

4.5 Hydrogeology

The site hydrogeology is outlined in detail within the GEA report and can be summarised as follows:

1. The Environment Agency Maps shows the site is outside of the Environment Agencies Source Protection Zone (SPZ)
2. The hydrogeology of the site is defined as a solid geology of London Clay Formation and is classified by the Environment Agency as an unproductive strata due to its low permeability, which has a negligible significance for water supply or river base flow.

4.6 Hydrology

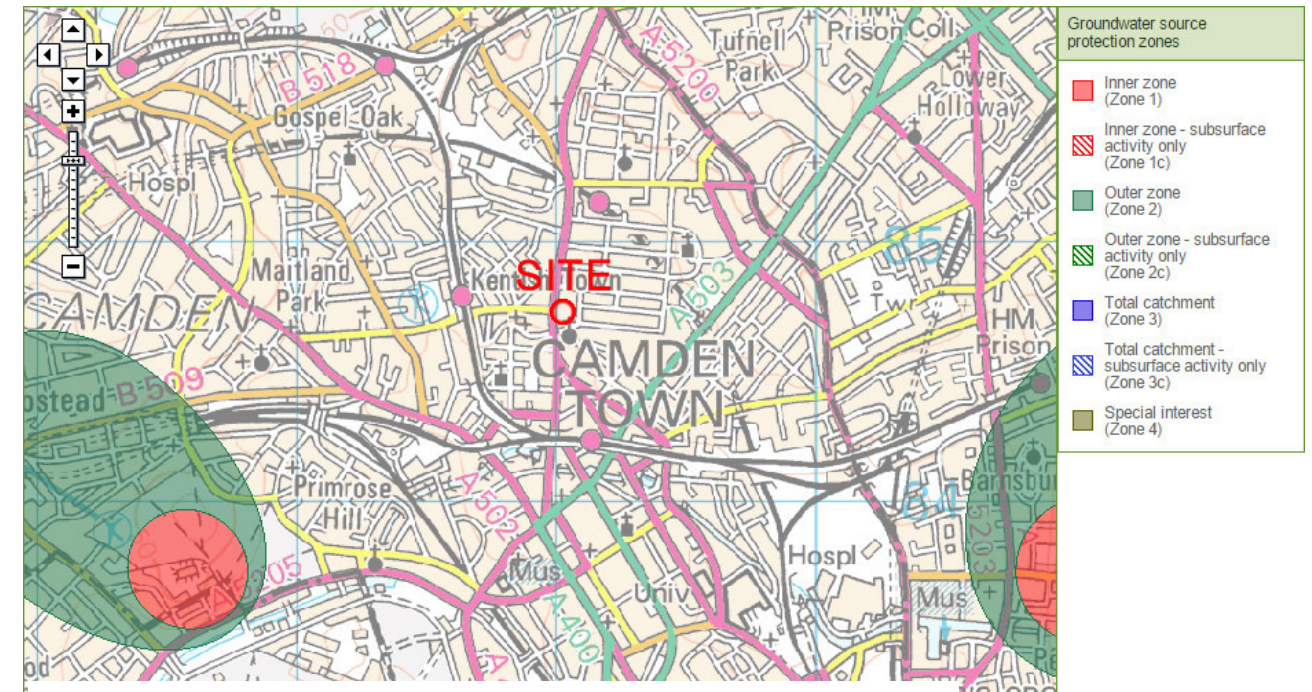
The nearest surface water feature to the site is the Grand Union Canal, which is located 521 m to the south.

Historically a tributary of the River Fleet flowed close to the line of Kentish Town Road, immediately to the west of the site in a southerly direction. Although the river is no longer an open water course, surface and near surface waters will still flow towards the former river course, which has largely been culverted.

