



Accommodation room

# Modular accommodation: flexible assistance to the offshore wind sector

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With the continuous progression of the offshore wind industry we find more operators than ever searching for effective and efficient solutions to their operations. In the wind energy sector, modular units can be placed on a huge variety of vessels and barges to accommodate the manpower required during the commissioning phase of the projects.

Accommodation modules are designed to interface with the control rooms, which enables great flexibility when it comes to last minute changes in projects and the varying requirements for staff. They host a range of benefits, as shown below.

## Fast and efficient

With the palpable shift towards sustainable/

renewable energy across the global industry, more organisations are opting for swift modifications on all types of fixed installations in order to keep-pace with the ongoing demand. In previous years, many of these organisations believed to have ample time to prepare for the next energy revolution, with long-term, extensive and costly new builds for their projects.

However, we now find that in order to keep up, rapid conversions of existing vessel types, with the support of modular units is proving to be the way forward.

As we know, a new build can be very expensive, with a long lead time to manufacture. When swift vessel modifications are the preferred option, modular units are a vital part in this



process. The fundamental concept of modular units enables them to be extremely versatile and flexible, with simple and fast construction. This can make the decision of commissioning a completely new vessel or not more straightforward.

It saves time and expenses for an organisation to quickly convert and enhance current vessels, and modules can deliver a quick solution for additional POBs which may be required as a result. Long, drawn out modifications are reduced, as the simplicity of a modular build saves significant time on such projects. With the intrinsic design and feasibility, they create an efficient and economical solution, offering a safe and secure living environment in a fast-paced industry.

#### Reliable and safe

By having each separate modular unit being constructed off-site under manufacturing regulations, the units are under intense quality management, and thus offer solid safety credentials. Manufacturing plants have strict quality assurance and control programmes with independent inspection and testing procedures that promote superior quality of construction at each stage. This is where the relevant industry certifications

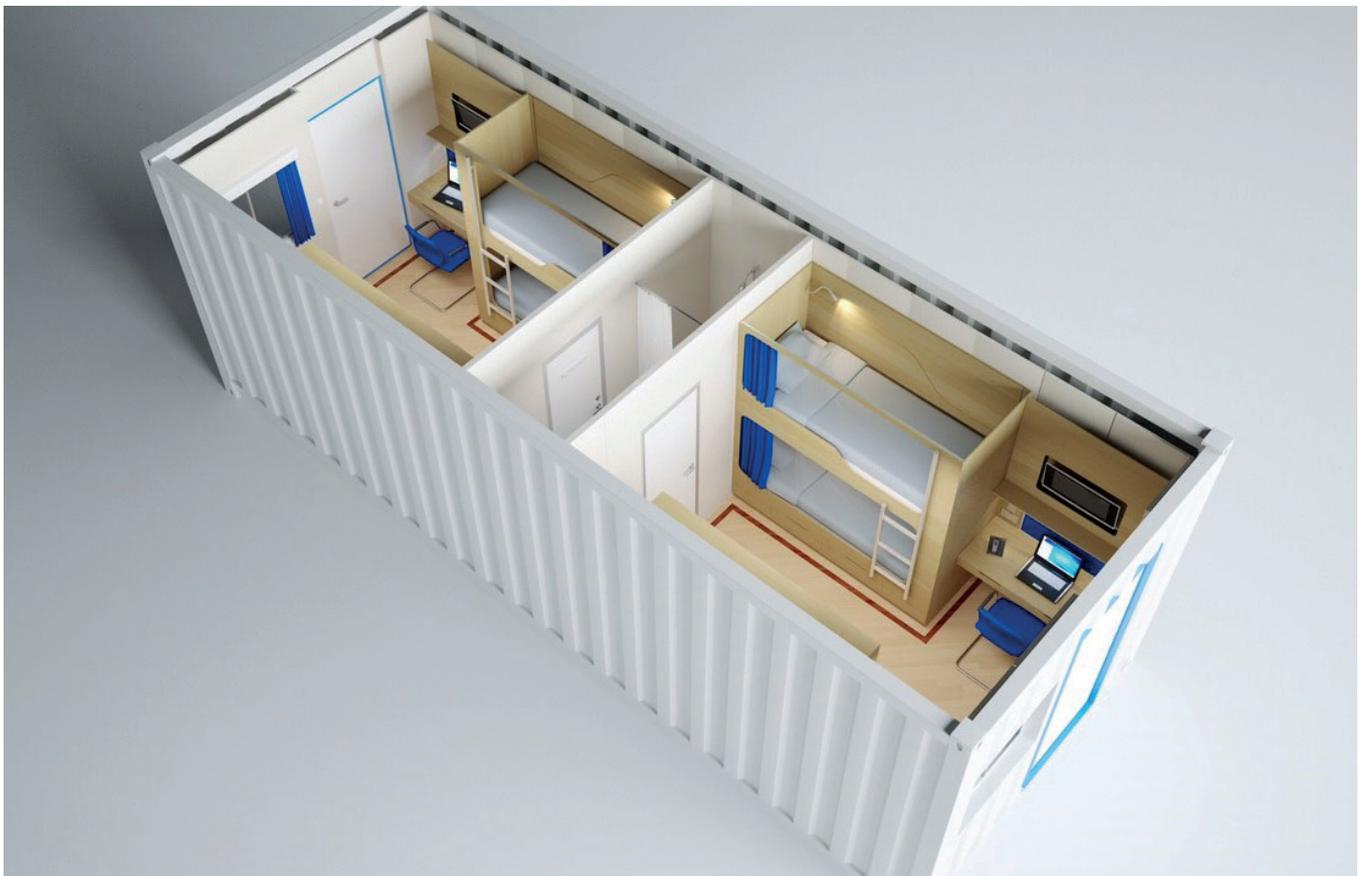
are incorporated into the design and manufacturing process.

