

# Wind Turbine Support Grillage

## North Sea

170 High Street  
Gorleston  
Great Yarmouth  
Norfolk  
NR31 6RG

T: 01493 800 655  
e: info@technicusconsulting.com

**Sector:** Energy / Renewables  
**Client:** Pharos Marine Automatic Power  
**Value:** Unknown  
**Completion:** March 2019

Technicus Consulting was appointed by Pharos Marine Automatic Power (PMAP) to provide structural engineering services for the design of a steel grillage to support a 9m high wind turbine on the deck of an offshore unmanned platform located in the North Sea.

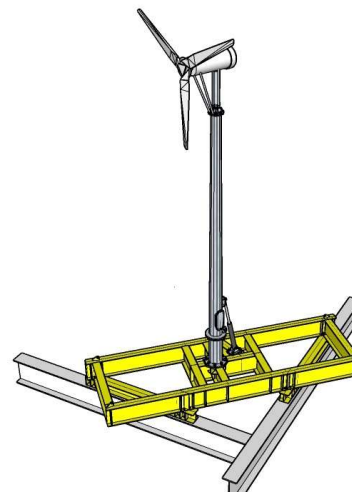
The wind turbine is required to supply power to navigational aids installed on the deck of the platform whilst it remains in lighthouse mode prior to decommissioning.

The support grillage spans between primary deck framing members and is elevated on spreader beams to span over existing cable trays installed on the platform deck.

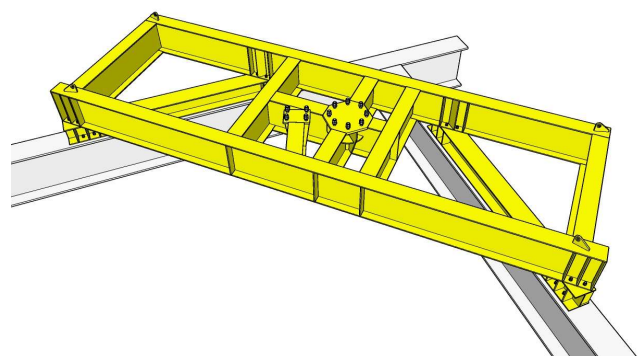
Due to the large grillage beam spans (8m maximum) and the 9m height of the turbine pylon, limiting deflection in the support grillage was critical to preventing large lateral movements in the supported turbine. Deflections were limited by the use of 610x229x101 UB primary grillage members.

Operational and lifting cases (to DNV 2.7-3) were analysed and designed using SCIA Engineer finite element design software.

Due to tight time constraints, the grillage was designed & detailed sufficiently for our client to produce fabrication drawings over a 5 day period.



*Grillage Supporting Turbine.*



*Grillage Without Turbine.*