

The Multi Service Group.



Pont de Normandie

Le Havre, France



A cable-stay bridge to span the mouth of the Seine near Le Havre was to be constructed with two approach sections and a middle section between the two pylons with a clear span of 856 m.

The foundations for both pylons, the two abutments and the piers of the two approach bridges had to be placed on large diameter bored piles. The northern and southern pylons each required 28 piles 210 cm in diameter bored to a depth of 60 m. The two approach bridges required 124 piles 150 cm in diameter with depths of 35 to 50 m.

The upper soil layers consisted of a mixture of sand and silt down to 24 m below ground level. Below these, dense layers of quaternary gravelly sand with scattered stones and boulders were followed by secondary layers of clay containing banks of lime and marl.

The tender asked for a fluid-stabilized excavation of the piles. It was decided to use a airlift drilling method for excavation. The upper pile section of 19 m was supported by a steel casing installed with the Hochstrasser-Weise (HW) method. This method has been frequently and successfully used by Bilfinger Berger. To additionally stabilize the borehole wall underneath the casing, some gravel layers were treated with injections prior to the start of boring work.

Due to difficult soil conditions and large pile dimensions as well as high pile loads, extensive quality control tests were carried out. To check the quality of the placed concrete, all piles were provided with pipes to be able to carry out integrity measurements.

Quantities:

56 Nos. Bored Piles (Diameter 2.10 m, Depth of 60 m)

124 Nos. Bored Piles (Diameter 1.50 m, Depth up to 50 m)

Contract Value (net):

20.10 Mio EURO

Construction Period:

09/1990 – 08/1992

Client:

G.I.E.-Pont de Normandie

FRANCE

Services:

Bored Piles

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