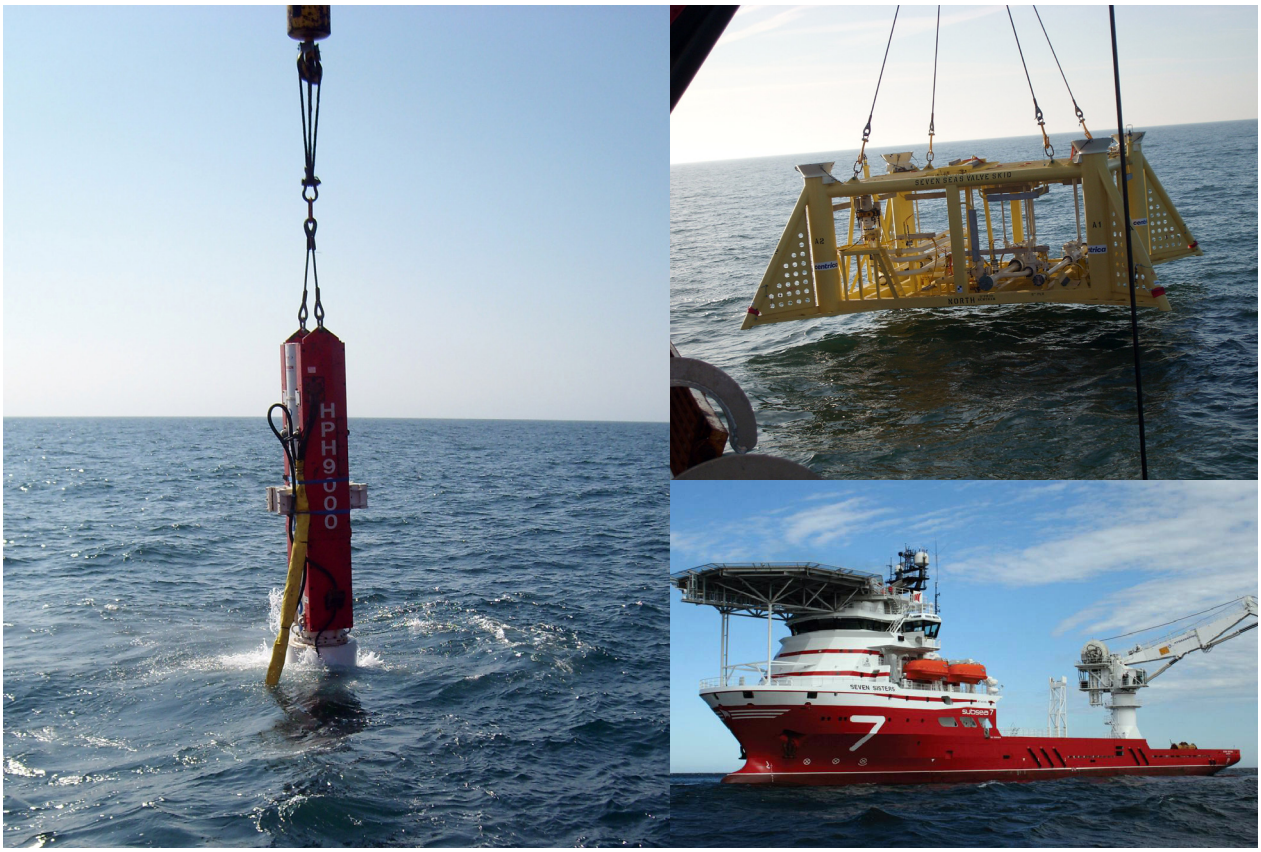
# UNDERWATER PILE DRIVING

## NORTH SEA (2009)




**Dawson Contract Piling Ltd supplied piling equipment and personnel to Subsea 7, who carried out works on the Centrica Grove Extension and Seven Seas Development project.**

**A total of 4 structures were secured to the sea bed using 4 tubular piles each.**

**1. Seven Seas Well Head Protection System.**

**2. Seven Seas Valve Control Skid**

**3. Grove West Choke Skid.**

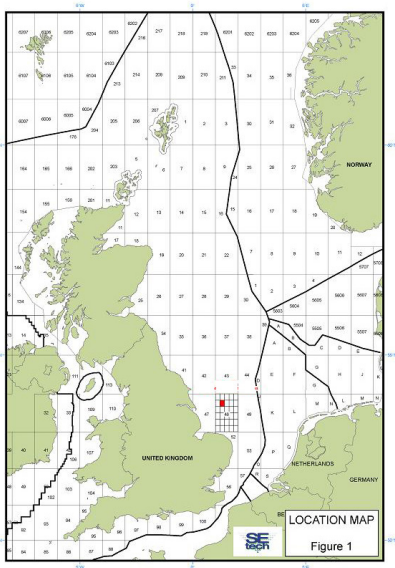
**4. Newsham Valve Control Skid.**

**These structures were to be located at various locations through out the North sea, making the need for all the Dawson Contract Piling equipment/spares and personnel to be on the Seven seas ship at all times.**

**All work was carried out on time and to requirements. Subsea 7 highlighted the performance of the team with the following statements;**

**Subcontractors - "Dawson Contract Piling performed outstandingly well in the delivery and preparation of their piling spead".**

**Equipment - " Dawson Contract Piling, piling hammer and staff performed exceptionally well and should be remembered for future construction jobs of this nature".**