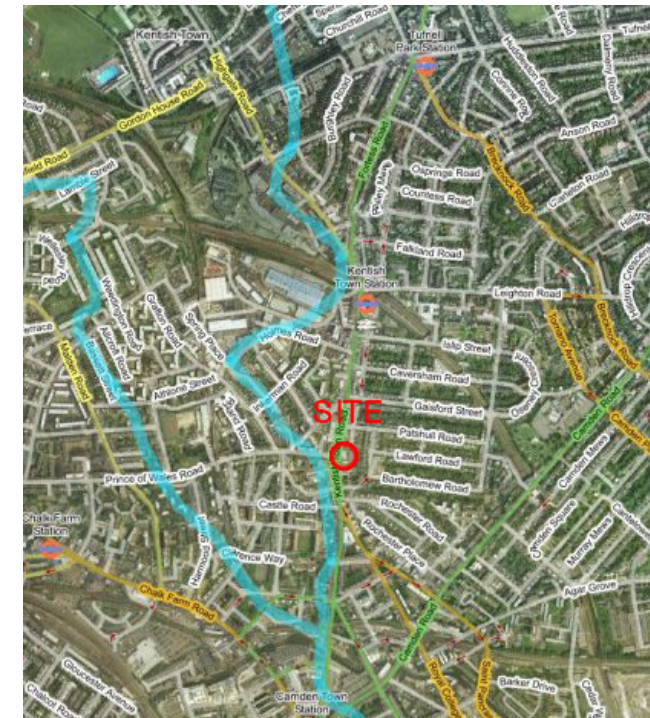
A groundwater table would not be expected to be present within the London Clay, although this Formation does include pockets and partings of silt and fine sand which can be waterbearing. Published data for the permeability of the London Clay indicates the horizontal permeability to generally range between 1×10^{-10} m/s and 1×10^{-8} m/s, with an even lower vertical permeability.

The site is entirely covered by the existing building and hardstanding and therefore infiltration of rain water into the ground beneath the site is extremely limited. The majority of surface runoff is likely to drain into combined sewers in the road.

The Environment Agency maps indicate that the site is not located in an area which is at risk of flooding, and as such is an appropriate development in accordance with the National Planning Policy Framework.



SPZ zones within Camden



River Fleet

5 London Underground Assets

5.1 Overview

The site is situated within the exclusions zone of the LUL underground tunnel which services the running lines between Kentish Town and Camden Town Underground stations (Northern Line). As a result, there may be restrictions placed by LUL on the development if there is a risk posed by the development on an LUL Asset.

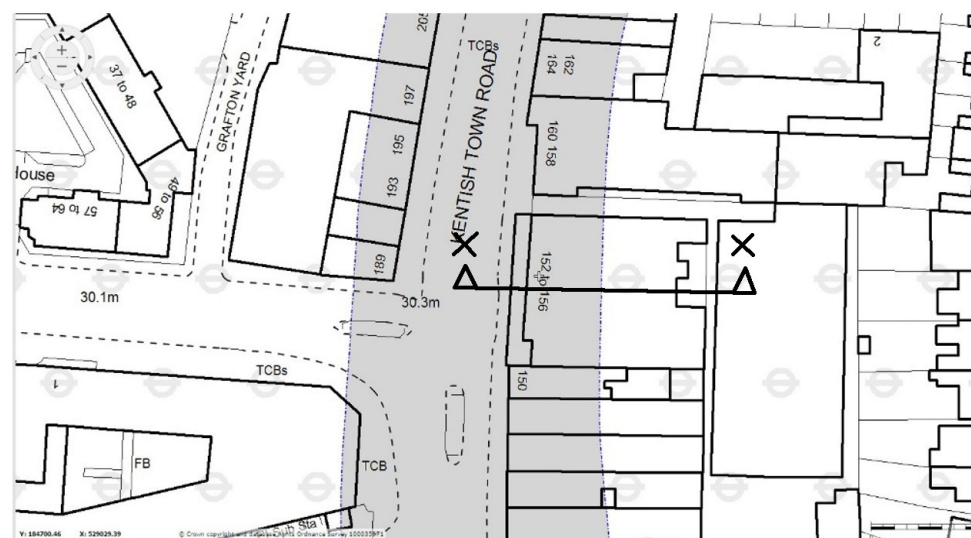
An assessment of the ground movements at depth has required an analytical model which will then be reviewed by the LUL Engineers along with the construction methodology. If the ground movements are within permissible limits set by the line-and-level survey, then the works will be approved and survey and monitoring undertaken.

