

STEAM S.r.l.



STEAM S.r.l. is a small Engineering
Company operating mainly in the Oil & Gas
Plant Construction

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e-mail: steam@steam-srl.com

The Origines

- STEAM arises from important experiences gained in the field of off-shore platform and naval construction.
- The activity begins in 2003 with the assignment by Saipem of the studies and following design of the Kuryk Fabrication yard in Kazakhstan.
- The strength relationship with the Saipem Group confirms itself with the activities done in the following years both of engineering and assistance to the off-shore fabrication yards, also in outsourcing.

Operative Staff

- Employees:
 - 5 graduate engineers
 - 7 technicians
 - 1 administrative
- In semi-permanent outsourcing for the activities in our office:
 - 2 graduate engineers
 - 5 technicians

Offices

The offices are in Taranto at few km from the airports of Bari and Brindisi

- 130 sqm in the Main Office
- 65 sqm in the Auxiliary Office

Activities

STEAM bases on the experiences gained in the field of off-shore platform and naval constructions. It always keeps the attention to the construction and yard needs, not only during Construction Engineering activities, but also during the Design which is done, in any case, in a stringent way congruent with Project and Customer's specifications.

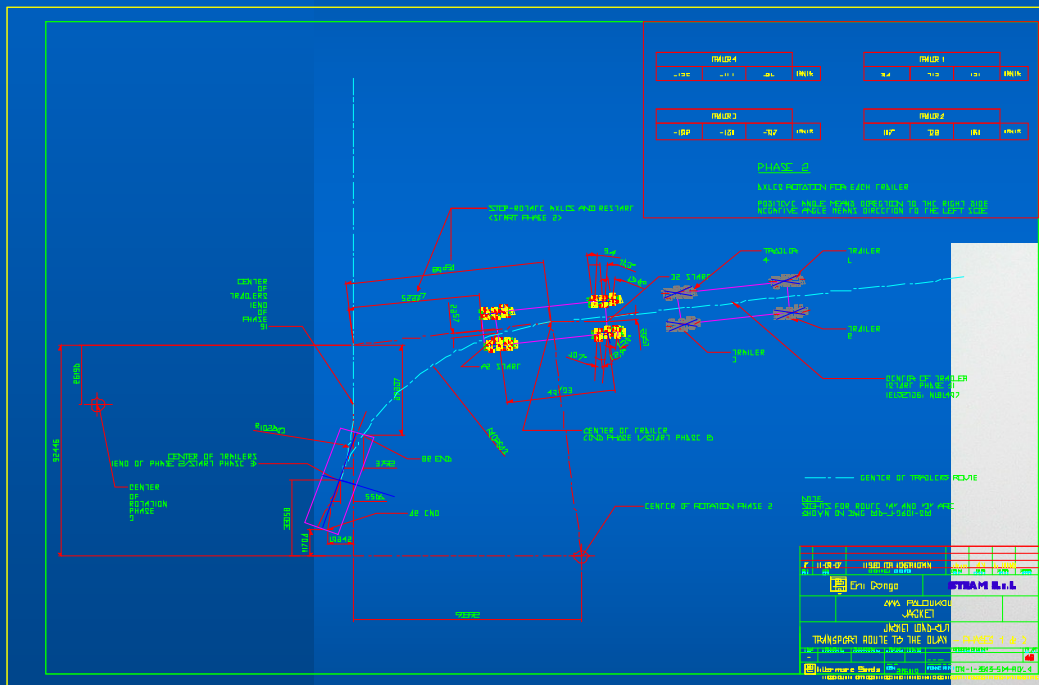
Transports, Heavy Lifting and Load-outs



In team with the Client, STEAM defines and finalizes:

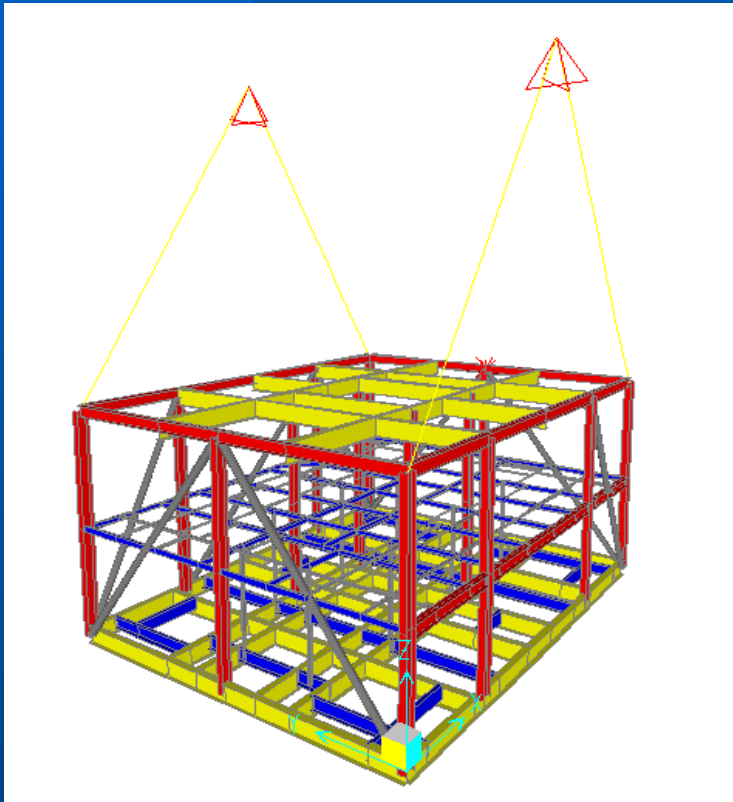
- Systems and details for any type of transport / transfer inside and outside the yard.
- Systems, details and structural verifications, also with FEM Analysis, for every Heavy Lifting.
- Load-outs of any type.
- STEAM S.r.l. has obtained ISO 9001 Certification for the Design activities related to the «Special Handling, Liftings and Transportations»

