

Off the beaten track

Raising the profile of quantity surveyors working in all sectors and specialisations is vital to ensuring growth of the industry: the first article exploring these different avenues focuses on quantity surveying in the oil and gas industry

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Offshore engineering and construction projects in the oil and gas industry can include offshore pipelines and infrastructure, production facilities such as floating production storage and offloading units (FPSOs) and floating offshore structures (FOSs), and wells and subsea operations. These projects all require quantity surveyors, but this article focuses on the construction and installation of offshore fixed installations, either rigs or platforms.

The offshore quantity surveyor will be involved in a range of assignments and project phases, both onshore and offshore. Platform topsides, jackets – the structural supports, or ‘legs’ – modules and equipment are all fabricated in yards and factories onshore and then sailed out, installed, ‘hooked up’, or connected, and commissioned, before being put into operation.

The onshore fabrication phase is the phase that bears most resemblance to traditional construction activities. However, the elements of work tend to differ from traditional activities, with the bulk of the work involving structural steel – unless concrete gravity bases are used – mechanical, piping, electrical and instrumentation works.

Once onshore construction is complete, the installations are transported and installed by vessel fleets – also known as marine spread – including heavy lift vessels, barges, flotels, support vessels and jack-ups. They are then hooked up and commissioned by the offshore construction disciplines. This is all performed in a high-risk environment, and often in poor weather.

The mix of professions and trades in the offshore sector is markedly different to traditional onshore work, which reflects the heavy engineering nature of the projects. There are few architects and civil engineers offshore, replaced instead with engineers from various disciplines including process, mechanical, structural and electrical engineers.

Major direct trades commissioned offshore – such as trades performing measurable construction activities on the platform – include welders, mechanical and pipe fitters, platers, electricians and instrumentation workers – and these are all supported by indirect trades providing construction assistance, such as riggers, scaffolders, rope-access technicians and operators, and a number of other technicians, supervisors and managers. In addition to these there are the marine activities performed by crews working from vessels, as well as professional divers and remotely operated underwater vehicle (ROV) operators.

Offshore challenges

The offshore location drives the requirements for safety, productivity and logistics. It is a dangerous working environment with limited accessibility and working

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space, as well as the potential risks of hydrocarbon and poisonous gas release, so construction work in this environment requires detailed planning and risk and emergency management.

The limitations and constraints of offshore work and their effect on productivity also differ from traditional onshore construction. Limited space and logistics can often result in contracting companies being restricted in their ability to plan and manage work schedules or maximise productivity. The amount of unproductive time will typically be far higher than on an onshore project and this will impact how risk and cost is apportioned under the contract, particularly in relation to issues such as mobilisation or demobilisation times, access to work sites, material delivery and production time lost due to bad weather.

All these factors often result in a different risk and cost profile from traditional onshore contracts. It is common to find offshore works remunerated, at least in part, on time-based unit rates such as person-hour rates, or hourly or daily rates for marine spread. As a result, quantity surveyors are presented with specific challenges in cost management and forecasting.

Standard onshore construction contracts will not reflect the full requirements for offshore engineering and construction works. The offshore industry, therefore, has its own sets of standard contract forms that reflect the risks and requirements of working offshore. Examples include LOGIC (UK), NTK (Norway), BIMCO (vessel standard contracts) and the numerous bespoke contracts used by oil companies.

The challenge to the offshore quantity surveyor can be demonstrating best practice in a sector where the profession is not always understood. Therefore, a quantity surveyor working in this environment needs to be adaptable to integrate with offshore industry requirements, yet they must ensure they do this without compromising professional standards,

integrity, ethics and morals. Stubborn determination can be a useful trait for an offshore quantity surveyor.

Developing specialist skills

Despite the differences between offshore and traditional construction, the key skills of a quantity surveyor are transferable between the sectors: measurement, contract practice, commercial management and valuation of works are all examples of applicable quantity surveying skills and practices.

Overseas experience, or experience of working among diverse cultures is beneficial, since even if working in a familiar country, the offshore quantity surveyor can be working in a micro-global community. Soft skills such as versatility and impartiality can go a long way.

Professional experience across certain sectors and project types, especially engineering and marine projects, is valuable, as is a thorough knowledge of a wide range of contract forms and their standard principles. Given the international nature of the offshore industry, a quantity surveyor will also benefit from a good understanding of international arbitration and mediation practices.

The ability to commercially manage high value projects is also a valuable skill in this sector. This is not simply the ability to manage increases in scale, but to also retain a sense of context and value while doing so. An offshore quantity surveyor needs to be capable of negotiating and managing large project values.

In summary, the offshore industry offers many benefits for quantity surveyors, including:

- development of specialist expertise in a sector in which few quantity surveyors practise
- overseas working opportunities and exposure to diverse cultures
- gaining knowledge of specialist technologies and construction practices
- advancing best practice in a niche sector.

However, consideration should be given to the fact that the profession has a relatively low profile in

the construction sector and, as described, it can be a challenging professional environment. Offshore quantity surveyors can sometimes feel isolated and consequently have fewer support resources – there is an opportunity for institutions such as RICS to engage more with the sector.

Looking ahead

There is significant scope for the growth of the profession in the offshore sector. As economies seek to move away from hydrocarbons as an energy source, opportunities for offshore quantity surveyors will emerge. The global market in decommissioning is also potentially huge: all existing offshore oil and gas installations will, at some point, need to be decommissioned and removed. Recent estimates suggest that the UK offshore decommissioning market alone will incur expenses of around £15bn between now and 2027 (bit.ly/OandGdecommissioning).

In addition to the more familiar sight of wind turbines in shallow offshore waters, there is growing investment in deep-water floating wind turbines and other deep-water renewable technologies. It is estimated that a majority of Europe's wind energy is situated in depths greater than 60m, deep-water wind technologies therefore have the potential to become a significant subsector of the wider offshore industry. Professionals already specialising in the offshore industry will be well placed to transfer their skills and experience into these expanding sectors.

The offshore industry needs the skills and competencies of the quantity surveying profession, including cost planning, commercial or contract management, valuations of work and dispute resolution. Offshore quantity surveyors and professional bodies need to work together to ensure that our profession is an essential partner in the oil and gas industry.

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RICS responds to the opportunity

Establishing a consistent global standards and skills framework for the financial management of construction, in all sectors, is a key aim of RICS. Some sectors, such as oil and gas, need to be addressed in a more focused way and this is our intention. Collaborative, global, international standards such as ICMS (icms-coalition.org) are a vital building block in bringing consistent terminology and cost classification across all sectors. In turn, these standards will be mapped and linked to more granular standards in specific sectors, such as oil and gas. Together, with the forthcoming RICS global Black Book, these standards will cover a body of knowledge for quantity surveying across all sectors.

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