5.2 Levels and Locations

The locations of the Running Tunnels have been confirmed by LUL at approximately 20.1m Below Ground Level (BGL) to the top of the tunnel crown. There is a clearance distance of approximately 4m in plan which will bring the tunnels within the zone of influence of the new basement structure.

The results of the analysis show that the net pressure changes due to the excavation is likely to be small at the location of the Running Tunnels, however the tunnel survey will be required to confirm the acceptable limits.

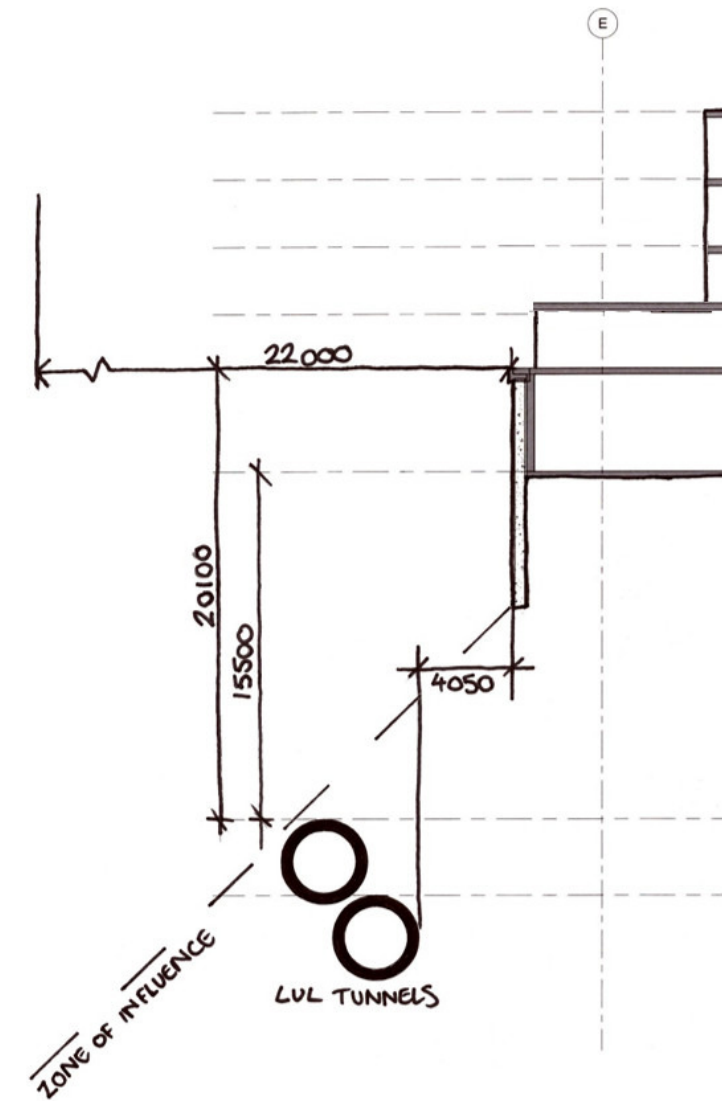
The location of the tunnels in plan have been provided by LUL and can be seen on the following page.