Transports and transfers

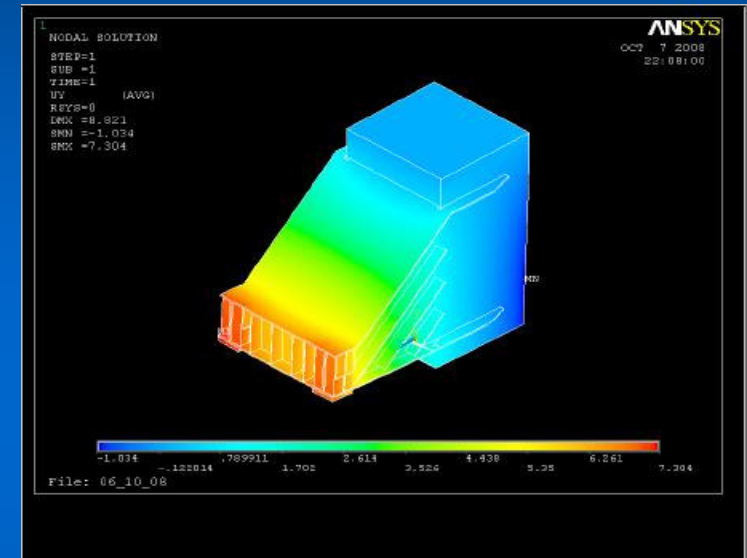


AWA Paloukou Deck for Intermare Sarda

Heavy Lifting



Olowi C Module for Intermare Sarda
FEM Analysis



Scarabeo 8 Drill Floor
Module Lifting Stools for
Saipem
Design and FEM Analysis

Load-outs



AWA Paloukou Deck for
Intermare Sarda - Arbatax



USAN Mooring Buoy for
SCNL – Port Harcourt -
Nigeria

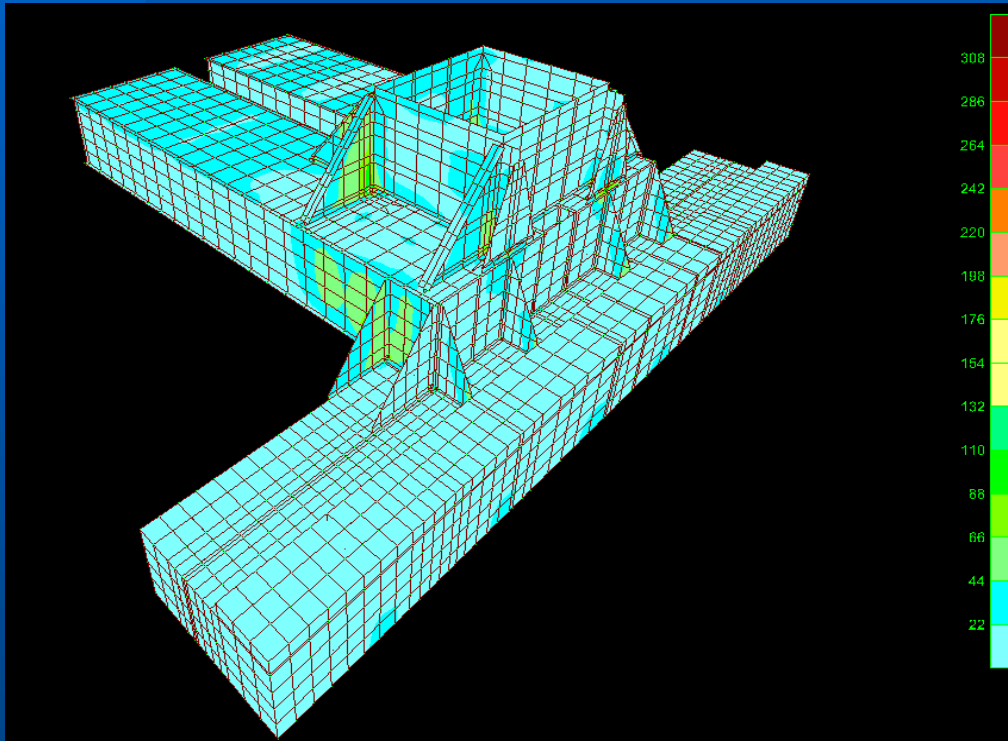
Marine Transport – Grillage and Sea-Fastening Design



In team with the Client STEAM defines, designs and details, according to the “Certification Body” Requirements:

- Barge selection
- Marine Transport Conditions
- Grillage and Sea Fastening Design

