

Equinox Offshore Engineering Pte Ltd

Design and Manufacturing of Helideck Structures

Singapore

ANSYS

CAD-IT

CONSULTANTS

Overview

Equinox Offshore Engineering is a leading consultant in the marine, oil & gas industry. It provides engineering support services to Equinox Offshore Accommodation Limited in the conversion of ro-ro ferries to accommodation and repair vessels (ARVs) in Singapore, as well as to provide specialized engineering services to the international offshore and shipping industries.

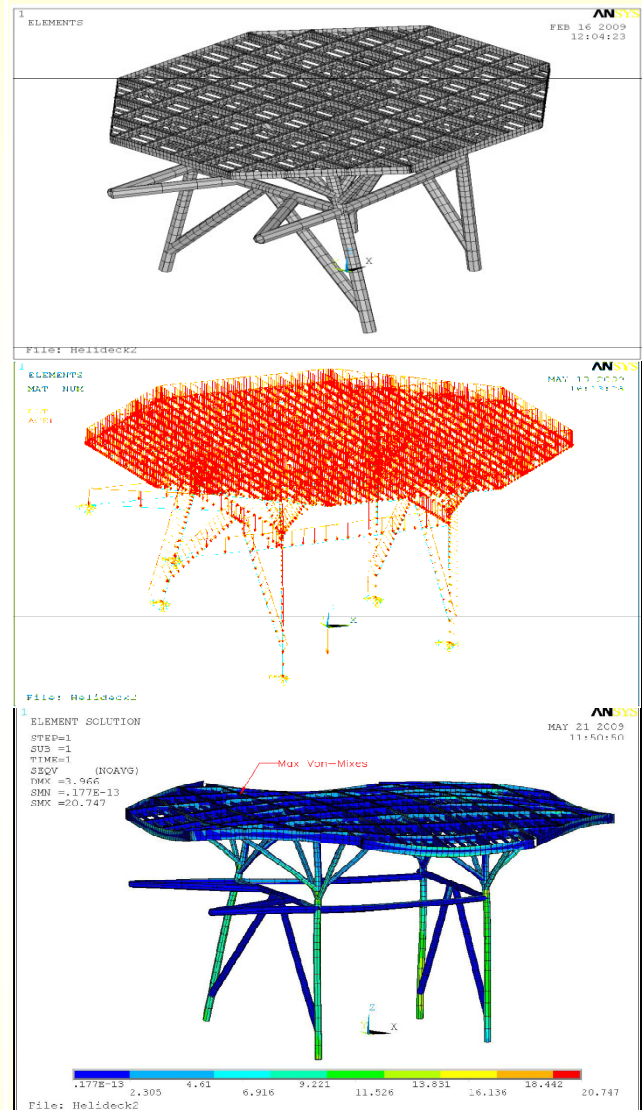
Equinox Offshore Engineering employs a team of specialist engineers, naval architects and marine managers with backgrounds relevant to the design, conversion and operation of offshore vessels including ARVs, FPSO, FSO and other specialized offshore units.

Testimonial

Design modeling is an important step during the initial period of product development, as it is more flexible and accurate to convert from CAD software. The computer simulation enables the engineer to effortlessly explore various possible solutions that might be implemented. It is also very easy to perform modeling, which reduces the design optimization process complexity. This decreases the development time and costs significantly.

These advantages gives a competitive edge to Equinox Offshore Engineering Pte Ltd, and builds a world-class Equinox team that develops products of the highest quality.

Muhammad Yusuf, ST
Lead Structural Engineer
Equinox Offshore Engineering Pte Ltd



Process

One of our clients required us to design a helideck structure, where beam and pipe components are to be used. We imported the AutoCAD model into ANSYS and applied the constraints and several loads, including wind load and especially ship motion. We were able to find the high stress levels due to these severe loads. The helideck structures will be used for three helicopter types; among them are Puma and Sikorsky S92.

Solution

One of the main considerations was the force and pressure experienced during assembly. Before installing the equipment, we must know the moments and forces distributed to the parts in order to determine the areas with high stresses. Both the ANSYS Workbench and Mechanical APDL environments were used to perform the stress analysis. The results enabled us to identify potential problematic areas experiencing high stress during assembly and disassembly.

Benefits

Based on our experience of using ANSYS on the Mechanical APDL and Workbench environments, benefits include its modelling ease-of-use and superior model conversion from other CAD softwares. These benefits enable us to save on design iteration costs and improve efficiency. Most importantly, we were able to identify the materials experiencing high stress after applying the forces and pressures to the model parts. ANSYS was further used to optimize the final design before fabrication.