

CASE STUDY

NORTHERN ACCESS ROAD London



Soil Mixing Stabilises Northern Access Road In London

Deep Soil Mixing Ltd was contracted by Galldris Group Ltd to undertake ground improvement works at the site of the Northern Access Works in London for client North London Heat and Power. The soil mixing solution was used for ground improvement for the new access road that formed part of a project to construct an Energy Recovery Facility (ERF).

The Solution

Initial reports had highlighted the ground was weak down to depths of between 2.7m and 3.6m and there were contaminants including asbestos fibres within the existing ground. There were additional challenges posed by the site's location – it was bound on the west by the Pymmes Brook and to the east by commercial and industrial estates. There were additional problems with contamination and asbestos in the made ground under the existing road and below that Peat and soft Alluvium. This meant if the traditional method of excavate and cart away was used excavation would need to be carried out below the water table level, and there was potential for release of contaminants as well as vibration effects on the neighbouring properties. Issues both Galldris and North London Heat and Power wanted to avoid.

Soil mixing was used to **minimise** settlement over the length of the new road and at the same time locking in contaminants and asbestos fibres into the stabilised ground. This solution also offered minimal vibration during construction to minimise the potential impact on the nearby buildings.

It also meant none of the ground had to be excavated and removed from site thus reducing the carbon footprint of the project. Soil mixing was used to improve the poor ground, increasing the load bearing quality and meeting the necessary specification for HA loading for road construction ahead of the future deliveries to the ERF.

DEEP SOIL MIXING LTD

NORTHERN ACCESS ROAD, LONDON

The Project

Preliminary trials were carried out to ensure the deep soil mixing design could be conducted on-site. Using laboratory mixing tests together with a field trial assessment, the right soil mix was established.

Stabilisation occurred in the alluvium and made ground layers, with the stabilising elements installed along the length of the road. A mass block of soil was also stabilised against a sheet pile wall to reduce the forces in the active zone.

Stabilisation was designed to reduce in-service long-term settlements to a maximum of 25mm underneath the road.

The project was completed successfully, and soil mixing proved a good solution for this site. Given its location and contamination challenges, this solution was able to reduce settlements and improve stability to support the road construction without adversely impacting on the surrounding properties thanks to the soil being mixed in-situ with minimal vibrations and fewer heavy road vehicles required due to no soil being removed from site.

Client North London Heat and Power said: “We look to be innovative & environmentally friendly. Our Project is the most sustainable & cost-effective solution for treating north London’s non-recyclable waste, & our commitment to sustainability is as important during construction. We’re using methods, like deep soil stabilisation to save on lorry journeys. We’ve now saved over 2,500 lorry journeys being made, helping to reduce traffic & pollution.”

ADVANTAGES OF SOIL MIXING

- Reduces construction programme
- No need to excavate and cart away thus reducing carbon footprint
- Zero vibration during construction
- Wide range of soils can be treated compared to other solutions
- Increases bearing pressure, controls settlement and reduces permeability

FIND OUT MORE

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