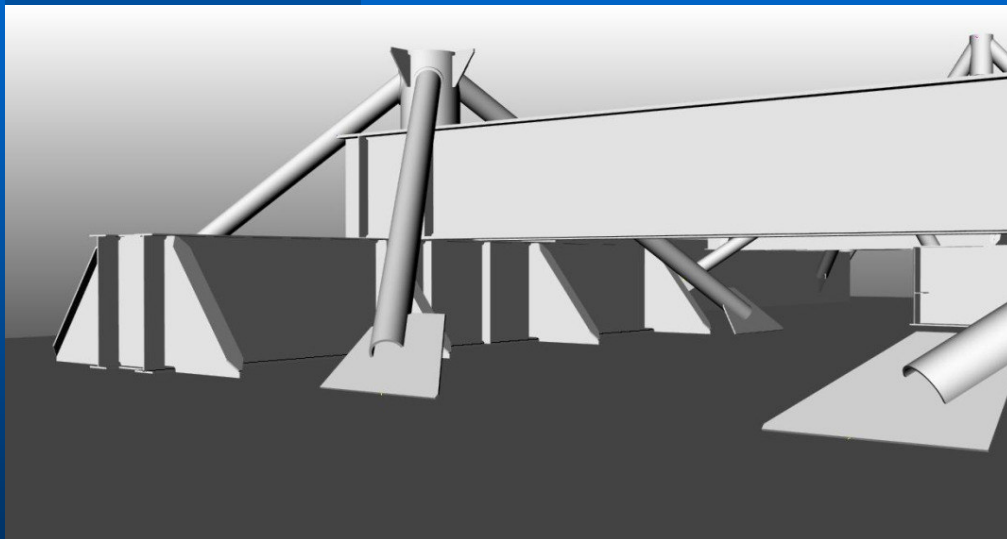
Grillage and Sea Fastening Design



Scarabeo 8 Drill Floor Module for Intermare Sarda



Grillage and Sea Fastening Design



Annamaria Deck B for
Intermare Sarda

Construction Yards Support

Steam provides for personnel to support Construction Yards.

- Saipem Construction Nigeria Ltd – Port Harcourt – Nigeria
- Saipem at Fincantieri shipyard Palermo
- BosCongo – Point Noire – Republic of Congo
- PT Saipem - Karimun Indonesia
- PT Hanjung (in behalf of Saipem) – Indonesia
- Petromar – Ambriz Yard – Angola
- Saipem do Brasil- Guarujà Yard - Brasil


Construction Yards Support



SCNL Port Harcourt Nigeria

- Crane Test
- Module Weighing
- Structure Roll-over
- Assistance to Load-outs

Construction Yards Support


	SAIPEM S.p.A. Scarabeo 8 DFMDFS Mezzanine EL +50650 & EL+4560 FEM Analysis	DOC.N° J0806 R-SD-C-05051 Rev. 2/4 Date: 12/03/10 Page: 1 of 39
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SAIPEM S.p.A.

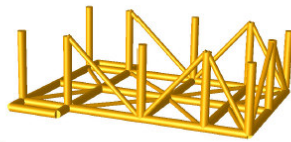
Scarabeo 8 DFMDFS

Mezzanine EL +50650 & EL+4560
FEM Analysis

J0806-R-SD-C-05051

	CUSTOMER: ENI NORGE	Job No: 15802	Document No: SA-243.000/EA-9004
	PROJECT: SCARABEO 8 CONSTRUCTION	Rev: 2/4	Sheet
	TITLE: BOP Guidance System Local Design Report	Rev: 2/4	Page: 1 of 17

MAIN DECK /
BOP GUIDANCE SYSTEM, INCLUDING PLATFORM,
LOCAL DESIGN REPORT



A4	12/03/10	Updated after UNV comments
A3	29/10/09	Updated after FNV comments
A2	18/03/09	Updated
A1	29/10/08	Preliminary
REV		

Rev	Date	Issue Description	Prepared By	Verified By	Approved By	Client Approval
A3	18/03/10	Revised Appendix B	RL	GW	KT	
A2	18/03/09	Revised Appendix B	IM	GW	KT	
A1	29/10/08	Issued For ENV approval	APM	GW	KT	

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Saipem at Fincantieri Shipyard Palermo

- Assistance to Saipem Engineering Dpt

Construction Yards Support

BOSCONGO YARD - LIBONDO JACKET		Document Number: XX-XXX-XX-XXX-XXX-001	
Technical Annex for Scaffoldings Subcontract		Revision: A	Status: IPR
Document type: 000	System/Subsystem: XI	Discipline: 000	Rev. Date: 30-May-09
Contractor document number: YYY-YYY-YYY		Page: 1 of 31	

															
LIBONDO PROJECT JACKET FABRICATION															
BOSCONGO YARD - LIBONDO JACKET TECHNICAL ANNEX FOR SCAFFOLDINGS SUBCONTRACT															
<table border="1"><thead><tr><th>Revision</th><th>Status</th><th>Date</th><th>Revision memo</th><th>Issued by</th><th>Checked by</th><th>Approved by</th></tr></thead><tbody><tr><td>A</td><td>IPR</td><td>11-06-09</td><td>Issued for Review</td><td>stam</td><td></td><td></td></tr></tbody></table>		Revision	Status	Date	Revision memo	Issued by	Checked by	Approved by	A	IPR	11-06-09	Issued for Review	stam		
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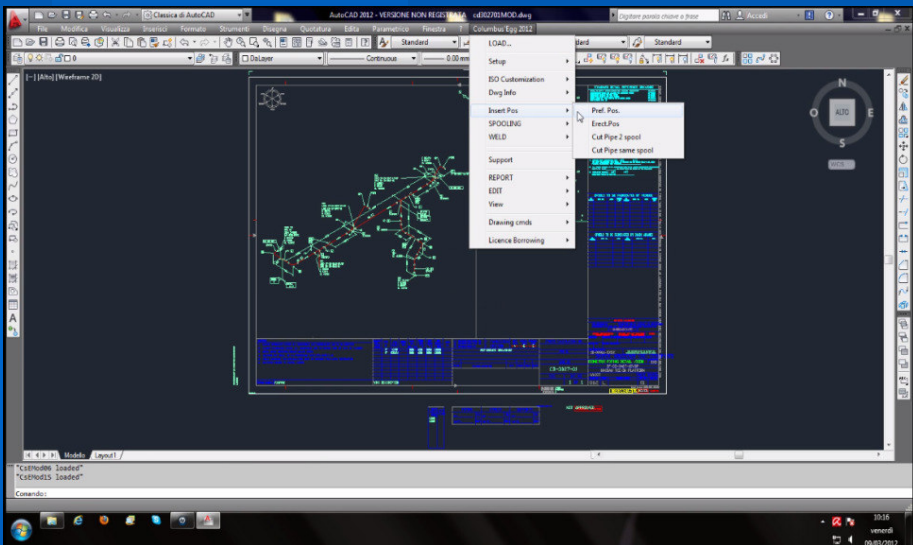
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PAINTING & MARKING PROCEDURE		Revision: 0	Status: IPR
System/Subsystem: 00	Discipline: 000	Rev. Date: 30-May-09	Approval Class:
Contractor document number: YYY-YYY-YYY		Page: 1 of 41	

