

KESTREL PARK

Avonmouth, Bristol

Keller was appointed by Barnwood Ltd to support the development of six new warehouses at Avonmouth's Kestrel Park.

The project

Kestrel Park is a national and international logistics hub in Bristol. New warehousing covering more than 135,000 sq ft was being constructed on a previously undeveloped site with challenging ground conditions. Keller was tasked with providing a solution to ensure that strict performance criteria to limit settlement were met

The challenge

The site was underlain by approximately 11.5m of low-strength tidal flat deposits, with intermittent peat lenses, resulting in very poor load-bearing capacity and high compressibility. A key challenge was to improve these conditions to safely support slab loadings of 50kN/m² and column loads of up to around 1,700kN, while ensuring total settlement was limited to less than 25mm.

Project information

Application

Bearing Capacity/
Settlement Control

Technique

Rigid inclusions

Sector

Commercial

Client

Chancerygate Ltd

Main contractor

Barnwood Ltd

Contract value

£500,000

Keller companies

Keller UK



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The solution

Keller successfully delivered a rigid inclusions solution to facilitate the adoption of pad footings and a ground bearing slab. The columns were installed using fully displacement tools which generated minimal spoil arisings as shown, right. The groundworker was able to excavate the columns whilst they were fresh, which included a simple scoop at each slab column position, so as to maintain the load distribution layer. All of the work was successfully completed ahead of schedule inside eight rig weeks, using two rigs.

Quote

Rob Herring, Keller's Estimating Manager, Ground Improvement, said: "This was a technically demanding site due to the depth and variability of the weak soils but our rigid inclusion design provided a solution that met the performance requirements."

Key achievements

Efficient work

Allowed a simpler foundation approach using pad footings and a ground-bearing slab.

Clean and tidy

Delivered displacement column installation with very little spoil produced.

Low impact

Minimised ground disturbance with a low-vibration, in-situ approach.

Delivered early

Completed ahead of schedule.

