Dalmuir Waste Water Treatment Works

Driving of precast piles for an extension at a waste water treatment facility.

AARSLEFF

Aarsleff completed the installation of more than 300 precast concrete piles to create the foundations for an extension to a waste water treatment facility for Saur Services Glasgow at Clydebank. The project for MWH, the global wet infrastructure engineering consultancy on behalf of Capita Symonds and Saur, the operators of the Scottish waste water treatment works, was completed exactly on schedule.

"I was very impressed with the site crew," reported Stefan Erbes, site manager for MWH. "We had prepared the site which has a lot of made up ground, in line with the platform layout and specification. However it was found that the operating space was limited but the Aarsleff crew worked around this problem and did not lose any time."

The Dalmuir site treats 378,000m³ of waste water daily and requires increased sludge treatment capacity. The new sludge management building holds increased centrifuge capacity to increase water removal and also to improve the quality of the waste water discharged under license into the River Clyde. The new operation will be ready for commissioning in Spring 2015.

The piling design was developed by Capita Symonds in association with MWH and Aarsleff's own in-house technical team. The 335 precast concrete piles were driven into position by a Junttan PM20 piling rig with a six tonne accelerated hammer from Aarsleff's own comprehensive fleet. The project took six weeks including the associated dynamic testing. 166 piles of 350mm x 350mm achieved loads of 1150KN-1250KN and were driven between 14m-21metres as were the 155 piles of 300mm x 300mm which achieved loads of 700KN-800KN. Fourteen piles 250mm x 250mm were driven between 13m-20metres to achieve loads between 175KN and 600Kn.

Dan Broadley of Aarsleff confirmed that the piling project ran smoothly. "Although the location is quite remote, access was not a problem for the rig and the pile deliveries. There were deep excavations for the base storage facility so we had to carefully manage the rig movements and the piling action. It all ran perfectly."

The Centrum Pile System of precast reinforced concrete piles installed by Aarsleff are manufactured by subsidiary company Centrum Pile Ltd at the state-of-the-art facility at Newark, Nottinghamshire. With headquarters in Denmark, the UK facility is one of four including Sweden and Poland, which give a production capacity of 3.2 million metres of piles annually.

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Casting is a fully automatic process using bespoke machines designed by Centrum specifically for pile production with selfcompacting concrete which does not require vibration. Detailed mix and product data records are maintained for full product traceability, which can be seen on each pile's barcode reference.

Piles are manufactured in sizes from 200 x 200mm up to 450 x450mm in lengths from 4m-15metres with the high-grade steel reinforcement being incorporated during fabrication.

Scope of Works
335 No. 250mm, 300mm & 350mm Precast Concrete Piles

Client
Saur Services Glasgow and Capita Symonds

Contractor
MWH

Equipment
Junttan PM20

Construction period
January 2014

Aarsleff Ground Engineering Ltd, is the UK trading arm of Danish contracting giant Per Aarsleff A/S, and is one of the UK's leading piling and geotechnical design and installation specialist contractors; actively promoting early consultation to ensure each scheme can be Value Engineered to give clients the best service, quality design, safety and value. Aarsleff's strategy and philosophy of investment into the future has resulted in its wholly owned subsidiary Centrum Pile Ltd having the most advanced precast pile production facilities in the UK, producing segmentally jointed precast concrete piles to BS En12794 to Class 1A.

Contact
Aarsleff Ground Engineering
info@aarsleff.co.uk
Tel 01636 611140