In the offshore modular and container industry, DNV 2.7-1/EN 12079 and SOLAS are crucial in assuring safe and secure living environments for a workforce. With these certifications and design standards in place, it equips the module with the appropriate features to be protected and withstand even the most hostile offshore and marine environments.

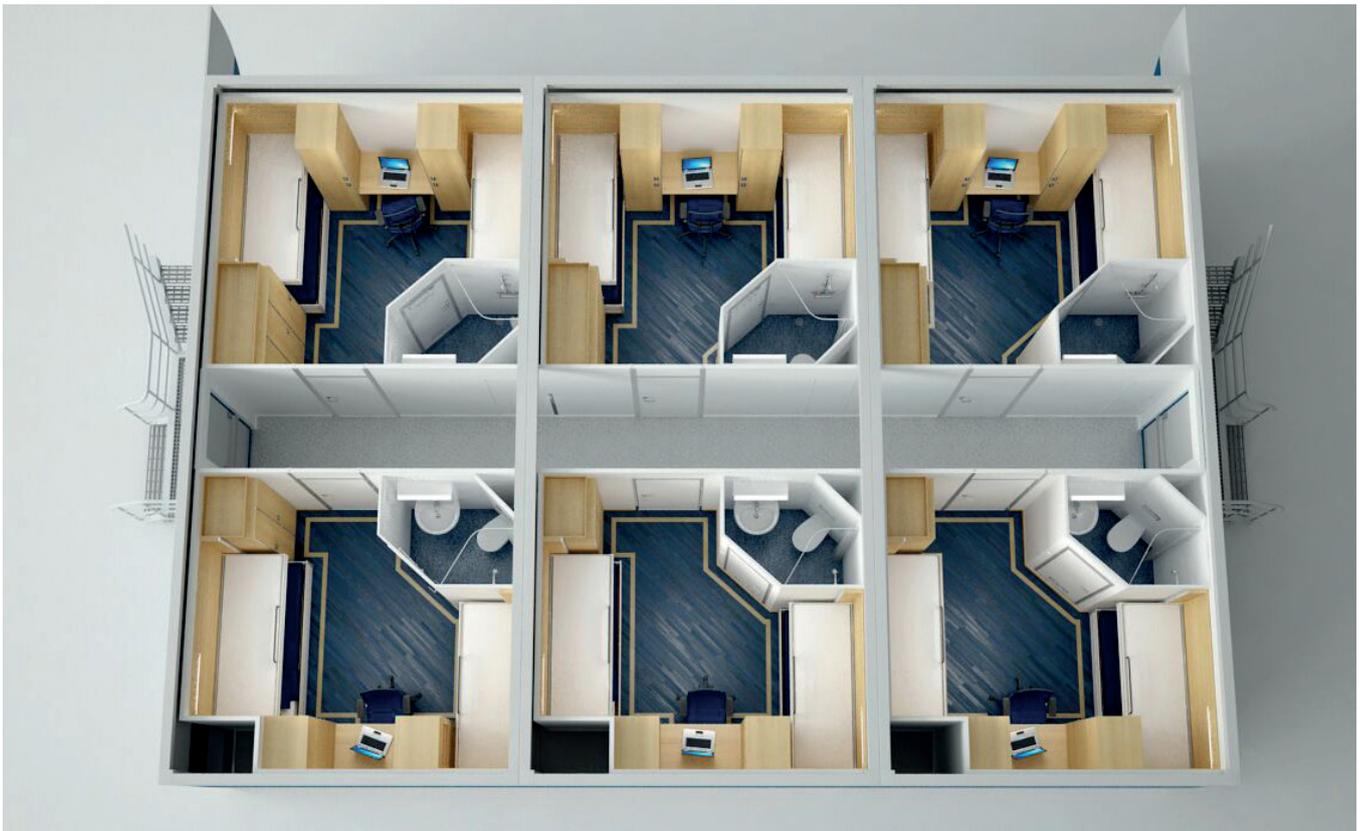
Subsequently, additional features can be added to accommodation modules to further improve the safety of the units. A typical offshore accommodation module is usually equipped with fire and gas detectors, sprinkler system, fire dampers, emergency lighting and automatic shutdown capabilities through the vessels control panel. With a further heating, ventilation and air conditioning system (HVAC) to ensure a comfortable environment is maintained around the clock.

