MWP

Piling Method Statement

No.9 Nestles Avenue, Hayes UB3 4SA

OUR REF: 22973

25/05/2022

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No.9 Nestles Avenue, Hayes UB3 4SA

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
22973	22973 – Piling Method Statement	P02	25/05/2022	MR	PL	MR	

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2. Introduction and Purpose of Report

The following report outlines the proposed method of construction of the foundation piles at 9 Nestles Avenue, Hayes UB3 4SA.

The purpose of this report is to provide the information required by Condition 16 of Planning Permission referenced as 51175/APP/2020/2543 issued by London Borough of Hillingdon.

The extent of piling proposed is indicated on Drawing No. 22973-SK01 which is included in Appendix A of this report.

3. THE SITE

The site is located in the London Borough of Hillingdon, approximately 250 m to the southeast of Hayes and Harlington railway station and approximately 650 m to the west of the junction of the Grand Union Canal and the River Crane. It fronts onto nestle Avenue to the south, this report sets out the local context in which the building sits, explains the design principles and details the building's design strategy. The aims of the proposal are to redevelop the site at 9 Nestles Avenue which sits in the centre of an designated area of opportunity for development.

The scheme involves demolition of the existing building and redevelopment to provide a building of 11 storeys comprising residential accommodation, associated landscaping, access, car parking and cycle parking.

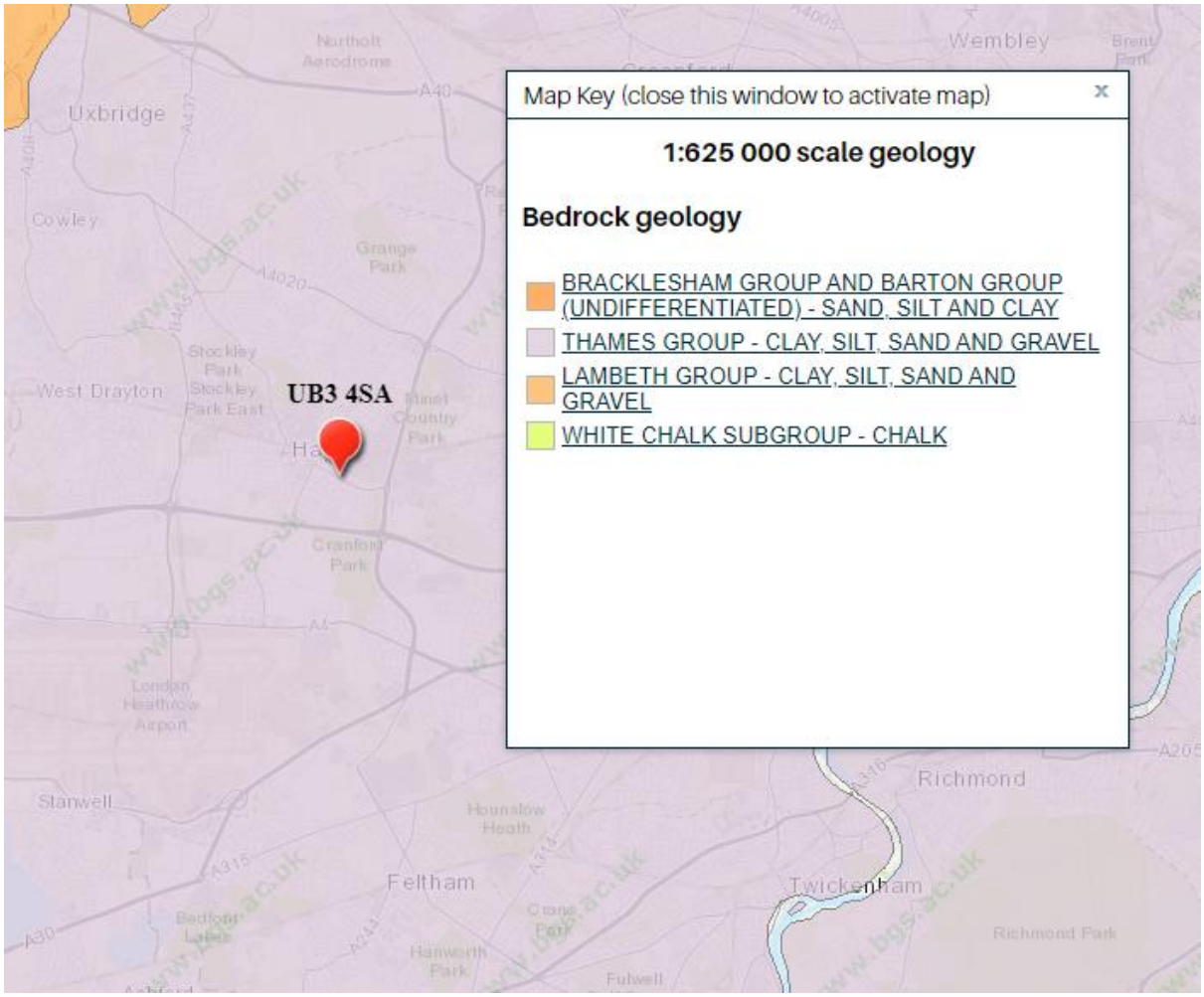
The adjoining property is currently described as Milk Yard and it is a new development with a similar volume to No.9.It is reasonable to assume a piled foundation on this new development.

