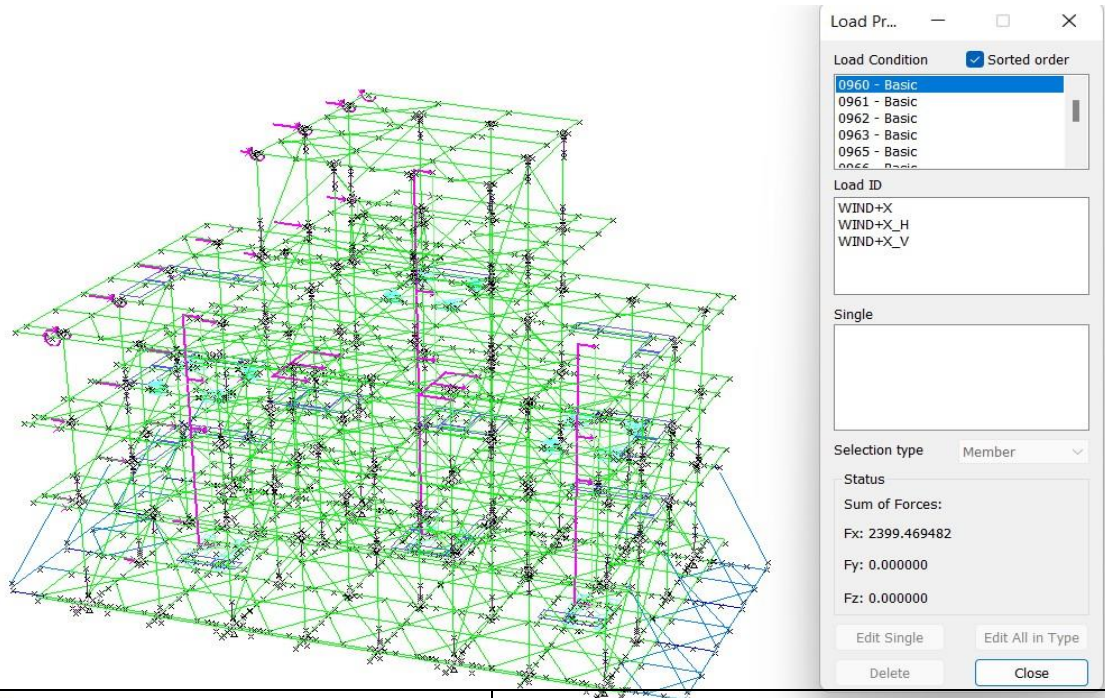
Marine Consultants & Engineers (MCE) an independent marine and engineering consultancy with registered offices in Singapore and India. MCE offers a wide range of marine & engineering services to the Energy and the Offshore Construction sectors.



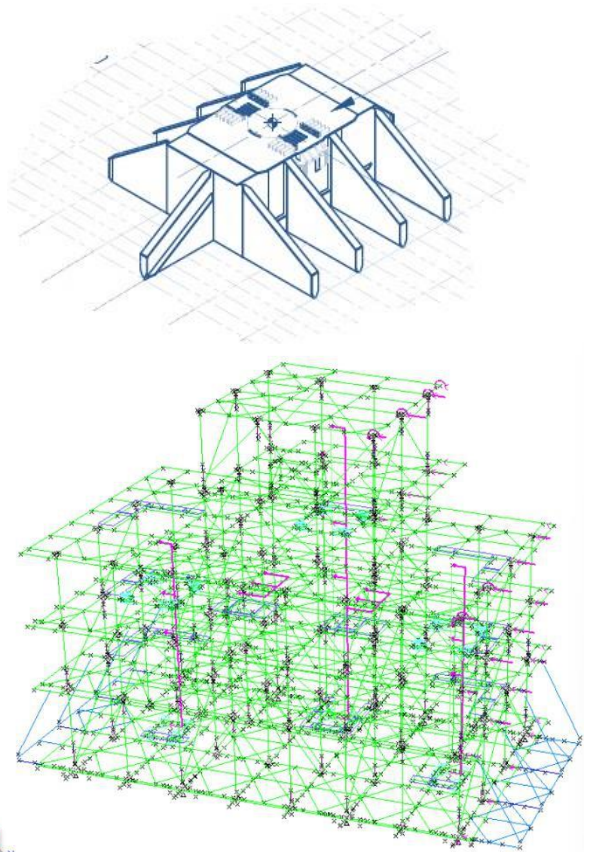
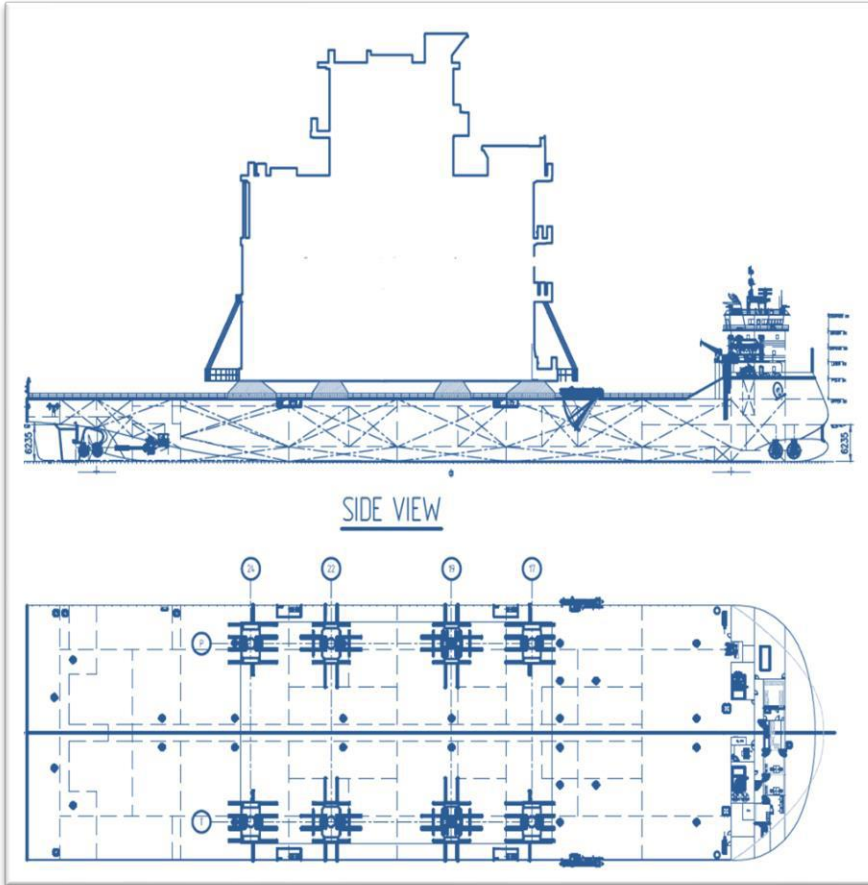
Project Name and Locations	Arctic LNG 2
Client Information:	Nova Engineering and Construction LLC
Scope of Work	<p>Development of engineering solutions for grillage and sea fastening of topsides modules, including,</p> <ul style="list-style-type: none"> • G & S FE modelling, load cases combination and matrix development and analysis • Seafastening checks, fatigue analysis, buckling verification of grillage and vessel • Detail design drawings for fabrication, incl. isometric Views, Plan Views, Section Views, stoppers and anti-uplift box details
Project Features:	Topsides modules (12 000 ton +) ocean transportation from Chinese fab yard to Russia
Key Personnel on the Project:	<p>Project Board</p> <ul style="list-style-type: none"> • Project sponsor: Capt. Gautam Hiranandani <p>Project team</p> <ul style="list-style-type: none"> • Engineering Manager - Appi Singh Walia / Kira Tikhonova • Structural Engineer - Sreenath Kurup • Project Coordinator - Iuliia Tsurkan • Senior Structural Engineer - Chandra Reddy • Senior Structural Engineer - Nandakumar Kunnanchath • Senior Naval Architect - Saurabh T. Singh/Amarendra Kumar • Structural Engineer - Rahul Kumar • Snr Draftsman - Nirmla Kumar • Draftsman - Sukhvinder Singh • Methods Engineer - Shahaya Anbu Marshel



