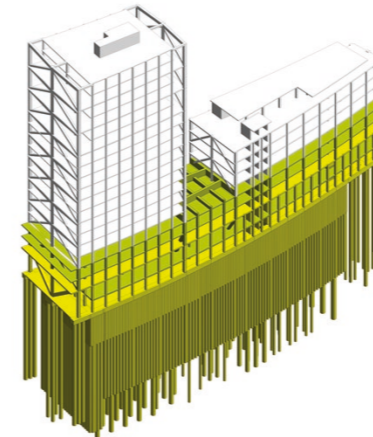
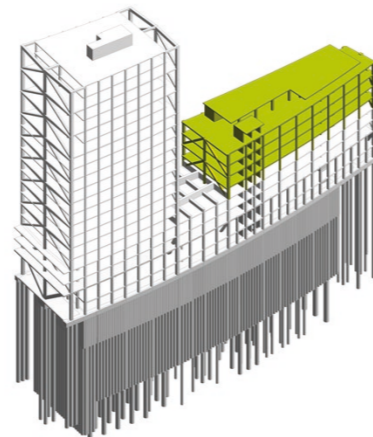
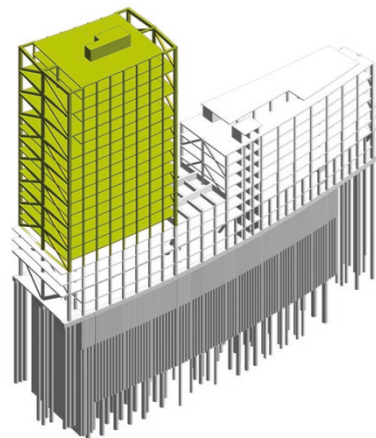


4599 Pope's Road
Basement Impact Assessment
March 2020

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Approved by:		Robert Bennett

1 Introduction

Current proposals are to develop a two-part building at Pope's Road. The east and west buildings will be shared from level 3 down to a two storey basement. There will also be a mezzanine present at level 1 across the two buildings, allowing light to infiltrate through a skylight at level 4.

In this report, important factors such as the site constraints at Pope's Road are explored in more detail, outlining the necessary third party approvals that will be required during the next stages of design. To facilitate this, a detailed site specific investigation is required to allow progression into a detailed design of both the superstructure and substructure.

Under the current geotechnical information, sourced from historic boreholes, an overview of the assumed construction methodologies is provided, including construction sequence and the use of temporary works to be determined by the Contractor at the appropriate stage. Within this, impact on the surrounding assets to Pope's Road is considered under the current site knowledge.

It should be noted that a comprehensive detailed structural and geotechnical assessment of the basement impact has not yet been completed under the current stage of the overall design. Where further work is to be completed, a description of the appraisals to be undertaken together with the underlying design philosophy is included with reference to well established methods of assessment for this type of construction in addition to bespoke methods of analysis as appropriate.

The report has been prepared in response to the requirements outlined by the London Borough of Lambeth in relation to basements and flooding. Reference should be made to the independent Flood Risk Assessment for detailed appraisals of the impact on the surface water and groundwater flows.