															
LIBONDO PROJECT JACKET FABRICATION															
BOSCONGO YARD - LIBONDO JACKET PAINTING & MARKING PROCEDURE															
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- Boscongo Pointe Noire Yard
- Specifications and Procedures
- Personnel on site to support the Yard Technical Office

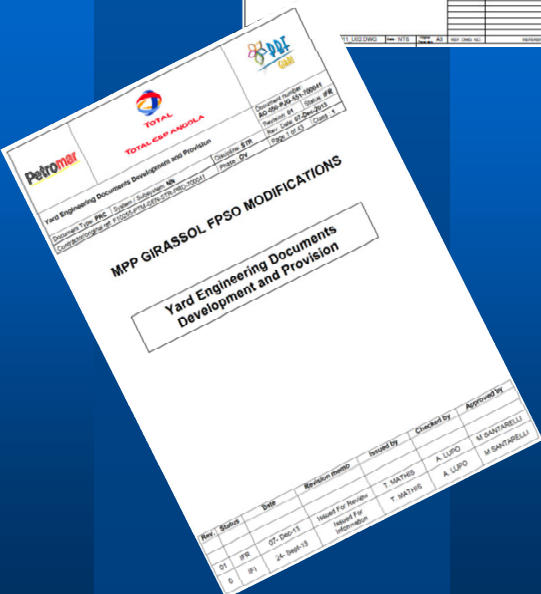
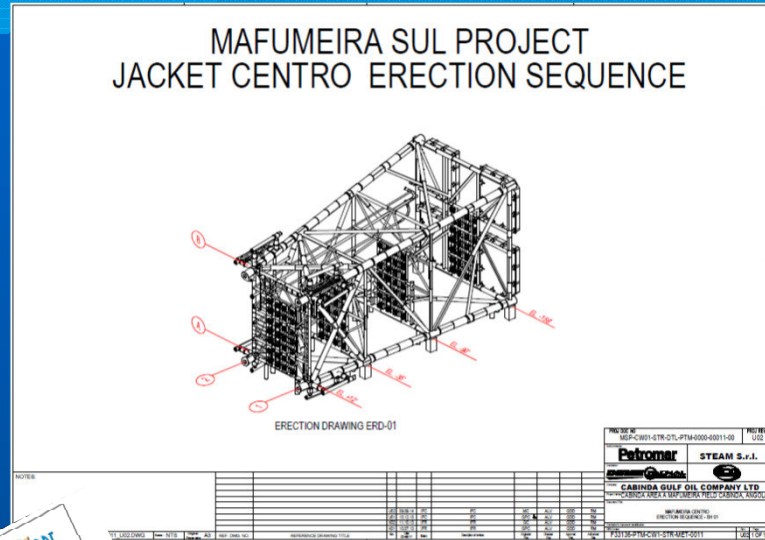
Construction Yards Support



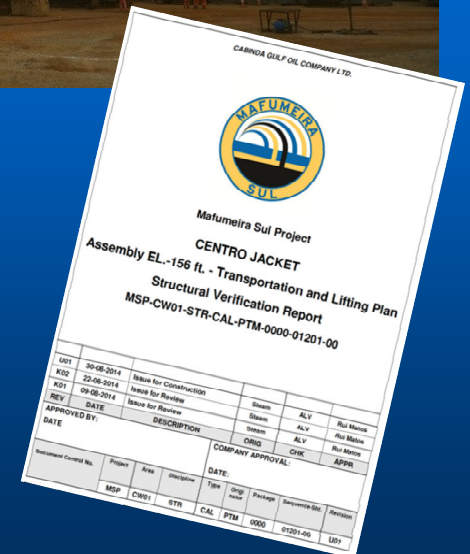
Karimun Yard - Indonesia

- Method Engineers on Site
- Software for Piping Engineering
- Instructor Engineers on Site

Construction Yards Support



- Erection Sequences
- Lifting and Transportation Plans
- Shop Drawings
- Project Engineering
- Engineers on Site




Structural Design



- STEAM provides for design of offshore platforms, onshore plants and naval engineering.
- The “fabricator/constructor point of view” is always present in all design steps.
- The Design is based on the “fit for purpose” criteria.
- STEAM has obtained ISO 9001 certification for Steel Structural Design.

Offshore Platform Design

	SAIPEM S.p.A.	DOC.N° J0806-R-SD-C-05051
	Scarabeo 8 DFMD/FS Mazzarinos EL.+50650 & EL.+45650 FEM Analysis	Rev.: A4 Date: 12/03/10 Page: 5 of 39