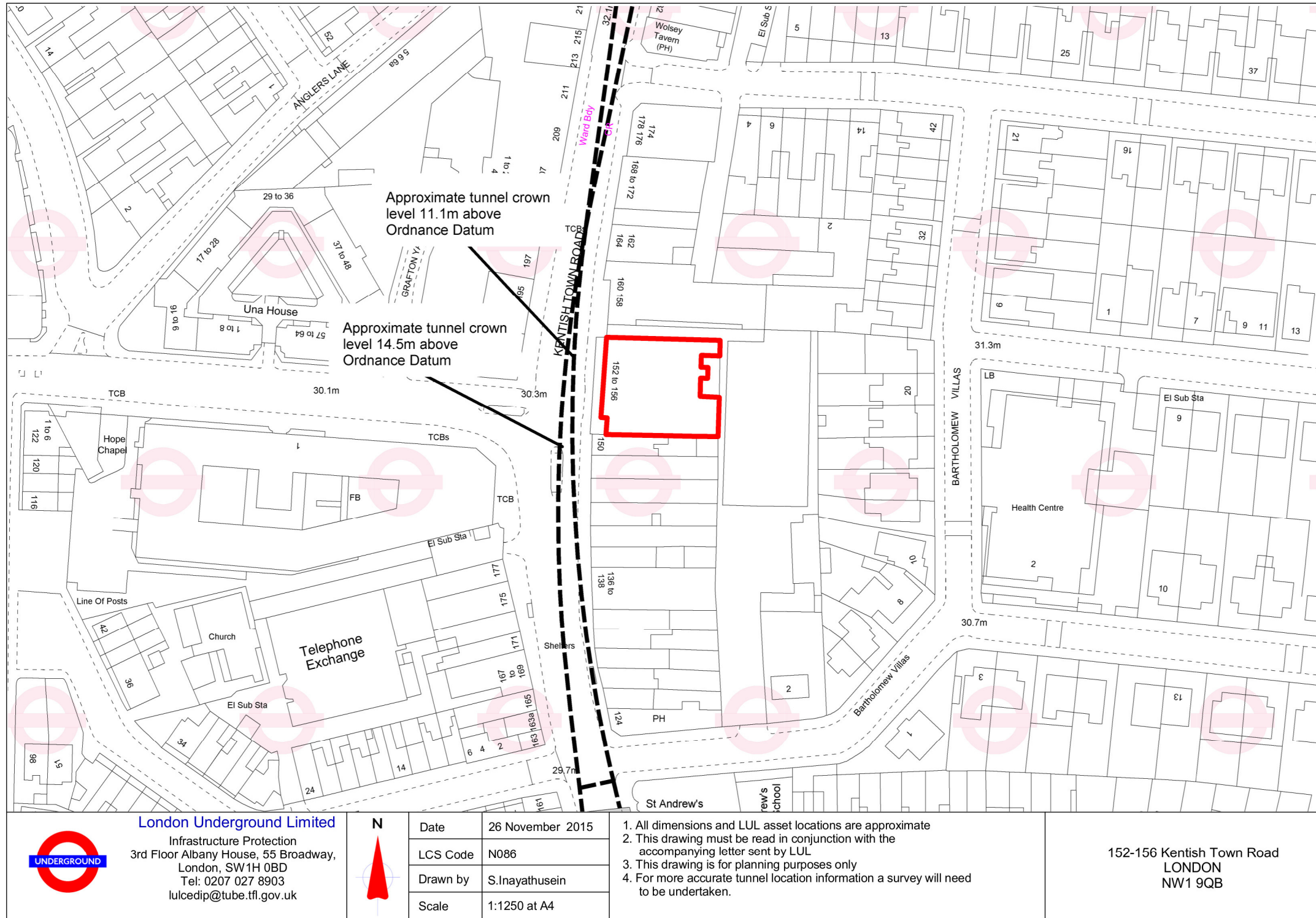
LUL Exclusion Zone Map



5.3 Survey and Analysis

There are two studies which are required to confirm the acceptability of the basement works, firstly the Line and Level survey of the track itself will establish the permissible movement of the track, and secondly the Ground Movement Analysis has established the predicted movement of the tunnel. If these movements are within the tolerances of the track the development will be approved by LUL and the works can begin with the necessary monitoring. Early advice from the LUL is that, based on previous experience, the project is likely to be permitted due to the distance of the basement from the tunnel, however this will need to be confirmed by detailed analysis, surveys, and monitoring.