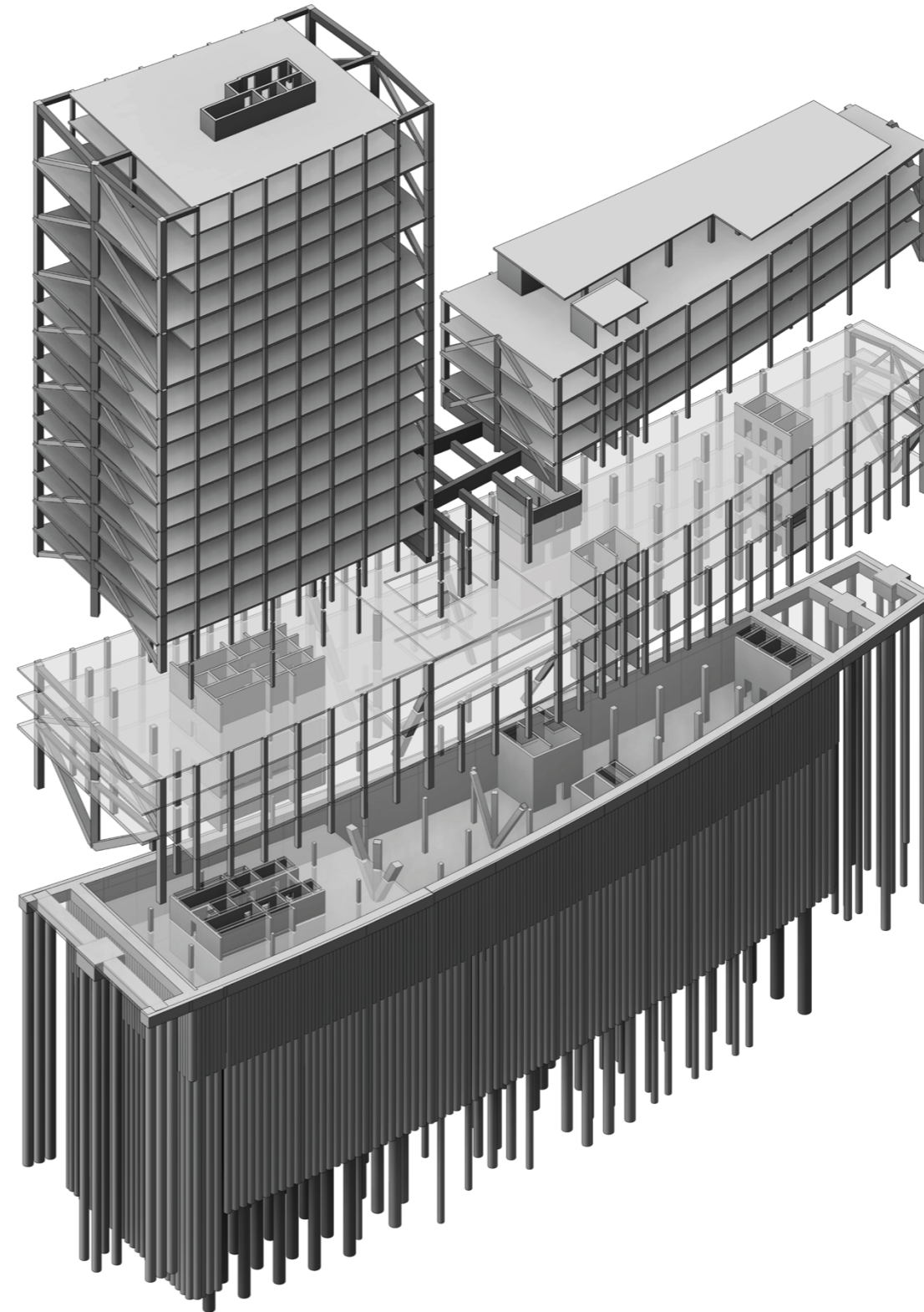


Figure 1.1 Structure overview

2 The Project: Structural Summary

Current proposals are to develop a two-part reinforced concrete (RC) building. The two buildings will be shared from level 3 down to a two storey basement. There will also be a mezzanine present at level 1 across the two buildings, allowing light to infiltrate through a skylight at level 4.

2.1 Structural Frame

Current proposals include:

- A primary concrete frame featuring RC columns, walls, and slabs.
- RC cores and shear walls throughout.
- RC basement construction featuring a secant pile retaining wall, likely to be of a hard/firm arrangement, to prevent water ingress. These will be linked with a pile cap at ground level.
- The second level basement slab, at B2, will be designed to withstand the heave forces from the ground below, spanning between RC pile caps.

2.2 Foundations

Detailed foundation design is to be undertaken upon the completion of a project specific site investigation; this is to begin early in the next stage of the design. Current foundation solutions are based upon existing site information, and feature:

- Piles and associated deep pile caps for that above for all vertically loaded elements.
- Basement retaining wall to be formed of a secant piled wall system, likely of a hard/firm arrangement.