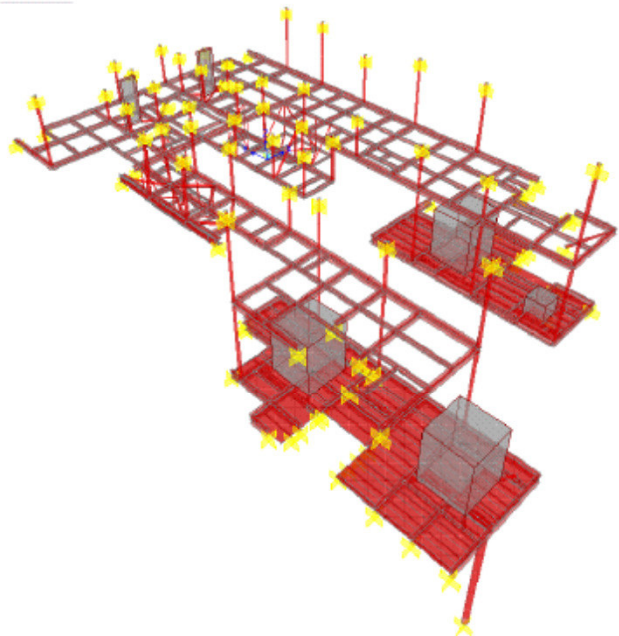
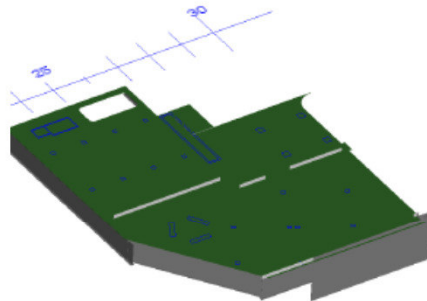


Figure 3.1: 3D view

ipem	CUSTOMER:	ENI NORGE	Job No.	Document No.
	PROJECT:	SCARABEO 8 CONSTRUCTION	158682	SA-245.000-RA-0005
	TITLE:	DRILL FLOOR GENERAL Cantilever Platform - STBD	Rev. A2	Sheet Page 1 of 40

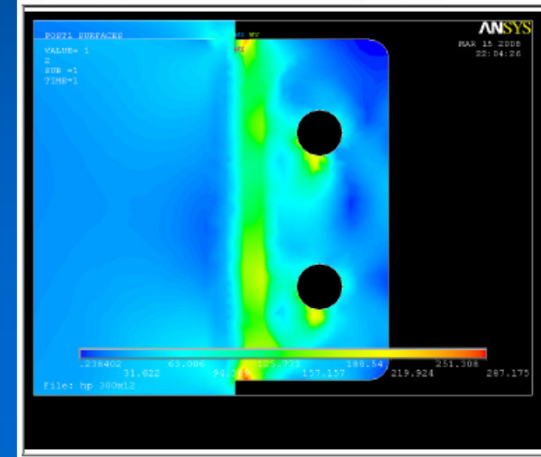


DRILL FLOOR GENERAL
CANTILEVER PLATFORM - STBD

Rev.	Date	Issue Description	Prepared By	Verified By	Approved By	Client Approval
A2	22/03/10	Revised where indicated	FT	GW	KT	
A1	06/11/08	Approved for Construction	EC	GW	KT	

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Figure 3.3.1.h. "Equivalent VonMises Stress in shear plate lug 1" Contours.

