

Burland Grove, Kendal

Installing driven precast piles, steel tube piles and ground beams for housing development.



Burland Grove, Kendal is a 1-acre, residential development comprising 14 housing units. The site is being developed by Esh Developments, and when complete will provide much needed affordable housing for the area.

Worth approximately £247,000 in total Aarsleff Ground Engineering was awarded the foundation works by main contractor Esh Construction, works commenced in May 2015 and were completed in August 2015 over a 10 week period.

Specifically, Aarsleff was initially contracted to install some 281no, 200-mm square piles, together with 550-metres of 450-mm square ground beams and 140no precast caps. The 14 units required piling and ground beam foundations, due to peat present in the ground, the front and rear of the properties also required piling support. Ground beams were also needed to support the hard landscaping to the rear of their gardens. Front driveways and gardens were engineered fill using Tensar Geogrid in layers over the precast pile caps on piles.

The project was not without its challenges; specifically, the nature of the ground, following pre-works' probing the initial precast concrete installation had to be converted to steel tubes after consultation with the client. This change to specification impacted on the ground beam and pile cap installation, with several design changes needed at the connection between the pile, ground beams, pile caps and in situ slabs. The slabs were initially designed as precast but were changed to in situ to overcome site constraints.

Communication between the client and Aarsleff was essential to ensure readiness for planned road closures necessary where the crane had to partially rig up on the road and the pile caps after the Tensar had been installed. This method worked perfectly and had been evolved over the design phase with Aarsleff's experience and technical abilities used to add value to the project. The use of Aarsleff's low pressure bearing rig Junttan PM16 (in short leader) also helped facilitate the install of the piling element of the works.

The project, which was initially designed by Aarsleff in conjunction with Esh and Tensar, is maintenance-free and not subject to ground settlement from the peat layers. Aarsleff's innovative Ground Beam system was chosen as a cost-effective and quick solution, as it could be installed as an integrated element of the foundation works.

This residential install, on behalf of Esh, is an excellent showcase for Aarsleff's Ground Beam system, as well as its ability to work closely with the client and develop solutions that add-value to the project.



Scope of Works

264 No. 178 diameter steel tube
 17 No. precast concrete piles.
 520lin/m of ground beams.
 136 No. 900diameter pile caps,
 12 No. 500x500x400 pile caps (for our of position piles). Pile length varied between 7m and 14.3m

Client

Esh Developments

Equipment

Junttan PM16 in short leader
 100T AT Liebherr Crane
 Site excavator to place the caps

Construction period

May 2015

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@arsleff.co.uk
 Tel 01636 611140