On the other side of No.9 there's a two-storey commercial unit, assumed foundations to be mass concrete foundations with located pads.

4. Figure 1 Site Location Plan

5. SITE GEOLOGY and GROUND INVESTIGATION.

Based on the Surface Geology maps produced by the British Geological Survey, we have determined that the site is underlain by London Clay, silt sand and gravel as indicated on the extract from the Geological Survey Map included in Figure 2.



6. Figure 2 – General Geology of the Area extract from BGS

A site-specific ground investigation was carried out by GEA in August 2020. The work on site consisted a single cable percussion borehole was advanced to a depth of 30.00 m and five opendrive percussive sampler boreholes were advanced to a maximum depth of 3.00 m of the sinking of three boreholes to a depth of 15.0m each.

The Ground Investigation Report recorded the soil conditions below in Table 1. As suspected the site contains some Made Ground, below which is found Lynch Hill Gravel. Below the Lynch Hill Gravel is the London Clay. The above profile matches the profile suggested by the Geological Survey Map for the site.

Stratum	Depths m
	Ultimate Skin Friction
Made Ground	GL to 2.0
Lynch Hill Gravel	2.0 to 6.0
London Clay	6.0 to 30.0
	Ultimate End Bearing
London Clay	10.0 to 30.0

7. Table 1 Local Ground Conditions from GEA Report.

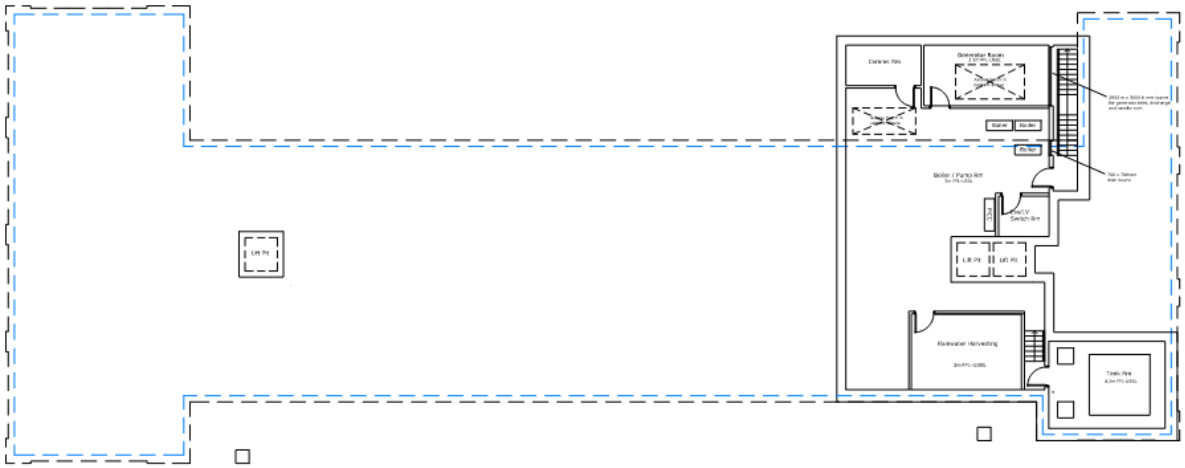
Water was encountered at depth during the investigation and was found to rise to the approximate level of the proposed basement over time.