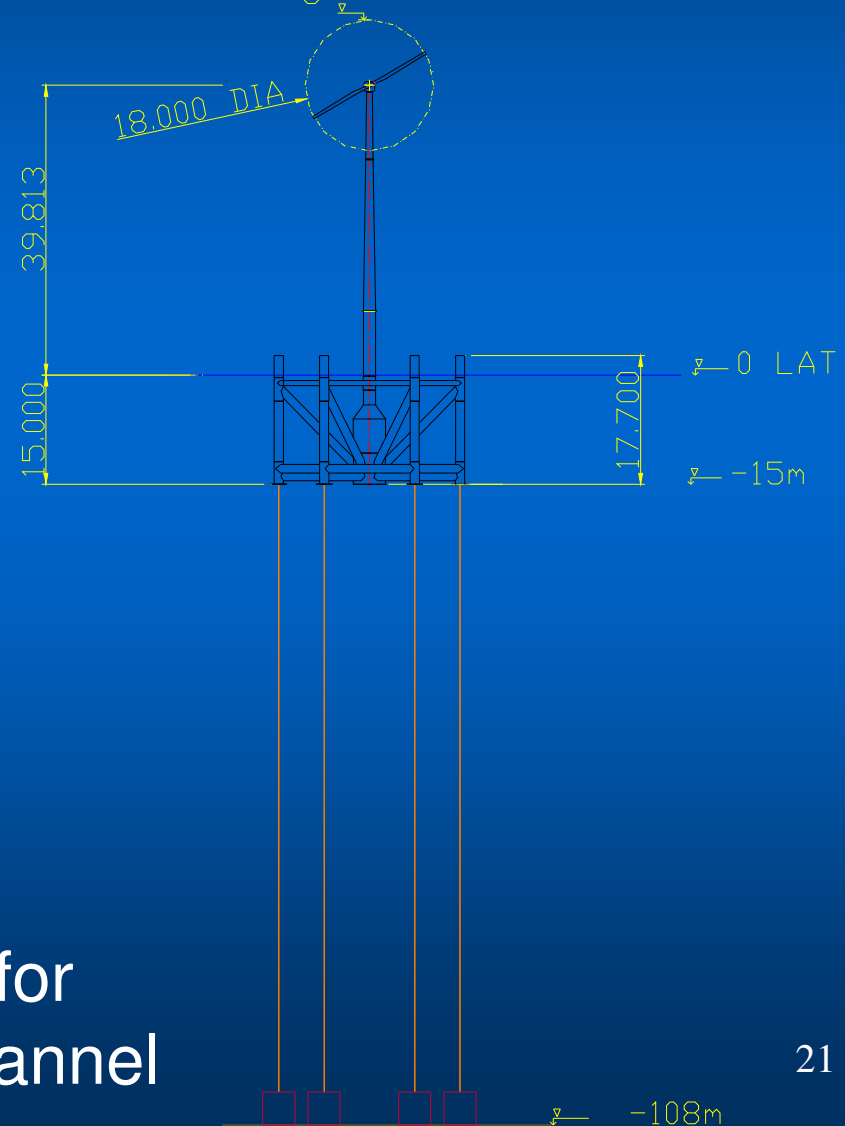


Saipem Scarabeo 8
Structures and plant
design

Offshore Platform Design

Tension Leg Platform for Wind Tower

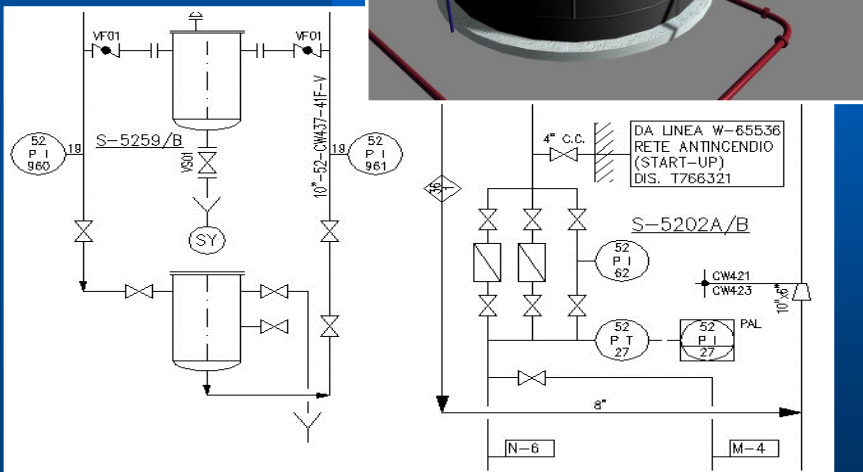
48.813m maximum height over the sea level



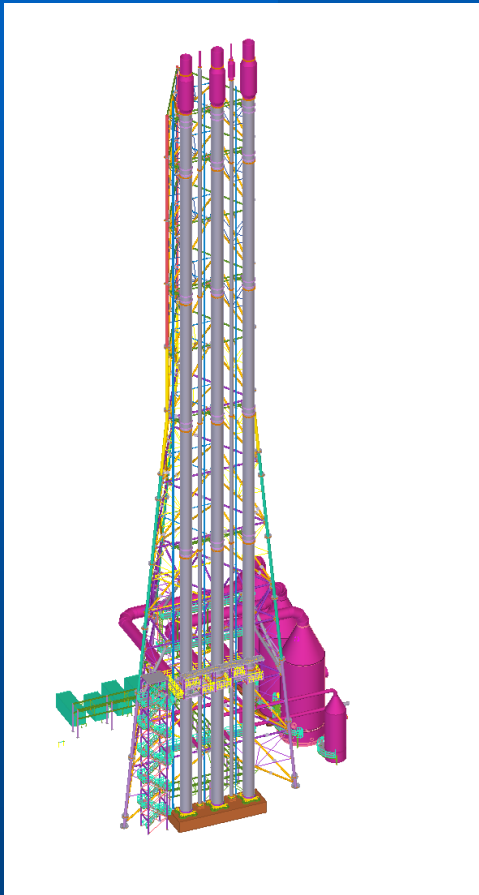
Blue H Group
First worldwide prototype of a TLP for
Wind Tower installed in Otranto Channel

Onshore Plant Design

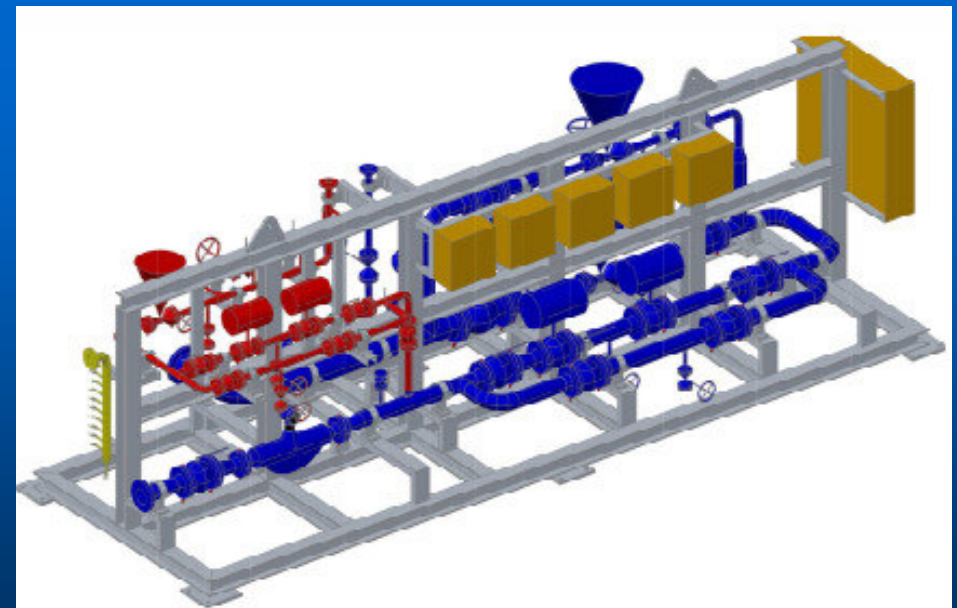
- Steam has the competence to develop the design of the onshore plants such as: Machinery Specifications, Tanks and piping design according to the main international Rules