#### Versatile ingenuity

Perhaps the most beneficial element to modular accommodation is the ability to meet all individual requirements and technical specifications, which can lead to a fully functioning living quarter installed in a matter of weeks. Modules can be linked



Accomodation module



Linkable modules

and stacked together to form multi-purpose, multi-level accommodation complexes on board installations. As a result, hook-up time and associated costs are dramatically reduced, providing clients with a cost-effective solution when additional beds and living areas need to be found at short notice.

Once a living quarter is created, there are additional modules which can be configured for facility and ancillary purposes. This allows gymnasiums, locker, recreation, music, laundry, galley and mess rooms all to be incorporated into the complex. By utilising a modular build system, the opportunity to produce any type of module function becomes immediately achievable.

Being able to provide diverse options through modular capabilities has a profound effect on not only the scope of operations available offshore, but also to the morale of the workforce who calls the complex home. With the many types of installations and vessels offshore, life can often seem isolating or claustrophobic. Offering a vast selection of facilities on-board from areas of gathering, to places of solitude and privacy can significantly help an employee to switch off and feel more at home.

#### Benefits to offshore substations

Of course, there are other capabilities in

which modular units can deliver on – offshore modular substations. Substations are an indispensable part of the operation at large multi-megawatt sites, with a core function of alleviating and maximising the power voltage generated and transmitting that to shore.

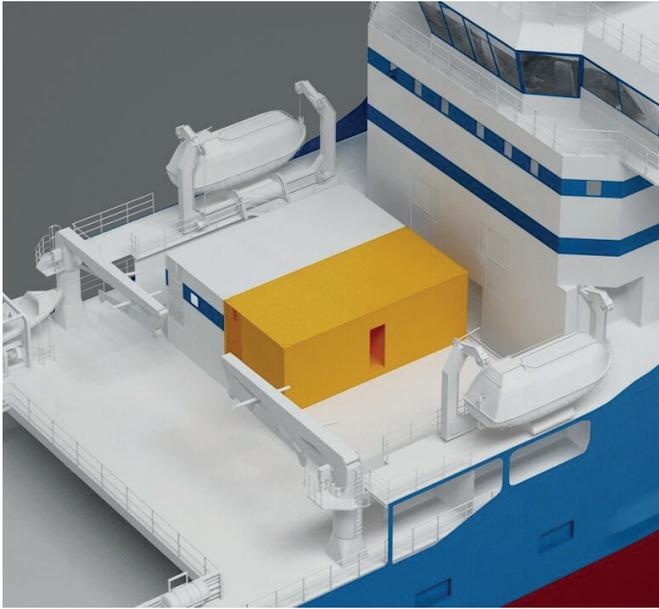
Modular units are a perfect fit for this as essentially, they significantly diminish the cost of such installations. In many cases, the current topsides have reached their weight limitations and thus the accurate calculation and supervision of the

topsides' weight is becoming a serious factor. The units, which usually weigh significantly less than previous construction materials, reduce this issue and can be installed by the same vessels as the foundations. This means the installation can be carried out by vessels that are already on site which are significantly cheaper than the heavy-lift vessels usually required.

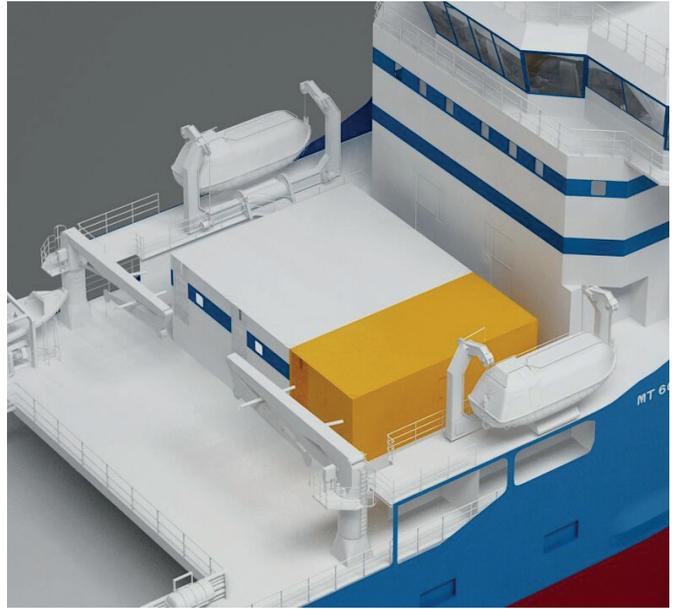
The 'Plug & Play' construction method means that units can simply be taken out and plugged onto an installation, ready to



