

Non-technical Summary – Ground Investigation Report

CLIENT	Kapital Basements Ltd		
SITE ADDRESS	158 Iverson Road, West Hampstead, London NW6 2HH		
REPORT REFERENCE	GWPR1605		
ENGINEER	Philip Allvey/Megan James, Ground and Water Limited		
INVESTIGATION LOCATIONS	Please see Figure 1 Attached. Site works were undertaken on the 23 rd March 2016. 19mm diameter combined bio-gas and groundwater monitoring well was installed in WS1 to 5.00m bgl.		
GROUND CONDITIONS ENCOUNTERED	Summary of Strata Encountered (WS1 and WS2)		
	Strata	Depth Encountered (m bgl)	Thickness (m)
	MADE GROUND (WS1 and WS2): Concrete and sub-base (WS2)	GL	0.08 – 0.30
	MADE GROUND (WS1 and WS2): Dark brown/black/brown/orange brown sandy gravelly silty clay. Sand is fine to coarse grained. Gravel is rare to occasional, fine to coarse, sub-angular to sub-rounded flint, brick, cement and carbonaceous material.	0.08 – 0.30	0.92 – 1.50
	LONDON CLAY FORMATION: Brown/orange brown/grey silty clay with occasional orange silty pockets. Selenite crystals noted.	1.00 – 1.80	>3.20 - >4.00
INSITU-GEOTECHNICAL TESTING (DPH)	LONDON CLAY FORMATION: (encountered between 1.00 – 10.00 bgl) Very low/low to high undrained shear strength (20 – 180kPa – In accordance with (Based on Shioi-Fukui, High Plasticity Soils – 1982).		
GROUNDWATER	No groundwater was encountered during the drilling of the boreholes. A standing water level of 2.00m bgl was noted on the 15 th April 2016 within the 5.00m deep combined bio-gas and groundwater monitoring well installed in WS1.		
ROOTS	Roots were noted to a depth of 0.80m in WS1 and to a depth of 1.80m in WS2.		
ANTICIPATED VOLUME CHANGE POTENTIAL	LONDON CLAY FORMATION: High volume change potential in accordance with BRE240 and NHBC Standards Chapter 4.2. Consistency Index calculations indicated the soils of the London Clay Formation to be stiff to very stiff. Liquidity Index testing revealed the soils to be heavily overconsolidated. No root exacerbated moisture deficits were noted.		
FOUNDATION RECOMMENDATIONS	At the time of reporting, May 2016, it is understood that the proposed development will comprise the construction of a basement beneath the footprint of the structure. The basement will be formed at ~3.00 – 3.50m bgl. It is considered likely the proposed basement will be constructed with load bearing concrete retaining walls with semi-ground bearing concrete floors. Foundations constructed on the London Clay Formation at 3.00 – 3.50m bgl can be designed based on a presumed allowable bearing capacity of 90 - 110kN/m ² . This is based on a 5m long by 0.75 – 1.00m wide foundation and a maximum settlement of 25mm. The analysis has been based on the results of		

geotechnical laboratory testing and detailed settlement analysis. and referral to BS 8004:1986, *Code of Practice for Foundations*, and based on a 5m long by 0.75 – 1.00m wide foundation and a maximum settlement of 25mm.

It must be noted that a bearing capacity of less than 46N/m^2 at 3.00m bgl and less than 54kN/m^2 at 3.50m bgl may result in heave of the underlying soils. A swelling pressure of 50kpa was noted in a sample of the London Clay Formation at 3.00m bgl. The sample was disturbed and this must be taken into account in final design.

Figure 18 of the Camden Geological, Hydrogeological and Hydrological Study indicated that the Jubilee Underground Line was located close to the site. Further investigation should be undertaken. The West Hampstead Overground Line was noted ~50m south of the site.

**GROUND MOVEMENT
ASSESSMENT**

In terms of building damage assessment and with reference to Table 2.5 of C580 (after Burland et al, 1977), the 'Description of typical damage' given the calculated movements it is likely that the damage assessment will fall into Category 0, 'Negligible'.

**RETAINING WALL DESIGN
(Design Angle of Shearing
Resistance (ϕ))**

Made Ground: 15°
London Clay Formation: 20°

DEWATERING

Groundwater was not encountered during the site works. A standing water level of 2.00m bgl was recorded in the standpipe installed in WS1 during a return visit to site. This is likely to be derived from perched water within the silty layers of the London Clay Formation or the influx of surface water into the borehole.

CONCRETE CLASSIFICATION

AC-4

This preliminary information may be subject to amendment in the final report and no liability can be accepted for any actions based on this preliminary information.