2.3 Third parties/ Investigations/Testing

Discussions and approvals will likely be required with regards to the following:

- Thames Water - underground utilities in the immediate vicinity of the site.
- Network Rail - adjacent railway arches to the North and South of the site.

It should be noted that initial discussions with both Thames Water and Network Rail have already commenced.

Further investigations to be undertaken in Stage 3 to allow progression of design:

- Project specific site investigation.

Further investigations to be undertaken ahead of any construction works:

- CCTV drainage surveys.
- Thames Water Sewer CCTV condition survey.

3 The Site

3.1 Site Location

The site is located in The London Borough of Lambeth, approximately 100m east of Brixton railway station. The site is bound by two railway tracks on the north and south side, both being built upon two continuous arch structures. There are further constraints of Pope's Road to the west of the site, and Valentia Place to the east.

The postcode area of the site is SW9 8JJ, with a National Grid reference of 531270, 175470.

3.2 Site Description

The site can generally be described as a 130m x 30m rectangle which narrows from west to east. The approximate area of the site is 5000m², at a level of approximately 12.50m AOD throughout the site. At ground level, the majority of the site is occupied by market shops and stalls, with the roof of the building used as a storage area combined with parking for commercial vehicles.

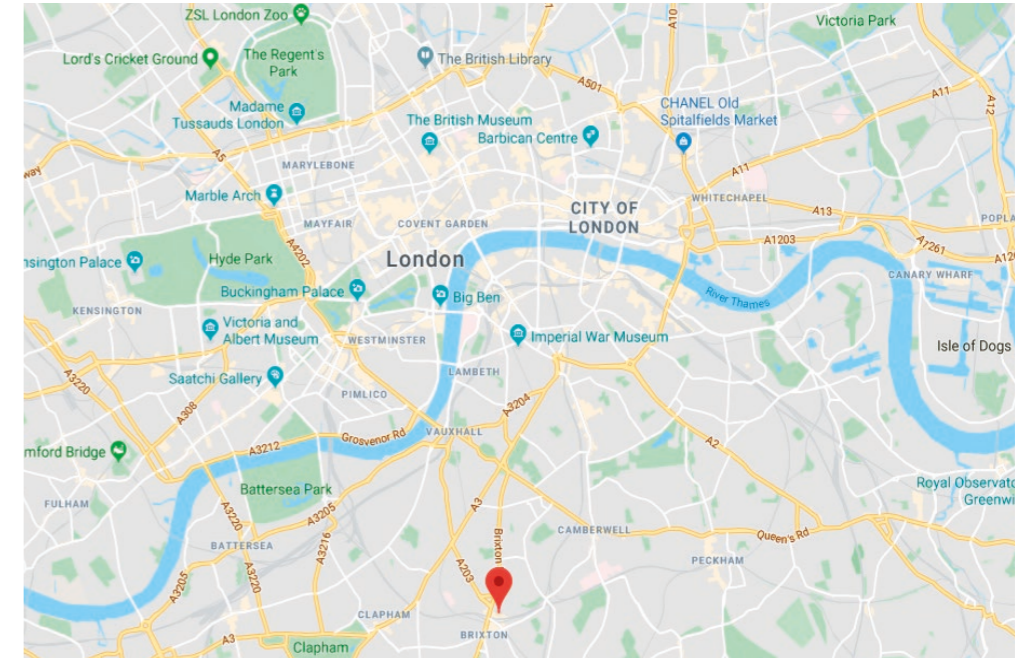


Figure 3.1 Site Location



Figure 3.2 Map of Site



Figure 3.3 3D Image of Site

3.3 Site History

The information and figures in this section are intended to highlight the site's known history and events of note.

The first use of the site can be dated back to 1896, where coal depots are shown. However, the first map of the site on record, published in 1874, does not show these depots. The coal depot is illustrated on multiple published maps from 1896 up until 1968, where it is not clear whether or not they remain.