Groundwater was encountered in Borehole No 1 at a depth of 4.80 m during drilling. Combined gas and groundwater monitoring standpipes have been installed into Borehole Nos 1, 2, 3 and 5 and the installation details can be found on the appended logs.

Three return monitoring visits have been carried out, although on each occasion it was not possible to access the building and so only Borehole No 1 could be monitored. Groundwater was measured at a depth of 2.82 m on 30 August, at 2.87 m on 11 October 2018, and at 2.71 m on 15 November 2018.

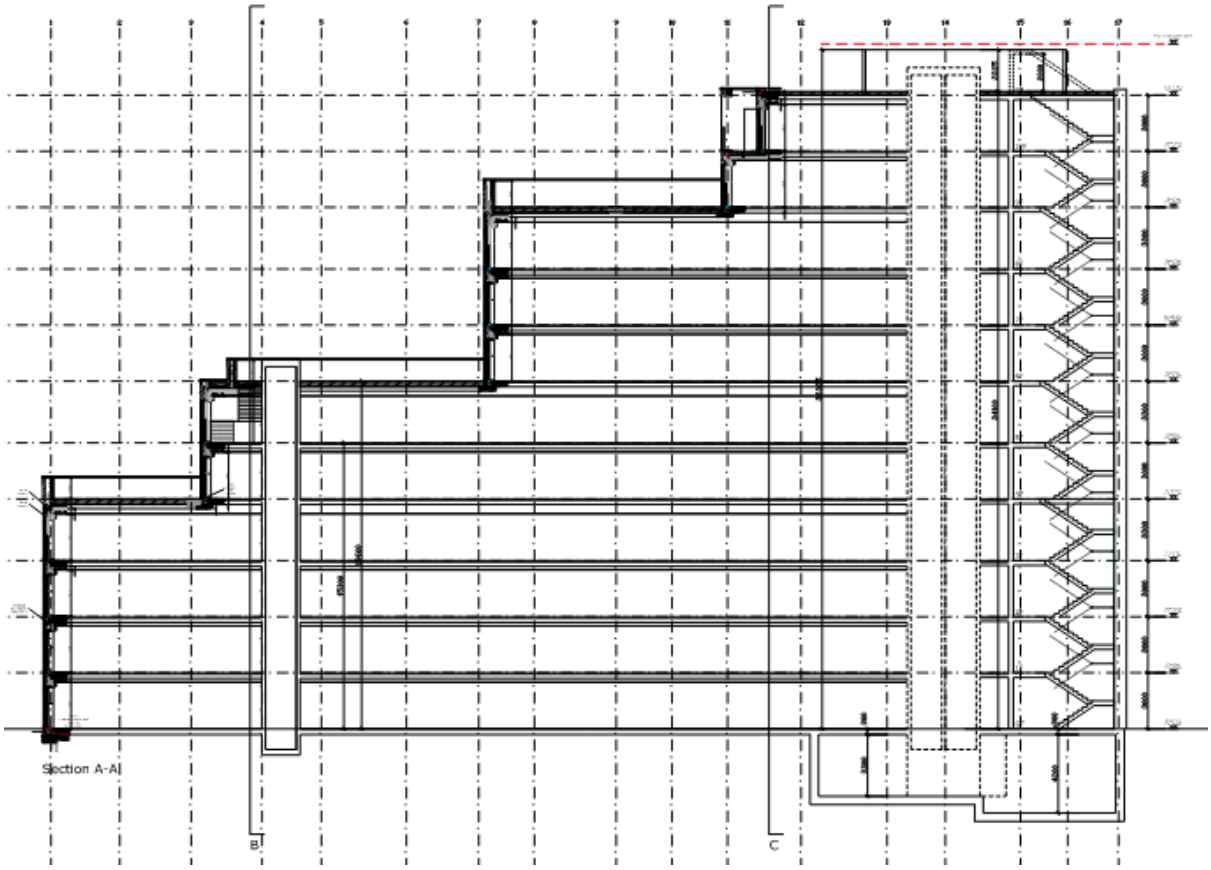
8. Building foot print

It is proposed to construct a semi-basement to the proposed building; this basement will be located at the rear side of the building The basement outline is indicated in Figure 3 below.



