

Make the move

NAVAL ARCHITECTURE

to MARINE CONTRACTING



Interested in the exciting opportunities in the marine contracting sector but not sure how to match your education, experience and skill set to a relevant career? This **make the move** series aims to explain just where you might fit in.

Apart from designing the most amazing new fleet of offshore construction vessels, what else might naval architects do in the marine contracting industry?

Their skills and training in analysing a vessel's weight, buoyancy, stability, motions and drag are immediately transferable to the marine contracting industry. Who else understands so well a vessel's 'six degrees of freedom', that is, the six ways in which a vessel moves in water: pitching, rolling, yawing, heaving, swaying and/or surging?

Vessels in the marine contracting industry are involved in a wide range of activities from installing offshore structures to producing and storing oil. And a number of high-tech vessels are also deployed underwater.

A naval architect may contribute in the following areas:

■ Vessel workability

A vessel at sea needs to be able to work for the maximum amount of time so it is vital that the correct calculations are made at the design and construction stages to ensure its movement does not lead to unacceptable levels of inactivity, known as downtime or waiting-on-weather.

■ Forces affecting a vessel

The forces on a vessel and its cargo and equipment must be understood for safe operation. For example, a crane vessel which rolls too much would have a lot of downtime as continuing to work would be considered too dangerous – or worse, the crane could collapse and be out of commission completely or perhaps cause multiple injuries or deaths.

■ Station keeping

Complex calculations are called for to understand the significant forces involved in keeping a vessel safely moored or held in position by dynamic positioning to carry out its construction activity.

■ Underwater vessels

Many pieces of equipment used in the oil and gas industry are designed to work subsea, including remotely operated vehicles, autonomous underwater vehicles and structures such as subsea manifolds through which oil and gas are produced. They all need to be able to withstand the forces experienced in the 'splash zone' and manoeuvre underwater while remaining stable. Some of these items of equipment also need to be recovered at the end of a job.

The offshore oil and gas industry offers even further challenges. It is unique in not only using 'ship-shape' vessels – its units come in all shapes and sizes, ranging from semi-submersible drilling rigs and spars to submersible vessels.

This exciting work offers naval architects an opportunity to travel all over the world reflecting the global nature of the industry.



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