Marine Consultants & Engineers (MCE) an independent marine and engineering consultancy with registered offices in Singapore and India. MCE offers a wide range of marine & engineering services to the Energy and the Offshore Construction sectors.



Project Name and Locations	Arctic LNG 2, China yard
Client Information:	Nova Engineering and Construction LLC
Scope of Work	<p>Calculation of module design loads during ocean transportation, including,</p> <ul style="list-style-type: none"> • Static linear analysis of a three-dimensional space frame computer model of the module main structural frame using Bentley SACS Offshore Structure software • Load cases combination and matrix development and analysis • Verification of grillage and sea fastening solutions versus various load combinations for sea transportation
Project Features:	Topsides modules (12 000 ton +) ocean transportation from Chinese fab yard to Russia
Key Personnel on the Project:	<p>Project Board</p> <ul style="list-style-type: none"> • Project sponsor: Capt. Gautam Hiranandani <p>Project team</p> <ul style="list-style-type: none"> • Engineering Manager - Appi Singh Walia / Kira Tikhonova • Structural Engineer - Sreenath Kurup • Senior Structural Engineer - Chandra Reddy • Senior Structural Engineer - Nandakumar Kunnanchath • Senior Naval Architect - Saurabh T. Singh/Amarendra Kumar • Structural Engineer - Rahul Kumar • Snr Draftsman - Nirmala Kumar • Draftsman - Sukhvinder Singh • Methods Engineer - Shahaya Anbu Marshel



10.2 LOAD COMBINATION RESULTS

The table below shows the results of the pre-combinations of the unitary accelerations.

Table 10-2: Load Combinations

Load Case	Fx	Fy	Fz
	kN	kN	kN
0910	103429.70	0.00	0.00
0911	0.00	103429.70	0.00
0912	0.00	0.00	103429.70
0913	0.00	-0.50	-0.10
0914	0.50	0.00	0.70
0915	108601.20	0.00	0.00

1.3 MOTION LOADS

Motion loads are generated from the loads LC0900 and LC0901 by applying a unitary acceleration. The actual accelerations from Section 7.2 are considered and defined in Appendix B.

Table 9-3: Unitary Acceleration Load Case

Description	Load Case
-1g on +X direction applied on LC0900	0910
-1g on +Y direction applied on LC0900	0911
-1g on +Z direction applied on LC0900	0912
-1deg/s ² on +X direction applied on LC0900	0913
-1deg/s ² on +Y direction applied on LC0900	0914
-1g on +X direction applied on LC0901	0915
-1g on +Y direction applied on LC0901	0916
-1g on +Z direction applied on LC0901	0917
-1deg/s ² on +X direction applied on LC0901	0918
-1deg/s ² on +Y direction applied on LC0901	0919