

# Case Study:

## Offshore Dolphin Platforms, Falkland Islands

### Client:

Trant on behalf of Noble Energy

### Sector:

Infrastructure/Marine

### Services Provided:

Marine Piling  
Bored Piling

### Location:

Falkland Islands

### Value:

£1.256m

### Year:

2014



In 2014 Van Elle completed a very challenging project off the east coast of the Falkland Islands drilling rock sockets to anchor large diameter steel driven piles into the sea bed for a series of 125t GPS dolphin platforms. Due to the remote location detailed planning was essential in order that all required plant and equipment was ready for the shipping date. To ensure maximum reliability and efficiency, a full overhaul was conducted on the rig which included modifications so that the machine could utilise a system that was beyond the capability of the standard manufacturer's specification. The design and fabrication of the drilling system and sourcing of spare parts was also carried out within the same time frame.

Once the ship had docked in the Falklands and the site teams arrived on site to carry out their initial investigations, it was discovered that there were unforeseen design issues with regard to the tension anchor that was to be installed after drilling the rock socket. Van Elle's design team back in the UK, worked alongside the Client's designers to rectify these issues with modifications to the anchor system.

Each corner of the 4 platforms had a 1150mmØ circular hollow section leg which acted as a guide for the 1060mmØ steel piles to be driven into the tillite bands using a 36t hammer. Each dolphin then raised up its new legs and was welded into position 6m above sea level to create a piling platform. Once the void between the pile and the leg annulus had been grouted, we lowered the 660mm casing within the pile down to 3m into the seabed and drilled a 610mm DTH at 4000CFM and 25bar up to 37.5m from platform into the granite with a tolerance of only 15mm.

A specially designed 595mmØ 40m long anchor pile was lowered to the toe of the void in 2 sections to create the rock socket which once grouted was welded to the 1060mmØ pile.