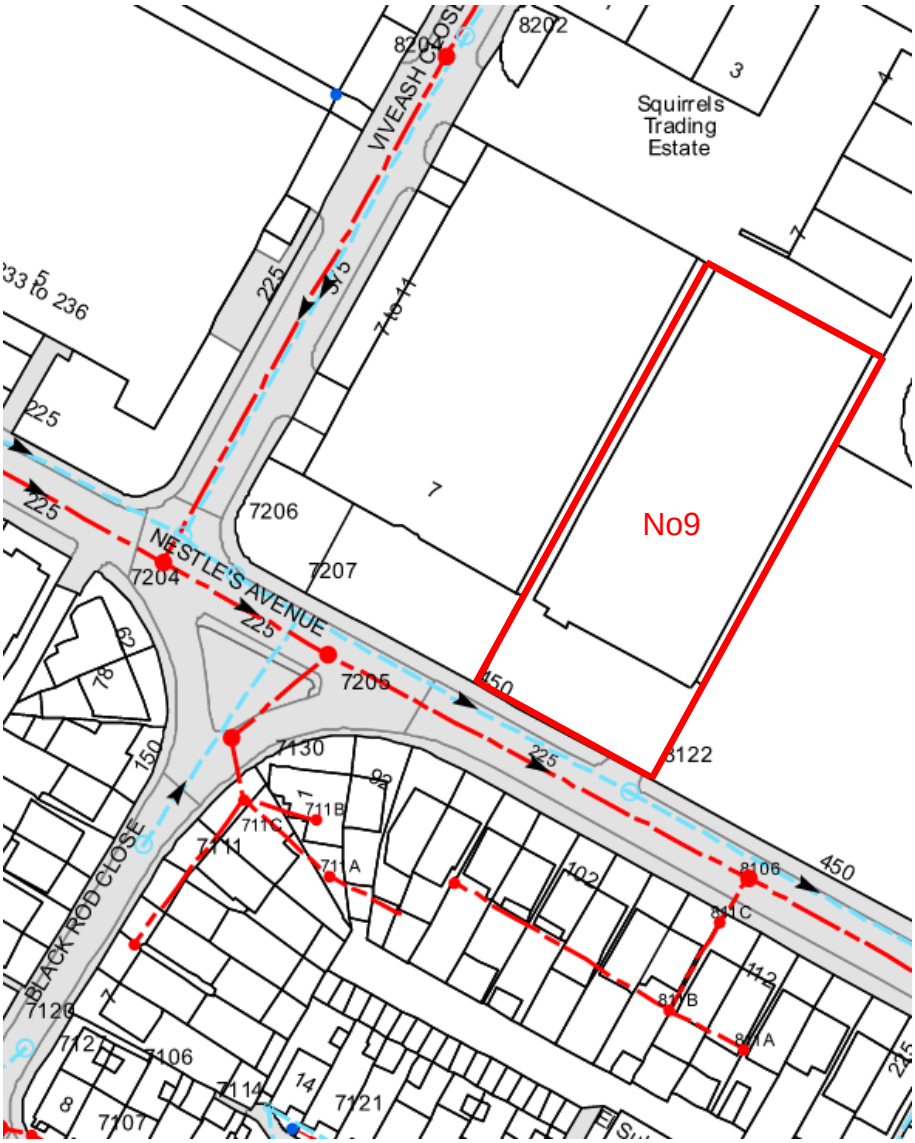
9. Figure 3 Extent of Basement

The basement depth including the basement floor construction will be approximately 4.50 m below the existing ground level. The basement will be constructed using a secant piles walls and RC slab supported on piles. The remaining are of the building will be supported on a traditional piled foundation solution with pilecaps and suspended slabs.



10. LOCATION OF SEWERS IN RELATION TO BASEMENT.

A copy of the Thames Water Asset plan for the area of the site was obtained to determine the location of the sewers in relation to the proposed basement, a copy of this map is included in Figure 5 below. This plan indicated that there are no sewers within the proposed basement area. A copy of the proposed drains to serve the development are include in Figure 6, while these traverse the proposed basement these will not be constructed until the piles have been constructed, therefore the proposed piling does not present a risk to these drains.



11. CONDITION 16 REQUIREMENTS.

The requirements of condition state as follows:-
No piling shall take place until a piling method statement (detailing the depth and type of piling to be undertaken and the methodology by which such piling will be carried out, including measures to prevent and minimise the potential for damage to subsurface sewerage infrastructure, and the programme for the works) has been submitted to and approved in writing by the local planning authority in consultation with Thames Water. Any piling must be undertaken in accordance with the terms of the approved piling method statement.
REASON
The proposed works will be in close proximity to underground sewerage utility infrastructure. Piling has the potential to significantly impact / cause failure of local underground sewerage utility infrastructure