Illustrated Section X-X of LUL tunnel positions relative to proposed structure. The depth of the pile wall is to be confirmed during Detail Design phase



 <p>London Underground Limited Infrastructure Protection 3rd Floor Albany House, 55 Broadway, London, SW1H 0BD Tel: 0207 027 8903 lulcedip@tube.tfl.gov.uk</p>		Date	26 November 2015	<p>1. All dimensions and LUL asset locations are approximate 2. This drawing must be read in conjunction with the accompanying letter sent by LUL 3. This drawing is for planning purposes only 4. For more accurate tunnel location information a survey will need to be undertaken.</p>	<p>152-156 Kentish Town Road LONDON NW1 9QB</p>
		LCS Code	N086		
		Drawn by	S.Inayathusein		
		Scale	1:1250 at A4		

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LUL Tunnel Map

6 Existing Structure

6.1 Material and Geometry

The existing building on the site is a reinforced concrete frame, typical of buildings of this and era. At the time of writing only limited survey works have been carried out, the observations given here are based on visual inspection only.

The existing grid is approximately 7m x 7m and is enclosed by a loadbearing wall around the perimeter. The floor slabs are unlikely to be timber as the spans would require unusually large sections. It may be assumed that these floor slabs are made of a steel or concrete construction, which will need to be confirmed.

6.2 Soil Load Profile

Based on the above assumptions, an 'all-up load' of 15kN/m² per floor has been calculated to establish an existing surcharge on the ground. This equates to a 45kN/m² surcharge.

