

REnescience Bio Plant

Northwich

Keller provided a cost-effective design for the world's first REnescience waste to power plant, while achieving safe bearing pressures to suit structures of different sizes.



The project

Ørsted (formerly Dong Energy) has built the world's first bio plant of its kind using their REnescience technology to treat household waste through the use of enzymes. It will handle 120,000 tonnes of unsorted household waste from 110,000 homes and will produce some 5MW of renewable electricity.

The challenge

Designing a solution that catered for the varying site conditions and treatment depth and completing within the 19-week works timetable.

The solution

Keller offered a top feed Vibro replacement support system to achieve safe bearing pressures ranging from 50kN/m² up to 150kN/m² for the main building, 6 no anerobic tanks and other site structures. Pre-boring was adopted to assist penetration of the vibrating poker to the natural weaker strata that required stabilisation.

The design depths varied between 2.5m and 6.0m to suit the varying site conditions, stopping in the competent natural strata of stiff sandy gravelly clay. Keller completed the 5,900 No stone columns in over 3 No phased visits, using 2 No Minicat Vibro rigs and 2 No pre-boring rigs.

Project facts

Owner(s)

Ørsted (formerly Dong Energy)

Keller business unit(s)

Keller UK

Main contractor(s)

Cobalt Energy

Solutions

Bearing capacity / settlement control

Markets

Power

Techniques

Vibro stone columns

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