In the map dated to the 1900's a horse-drawn carriage with coachmen belonging to G.J.Guyer can be seen. A Provision Merchant of 403 & 405 Brixton Road is also seen standing outside N. W. Hubbard's coal merchants on Popes Road. It appears that behind the merchants shop the corrugated roofs of the coal depots are present. Following this image, the 1972 image clearly shows a change in use of this site.

The history of the site since the removal of the coal depots follows the rough timeline below:

- Tesco constructs store on Popes Road, circa 1970.
- Tesco moves to new larger store on Acre Lane leaving site empty for 5 years (stipulated period that the site could not be used for food retailing).
- Kwik Save occupied the site in the 1990's.
- Sports Direct acquires Popes Road buildings and opens store in 2018.

Changes around the site include the construction of a multi-storey car park to the North in the 1970's which served the area for over 40 years. Works commenced for its demolition in November 2010. The site was subsequently used for a temporary ice rink and is now populated by 'Pop Brixton' which transformed a disused plot of land into a pioneering space that showcases the most exciting independent businesses from Brixton and Lambeth, providing a new destination that supports them to set up shop and share space, skills and ideas.



Figure 3.4 Map dated 1874

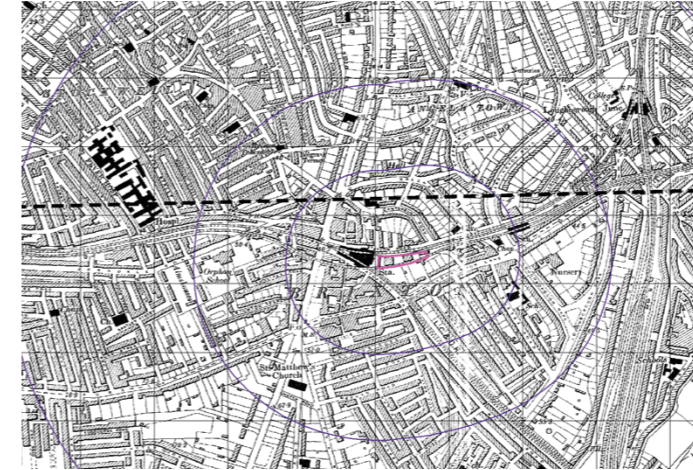


Figure 3.5 Map dated 1896

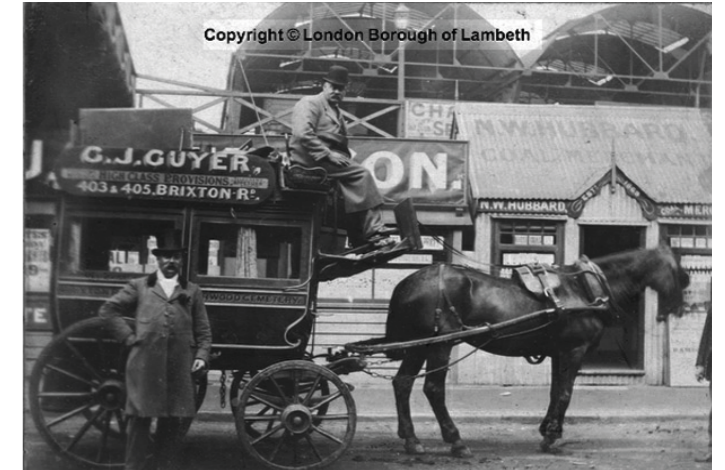


Figure 3.6 1900s Image of coal merchants



Figure 3.7 Tesco Popes Road 1972

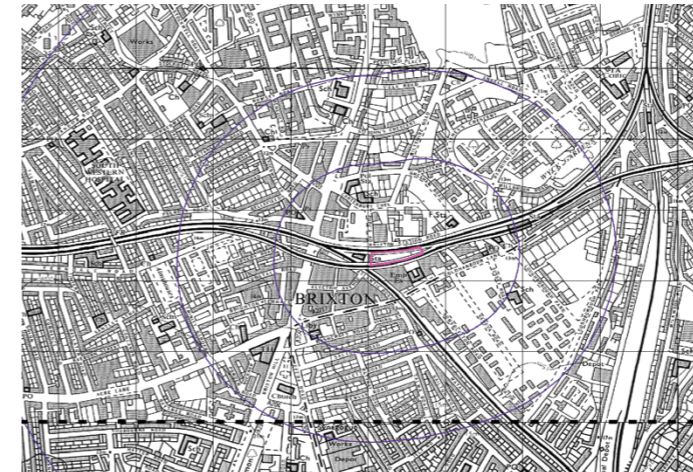


Figure 3.8 Map dated 1975

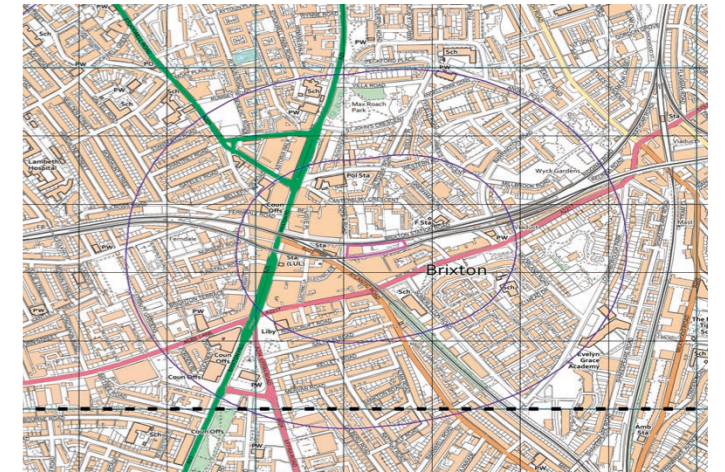


Figure 3.9 Present day map

3.4 Existing Structure

The following section will provide an overview of the existing structure that currently occupies the site of the proposed development. The information provided has been provided through a third-party building survey report, conducted in December 2018. The property at 18-24a Pope's Road is not a listed building, nor is it located in a conservation area.

The current structure is a single story RC frame which has been clad with brickwork, dating from the mid-twentieth century. The ground floor slab is also RC concrete, of an in-situ construction. This has been assumed to have been designed as ground bearing.

The roof structure is similarly of an in-situ RC construction, but is also noted to be supported by exposed structural steel elements. There is currently no basement structure on-site.

It is understood that 'Sports Direct' is the current leaseholder, with the premises being used for retail purposes.