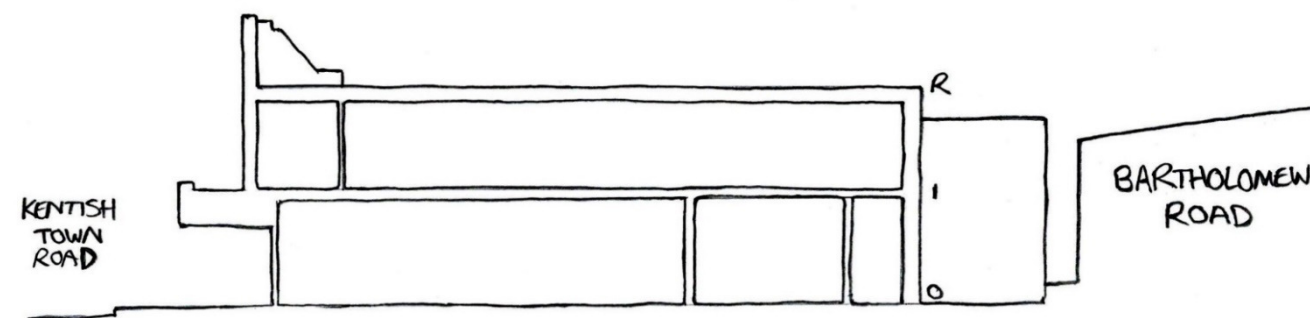
6.3 Foundations

6.3.1 Internal Foundations

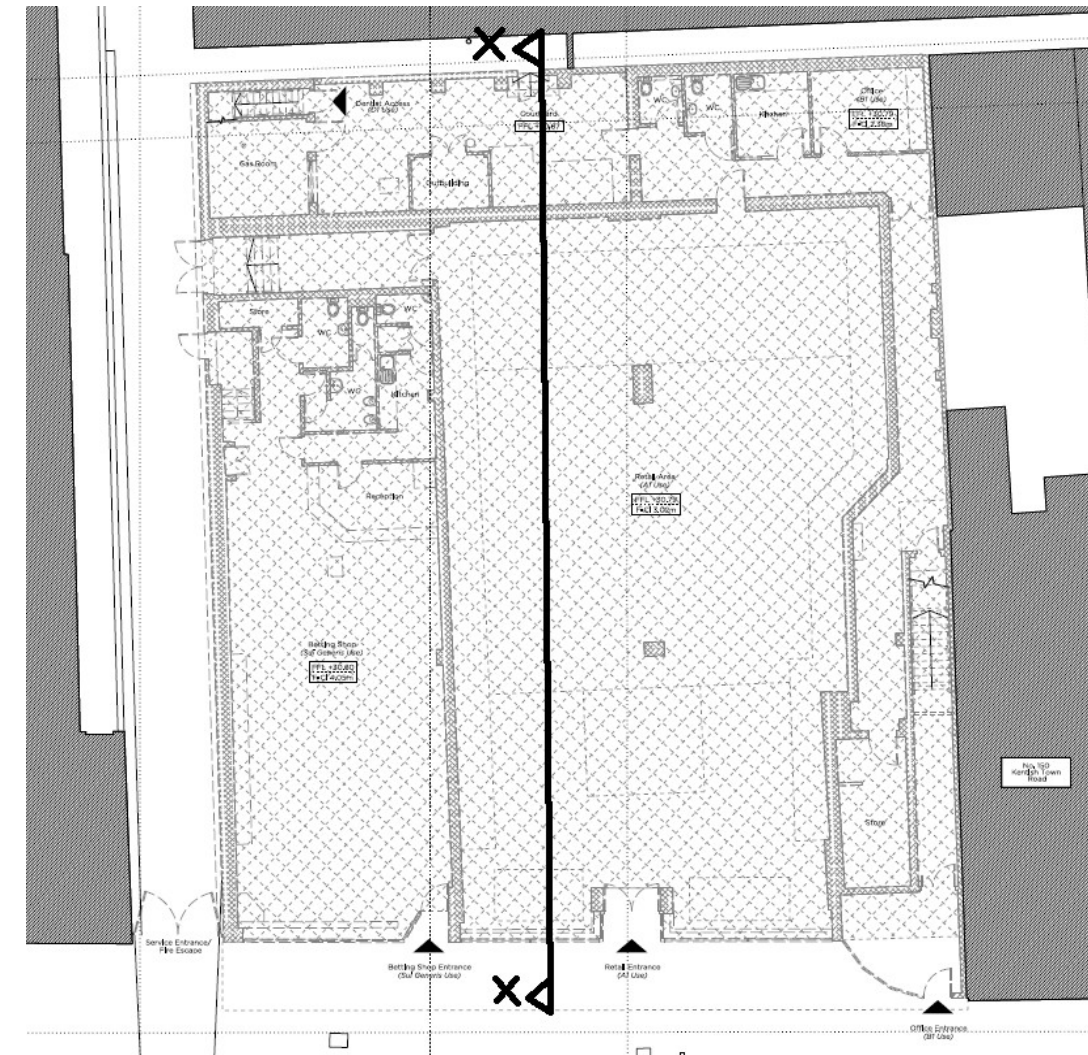
The internal foundations supporting the columns are likely to be shallow concrete pad foundations which will be cleared prior to excavation

6.3.2 Perimeter Foundations

The external masonry walls are likely to be supported on strip foundations of either concrete or masonry corbel. These will be fully surveyed and logged during the next phase of the works as the building is currently tenanted and investigation works are not practically possible.



