



# HMNB Clyde SSN Berthing Facilities

**Project Name:**  
HMNB Clyde SSN Berthing Facilities

**Location:**  
HMNB Clyde, Faslane

**Client Name:**  
AMEC Capital Projects

**Date:**  
December 2007 – September 2008

## Project Summary

Briggs Marine Contractors was commissioned to construct an open piled viaduct comprising of 6 x 28m spans of precast concrete beams with insitu concrete deck and parapet. A reinforced concrete bankseat at shoreward end was supported on Universal Bearing Piles and terminates on an insitu concrete dolphin supported on 4 x 2000mm diameter piles at the seaward end.

Intermediate spans were supported on insitu concrete crossheads constructed on 1200mm diameter piles and arranged in groups of three. Piling was then carried out using a spudleg barge fitted with a Manitowoc 4100 ringer crane.

## Our Work

On the seaward crossheads, piling gates were mounted directly to the crane barge and a single level of gate was used in order to prevent motion of the barge affecting the verticality of the pile. Using a vibro hammer then a 300kNm hydraulic impact hammer was used to drive them until refusal into the rock started off piles.

All piles required to be drilled out in order to install a concrete pile plug as part of the permanent works design. 2000mm dolphin piles required relief drilling in order to allow the piles to be driven to the design depth. Precast concrete beams were shipped in and lifted into position then fastened to the deck of a 60m dumb barge. Beams were then cast into reinforced concrete crossheads insitu.

- 15No. 1200mm OD x 30mm tubular steel piles up to 57m long
- 4No. 2000mm OD x 35mm tubular steel piles up to 62m long
- 66No. 26.5m long precast concrete bridge beams
- 1450m<sup>3</sup> insitu reinforced concrete, average reinforcement density 275 kg / m<sup>3</sup>

## Result

Due to the nature of the project, we had to use floating platforms that could handle piles up to 62m long and 105 Te in mass as well as 40m hard driving through boulder clay and relief drilling required. Resources:

- Crane Barge fitted Manitowoc 4100 Ringer, 350 Te capacity, 80m jib
- BSP CG-300 Impact Hammer, 300 KNm energy, ICE 1412 Vibro Hammer
- Wirth PBA 815 reverse circulation pile top drill rig
- Multicat with 120 Te marine crane, bow tug and 2No. 60m x 22m dumb barges