The proposed piles are intended as vertical compression or tension piles to support the foundation under the building. Based on the loads supplied by the Structural Engineer it is anticipated to use piles will a full lenght of 25.0m below the level of the proposed basement and will utilise 450mm to 600mm diameter flight augured (CFA) concrete piles. Installation of the piles will take place from a piling mat installed at the proposed raft foundation level. It is anticipated that the piling rig will be similar to B470 XP-2 - CFA tracked rig powered by a remote pneumatic power pack similar to the plant indicated in Figure 7 below.

12. Figure 7 Proposed Piling Rig

This rig will be transported to site on a rigid bodied truck and unloaded using a Hiab type truck mounted crane.
Based on the services searches carried out to date it is not anticipated that there are any sewage infrastructure within the proposed zone of piling however prior to piling all piling locations will be probed using a CAT Scanner and a hand excavated trial pit sunk to a depth of 1.0m to ensure there are no abandoned drains in the piling zone. The piling method does not result in any vibration which would cause damage to underground services within the piling zone.
Piling will be carried out by augering the required borehole and filling with a high slump self-compacting concrete using a concrete pump. Reinforcement cages which are estimated to be 6.0m long will be inserted into the borehole by pushing them into the concrete using a 14-tonne excavator.

13. CONCLUSIONS.

The proposed piling at 9 Nestles Avenue is to be carried out at proposed basement and ground floor level, the location of the building should be free of any services, notwithstanding this all-pile locations are to be CAT probed to ensure that no services exist at the borehole locations. In terms of the Thames Water sewerage infrastructure the asset records indicate that the sewers run parallel to the front of the site and there are no sewers within the site area and the method outlined above will prevent and minimise the potential for damage to the subsurface sewerage infrastructure. We therefore consider that this report provides the necessary information required by condition 16 and request that this condition be discharged.

Prepared By.

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14. APPENDIX A

DRAWING No 22973-SK01.