## Technical Specifications

**Each structure was secured with four tubular piles of Ø30" and total lengths varying from approximately 12-18m. Required penetrations varied from approximately 4-8m less than the total pile length.**

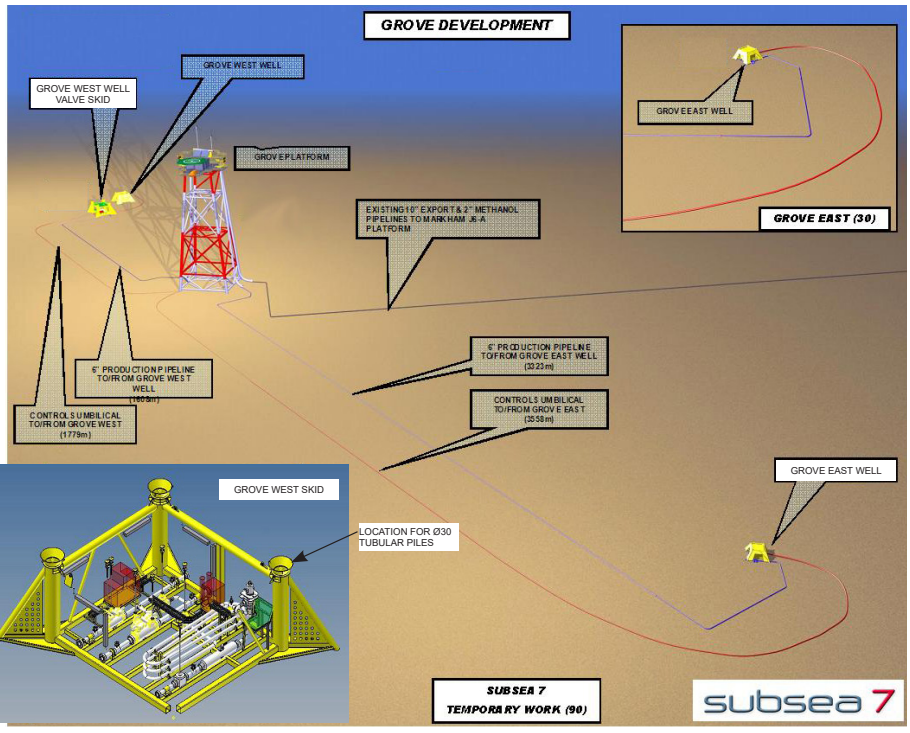
**The first structure was piled commencing 1st April 09 and the final structure piled 23rd April 09.**

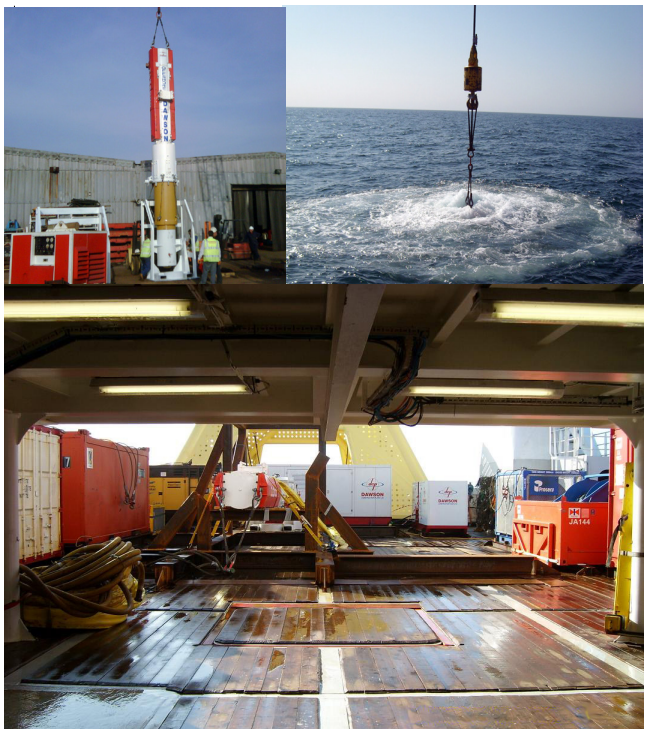
**The primary hammer, a Dawson HPH9000, successfully drove all sixteen piles to the required penetration in upto 40 metres of water. The hammer drivability studies carried out prior to commencement of piling works predicted that the HPH9000 would be working at its upper limits for all structures, apart from the Grove West Choke Skid, to drive the piles to the required penetration, and that prediction held true.**

**A new HPH15000 was also held on the shore line should the piles need a greater driving force, but wasn't required.**

**Summary of Soil Conditions undrained shear strength value of excess of 200kPa**

| Layer | Depth Range of Soil units (m BML) | | Soil Description |
|---|---|---|---|
| | Top | Base | |
| 1 | 0.0 | 0.5 | Fine SAND with organic matter and traces of micra and shell fragments with a putrid odour |
| 2 | 0.5 | 2.5 | Dense to very dense SAND |
| 3a | 2.5 | 10.1 | Stiff to very stiff CLAY with fine gravel |
| 3b | 10.1 | 10.9 | Medium dense SAND |
| 3c | 10.9 | 16.0 | Stiff to very stiff CLAY with fine gravel |
| 4 | 16.0 | 24.4 | Dense to very dense fine SAND with shell fragments |



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