

Mine Stabilisation, Shiremoor

Drilling holes and injecting grout to stabilise mines.



AARSLEFF

Aarsleff Ground Engineering were awarded the mine stabilisation contract by main contractor Rainton Construction, part of the MGL Group, as part of the development of a new retail park in Shiremoor, Northumberland.

Shiremoor is a large village located off the A19 dual carriageway and just topside of the construction of Highway England's multi-million pound three-tier grade separates junction as part of its A19/A1058 Coast Road Improvement Silvertown Link Interchange scheme. The North Tyneside village was built around the coal industry, however as the coal industry in the area declined, Shiremoor became a commuter area and more recently services as a commercial centre.

In 2015, plans were first revealed for a multimillion pound retail development which would create more than 180 jobs. The proposed development would include a discount food store and numerous retail outlets - two of which are an Aldi supermarket and a drive-thru Costa Coffee.

Aarsleff's contract forms the enabling works for this and includes the drilling and grouting of shallow mine workings to the building footprints plus a perimeter extension to negate future movement - however, and possibly the most interesting part of their remit also involves the capping of a single - albeit unmapped mine shaft.

Covering an area of 5615m², Aarsleff has utilised three rotary percussive drill rigs for probe drilling and artificial consolidation of the site in the guise of a JCB JS 130 excavator with a drill mast attached and two Boart Longyear DB 102's. Specifically, this will include drilling 530 No holes to probe the High Main Coal.

"There's a coal seam down at around 32m", explained Construction Manager, Colin Tannahill. "We have one crew undertaking the probing for the shafts, whilst the other two crews are undertaking the drilling." Aarsleff will mix and inject an estimated 2700T of site batched grout using PFA/cement to consolidate the suspected abandoned mine workings. For treatment of the old mineshaft, Aarsleff are drilling a temporary liner to its base and inject grout under pressure in ascending stages to fully consolidate.

Further test bores will be constructed, and pressure grouted to prove the construction. Finally, Aarsleff will construct the standard accepted Coal Authority mineshaft cap with an assumed shaft cap of maximum 6.40m diameter.



Scope of Works

Drilling 530 No. holes
2700T batched grout
Mineshaft cap

Contractor

Rainton Construction, part
of the MGL Group

Equipment

JCB JS 130 Excavator with
Drill Mast
2No Boart Longyear DB
102's

Construction period

16th October - 24th
November 2017

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