Section X-X



Measured Survey Plan of LVL0



Photo of West Elevation

6.3.3 Party Wall Foundations (to 150 Kentish Town Road)

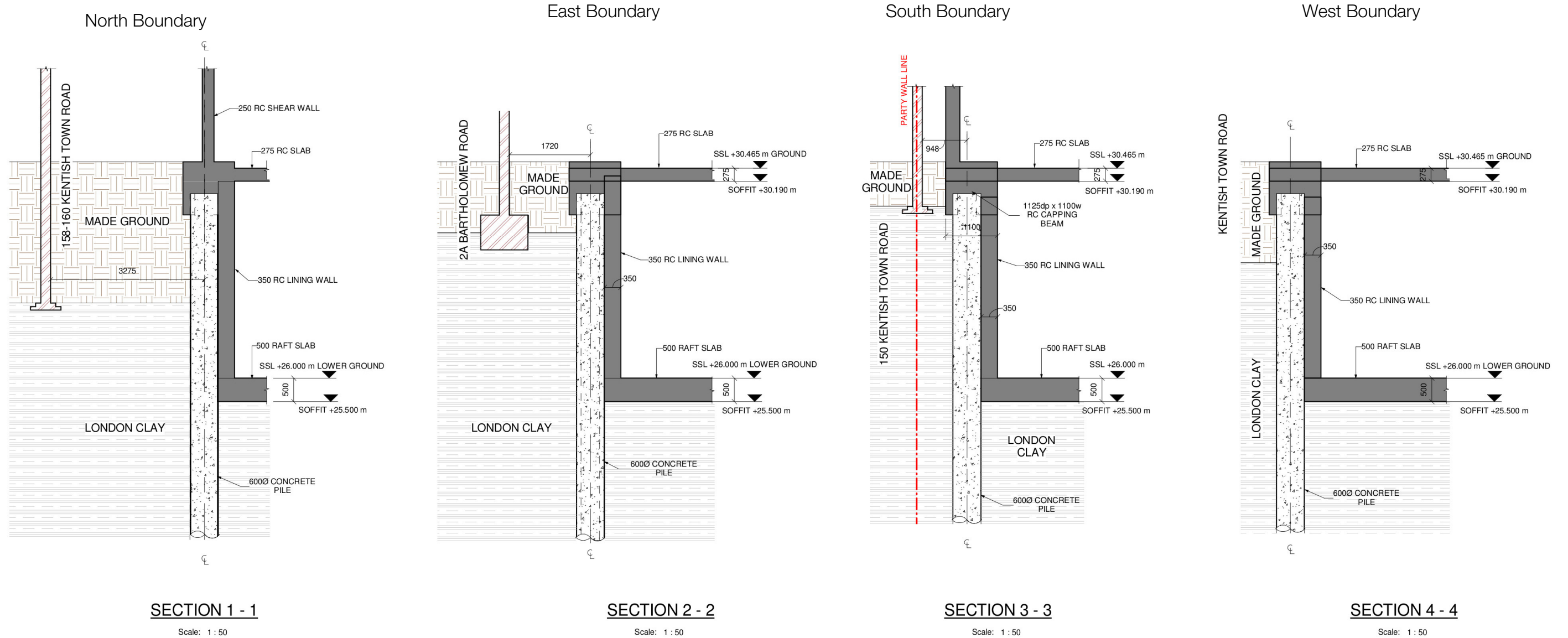
The site itself and neighbouring sites are all Tenanted so extensive and destructive works are not practically possible at present. The details of foundations have been based on guidance documents and previous experience with buildings of this time period, type, and proportions. The foundations of this kind were often masonry corbel strip footings built upon the first suitable strata, in this case the London Clay formation at a depth of approximately 1m+ underlying the made ground. The corbel would typically be 2 courses deep for a party wall of 4 storeys or less. These details will be confirmed at the earliest possible opportunity.

6.3.4 External Wall Foundations (to 158-160 Kentish Town Road)

These foundations are believed to be the same as the party wall foundations to 150 Kentish Town Road, however the Site Investigation suggests that the London Clay is at a deeper level, approximately 3m below ground level. These details will be confirmed at the earliest possible opportunity.

6.3.5 External Wall Foundations (to 2a Bartholomew Road)

This warehouse building is of modern steel portal frame. The foundations for this type of buildings external wall is likely to be reinforced concrete strip footings of between 1 and 1.5m in breadth, constructed on the London Clay. These details will be confirmed at the earliest possible opportunity.



Sections Through Retaining Walls showing nearby Foundations
See Appendix A for full details and referencing

6.3.6 Boundary Condition Photos



150 Kentish Town Road
(South Boundary)
Photo facing East



158-160 Kentish Town
Road (North Boundary)
Photo facing East



2a Bartholomew Road
(East Boundary)
Photo facing South



Kentish Town Road Public
Highway (West Boundary)
Photo facing North East