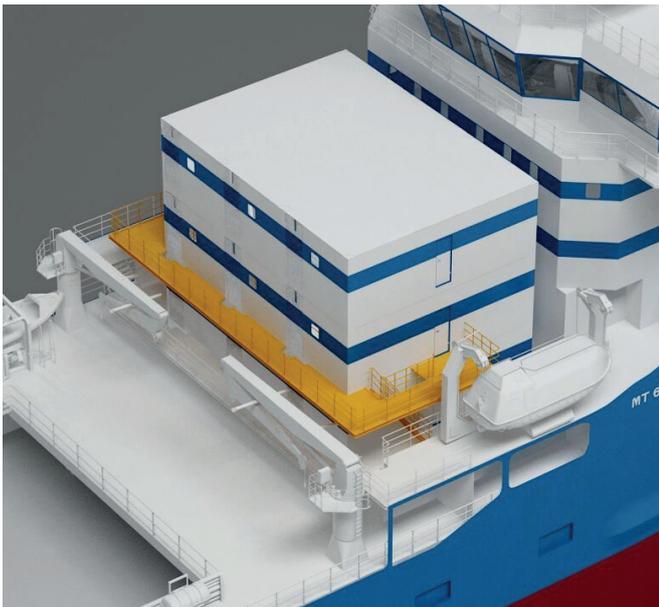
Interior accommodation



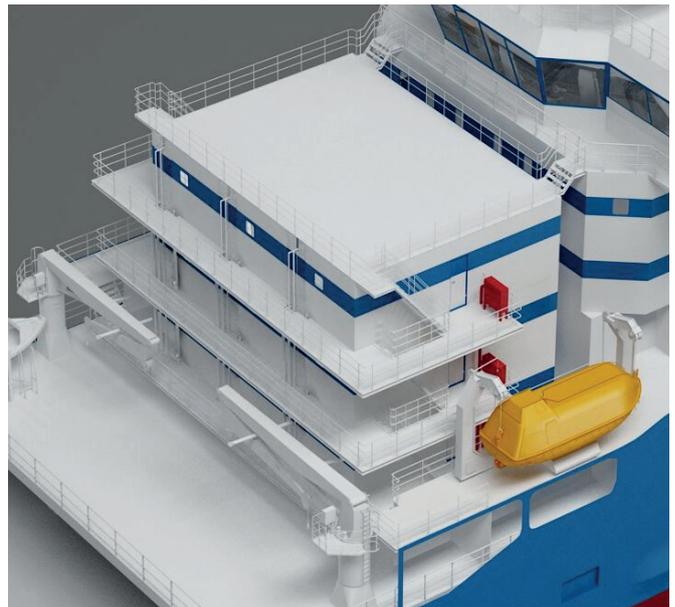
First Module Laid Down



First Level Complete



Block Three Levels Complete



Block with Walkways &amp; Stairs

be connected to the control room with ease. This standardised approach through modules, which hosts many benefits, notably reliability, has already been adopted for complex engineering projects offshore.

Rather than erecting major equipment on an offshore platform, the substation equipment is already assembled in the units. This includes the linings and internal power distribution at the manufacturing area onshore, ready to be taken out and installed on the platform. This saves on development and commissioning costs and can cut around four to six months off

delivery times.

Furthermore, complexities from operations and maintenance are reduced and open more options in terms of keeping equipment sustained. It's no secret that maintenance offshore is a meticulous and expensive burden. A modular approach gives the option of bringing maintenance personnel to the platform for minor complications and even enables the equipment to simply be taken ashore and repaired there. With this, units can be immediately replaced with a spare modular unit, which is already outfitted and ready to be taken out at short notice. These maintenance methods again

contribute to an already lowered expenditure for the future of operations using this modular approach.

Overall, lower topside weight, topside volume and reduced construction time brought about through modular units all contribute to lower cost of modular substations.

Modular accommodation units continue to be a preferred option for many industries. Offering simple, fast and smarter solutions with reliable results each time. There is no doubt this method will be continually utilised in the offshore wind industry.

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