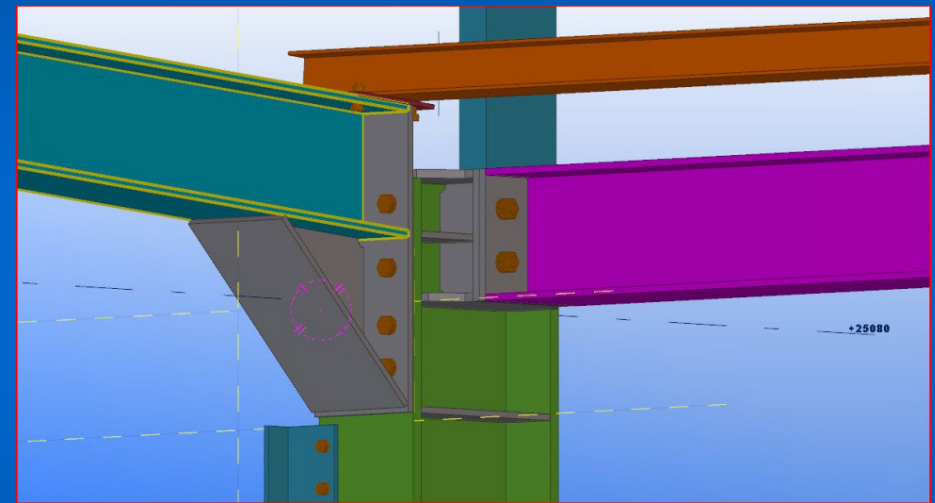
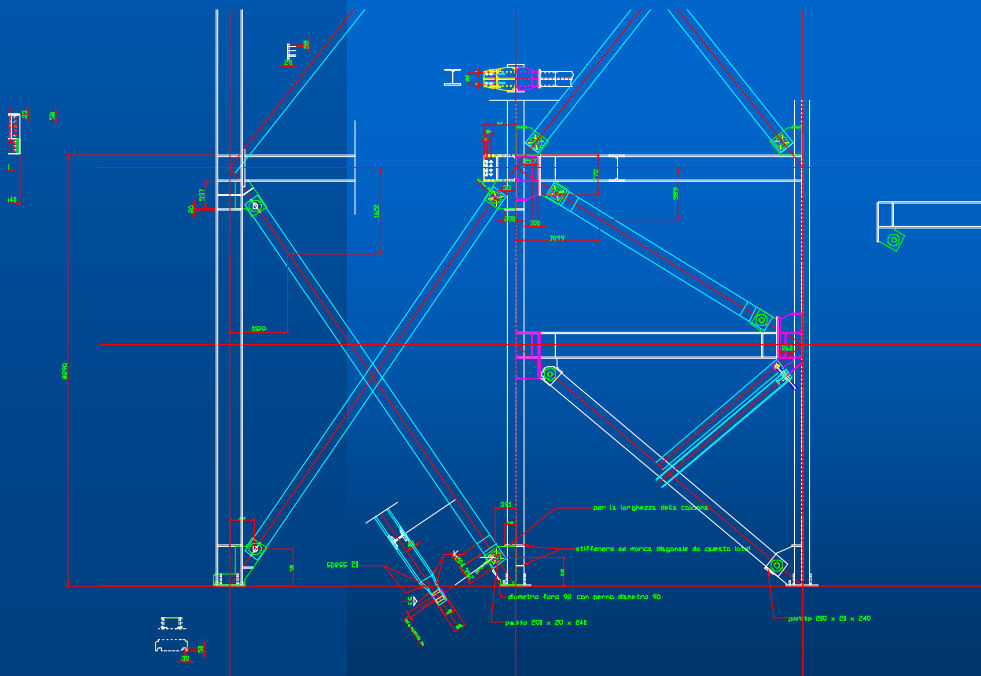
Onshore Plant Design



- Detailed Design of Specialistic Full Packages as Flare Systems
- Fuel Gas Skids.

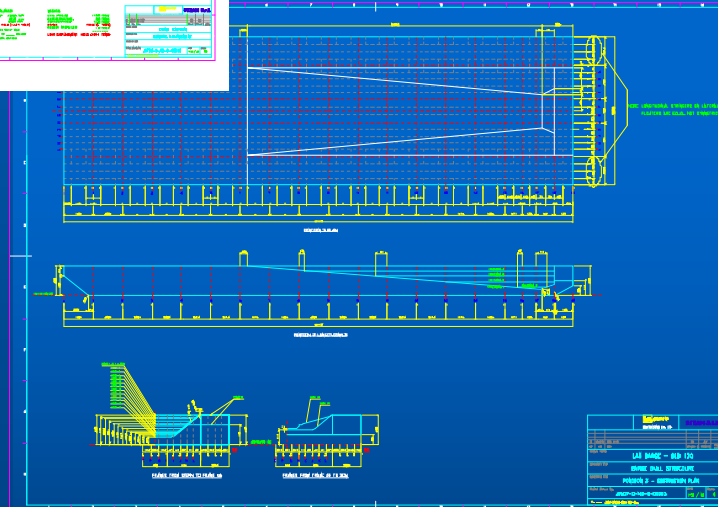
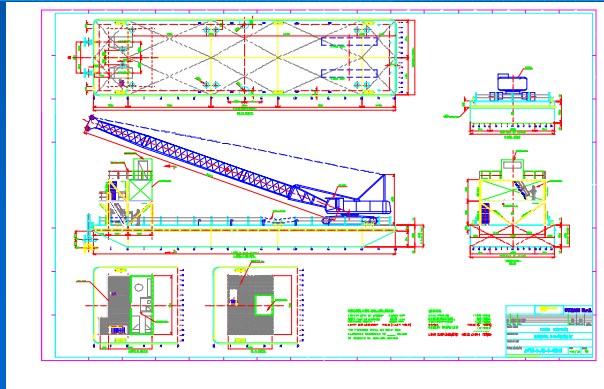


Industrial Building Design



SFIR Ravenna
Sugar Refinery - Brindisi
Structural Design

Barge Design



Saipem Contracting Nigeria Ltd

- Lay barge (120 m long)
- Various service pontoons

Shop Drawing Preparation

- **Steam has a long experience in the shop drawing preparation coming from the one got through its management in previous activities.**
- **Steam mainly manages the 3D models (Tekla, Rhino, and Inventor) to produce the shop drawings according to the Client needs and the production equipments to be used.**

