



Summer Newsletter

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Didcot, Oxford – Vibro Stone Columns

GeMech have recently completed a large package of ground improvement works through installation of vibro stone columns on behalf of Aarsleff Ground Engineering.

Over a period of 9no. weeks, GeMech installed 7803no. 450mm nominal diameter stone columns. To complete the works, up to 3no. vibro rigs were used alongside 2no. pre-augering rigs supplied and operated by Aarsleff.

Ground conditions comprised engineered Made Ground, overlaying the Summertown-Radley Sand and Gravel member underlain by stiff Gault Clay. Column depth varied across site, with depths ranging from 3.0m – 5.50m.

Columns were designed beneath the building slab, for a maximum bearing capacity of 50kPa for 25mm settlement and 1/750 differential settlement requirements. GeMech worked alongside Simtec Materials Testing in order to demonstrate successful column installation and performance.

The operations team delivered fantastic quality and production in line with contract programme. Well done to all involved in the project!



<https://gemech.co.uk/blog/advantages-and-disadvantages-of-vibro-stone-columns/>

Kelvedon Street, Newport – Steel Cased Bottom Driven

GeMech have recently commenced a new project for repeat client MVR Solutions in Newport, South Wales.

Using our Vermeer HL-2500 drop hammer rigs, 116nr. 220mm diameter steel cased bottom driven piles are being installed to depths up to 12.0m below pile platform level. The design principle consists of casings being driven through soft Alluvial Clays and achieving a dynamic set within the Mercia Mudstone at depth.

This development will provide new affordable housing for this historic site, with piling anticipated to be completed in just under 4 weeks.

With no soil arisings, steel cased bottom driven piles provide an efficient foundation solution where softer soils or contaminated soils are present. With low levels of noise and vibration, they are also well suited to projects where disruption to existing residential properties or occupied buildings are of concern. Thanks to the light weight and compact footprint of the Vermeer rigs in the GeMech fleet, pile mat design thicknesses can be much less onerous than if larger CFA or top driven precast machines were used.



For more information on the advantages of steel cased bottom driven piling, visit our website:-
<https://gemech.co.uk/solutions/driven-piling/>

Swansea Skyline – CFA Bearing Piles & Rotary Coring



Our Comacchio CH450 has been on site for the new Swansea Skyline development, where a new gondola and sky swing will be being installed on Kilvey Hill, Swansea. Consisting of the lower gondola station and three towers to accommodate the new cables for the gondola, the CH450 has been installing a mix of 350mm, 600mm and 750mm diameter piles to depths of 23.5m below pile mat level.

Whilst drilling piles for the main gondola station, multiple historic obstructions were encountered meaning pile positions have required coring in order to penetrate through the obstructions. Using the Soilmec SR-45 to carry out these works, GeMech have been able to provide a workable solution for the client in tricky ground conditions.

The Soilmec SR-45 will shortly be progressing further up the hill to install rotary bored piles for the foundations to a new sky swing, which will overlook

Swansea from the top of Kilvey Hill and down to Mumbles.

We are looking forward to bringing you more updates on this landmark development.



<https://gemech.co.uk/solutions/augered-piling/>

Coles Quarry – Percussively Drilled ODEX Bearing Piles

GeMech have been installed percussively drilled (ODEX) bearing piles to facilitate the development of several terraced units within a new industrial estate at the former Coles Quarry site in Backwell for repeat client Lancer Scott.

Rotary percussive ODEX techniques were selected owing to the complex ground conditions present, consisting of very loose to dense granular Made Ground underlain by very dense Gravel and Cobbles and medium strong to very strong Conglomerate of the Mercia Mudstone Marginal Facies. Our Hutte 204 was selected to bore through these dense soils. As Made Ground was encountered to varied depths between 2.0m - 7.0m below piling commencement level, with the depth to bedrock also varying requiring careful review of rock socket design depths given the variances across site. By installing temporary casings through the Made Ground and socketing into the competent bedrock, GeMech provided a suitable solution on a site with difficult ground conditions, allowing the client to progress with the development.



ODEX techniques are a great way to deal with tricky ground conditions containing obstructions or very competent bedrock material. If you want to know more about our ODEX pile solution, click the link below;

<https://gemech.co.uk/solutions/odex-piling/>

We are still running our CPD sessions which are available to book via email at info@gemechltd.co.uk. CPD presentations are a great way to improve understanding of the different deep foundation techniques and their applications. Get in touch with one of our engineering team today.