Shop Drawing Preparation



Petromar
Kizomba Satellites Project
Shop Drawing Preparation
Weekly Progress Report
Week 18 from 03/05/10 to 08/05/10

DOC.N° J1001-R-MD-W-00018
Rev.: 0
Date: 08/05/2010
Page: 1 of 12

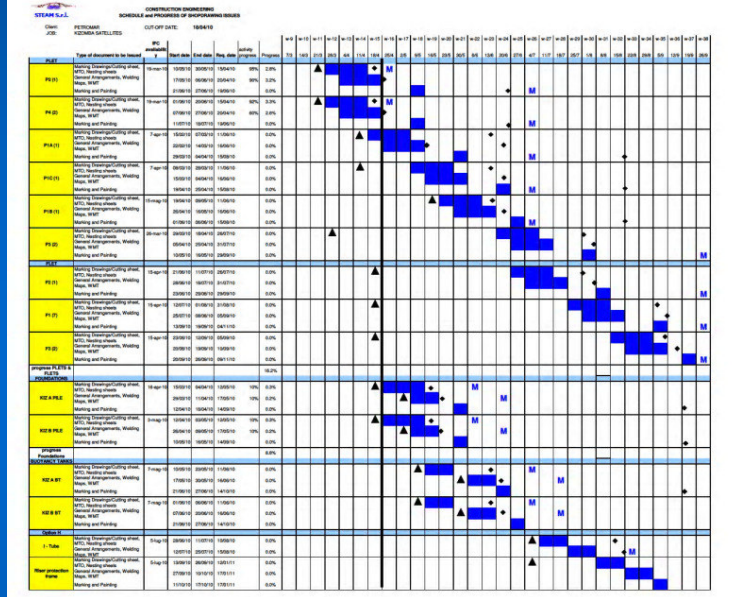
Petromar
Kizomba Satellites Project
Shop Drawing Preparation

Weekly Progress Report

Week 18 from 03/05/10 to 08/05/10

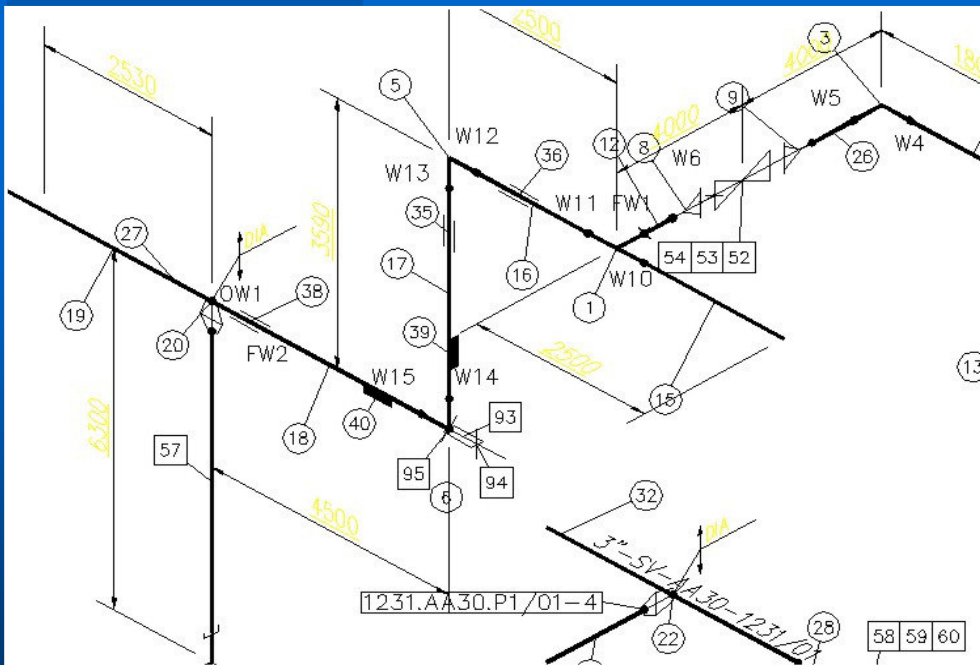
REV.	DATA	DESCRIZIONE	COMP.	VERIF.	APPR.
0	08/05/10	Issue for reporting	AL	ALV	

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- Schedule and progress keeping
- Fast and accurate follow-up

Isometric Shop Drawing Preparation



- The “Columbus Egg”, a proprietary and well reliable software, is used to assure a fast and easy piping shop drawing preparation.
- We can start directly from the design isometrics without the need to have in house the 3D design model and the consequent expensive hardware.
- The main Projects where the Columbus Egg has been used are:
 - Scarabeo 8 fabricated by Saipem-Intermare
 - ICOEEP-CMMP Deck and Al Wasit Decks fabricated by PT Saipem
 - GIRRI modules and Hook-up spools fabricated in Ambriz Petromar Yard.

Available Software

- **AutoCAD or clones**
- **AutoCAD Plant 3D or clones**
- **3D Tekla Modeler**
- **3D Rhino Modeler**
- **RFEM / RSTAB for Structural Verification**
- **IDEA STATICA for Connections Verification**
- **SAP 2000 FEM Analysis**
- **Caesar II**
- **PV-Elite (including FEA)**
- **Pro-E Mechanics FEM Analysis and Design**
- **Columbus Egg - Proprietary Software for Shop Isometric Preparation**
- **Several Software for Production Support (Plate Nesting, Tubular Nesting for HGG machine)**
- **Hydronet and Hydroflo - Hydraulic Software for Nets and Pump Sizing**
- **Various Softwares for the Office.**