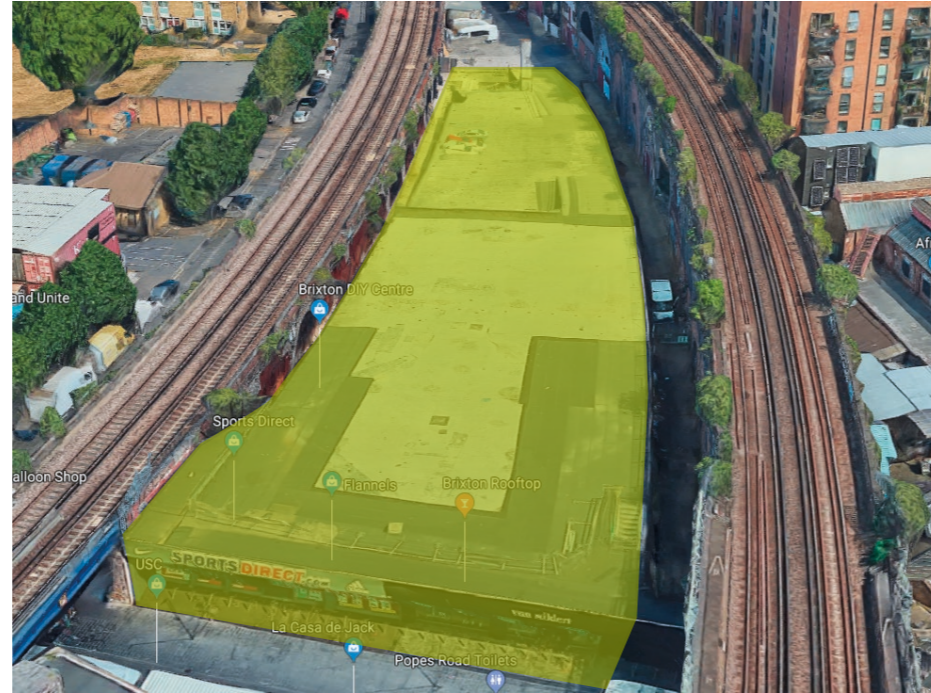


Figure 3.10 West to east View of existing structure



Figure 3.11 East to west view of existing structure



Figure 3.12 Current storefront



Figure 3.13 Car park located on roof

3.5 Geotechnical Strata

The following information will highlight the relevant ground conditions that are likely to be encountered at the proposed development site. This information has been accrued from limited recorded and publicly available sources, such as the British Geological Society (BGS).

It is recommended that a project specific geotechnical and geo-environmental investigation of the site is implemented at the earliest available opportunity. This will confirm the existing conditions, facilitate design development, and mitigate risks associated with the uncertainty of information.

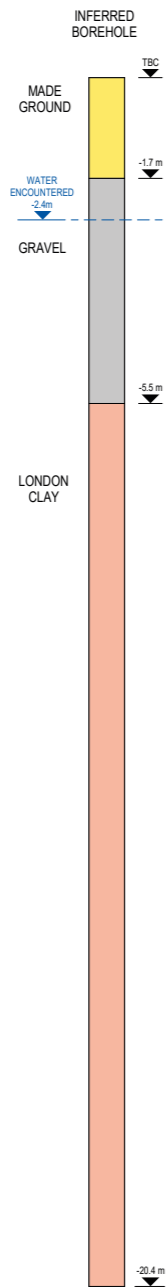


Figure 3.14 Inferred borehole

3.5.1 Local geology

London lies at the heart of the Thames Basin; this is a vast geological river basin that stretches from the Cotswold Hills to High Weald in South East England. With the large and continually growing population of London, the Thames Basin is the most densely populated river basin in the country. The basin is primarily comprised of chalk strata, with the presence of sands and clays towards its centre.

Geological maps from the BGS indicate the superficial stratum to be Taplow Gravel Formation (TPGR), which is likely to be made up of a combination of sand and gravel. The exact composition and extent will need to be confirmed as part of the future site investigation. The superficial stratum is then underlain by a layer of London Clay which forms the bedrock geology.

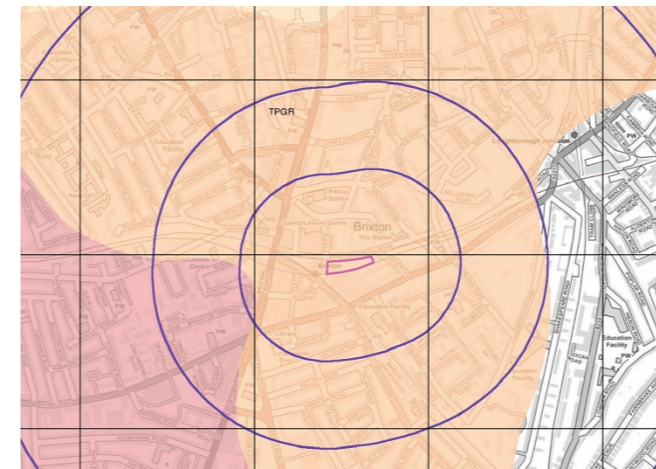


Figure 3.15 BGS map showing superficial geology

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
[Orange]	TPGR	Taplow Gravel Formation	Sand and Gravel	Wolstonian - Chokierian
[Light Orange]	TPGR	Taplow Gravel Formation	Gravel	Wolstonian - Chokierian

Figure 3.16 BGS geology key

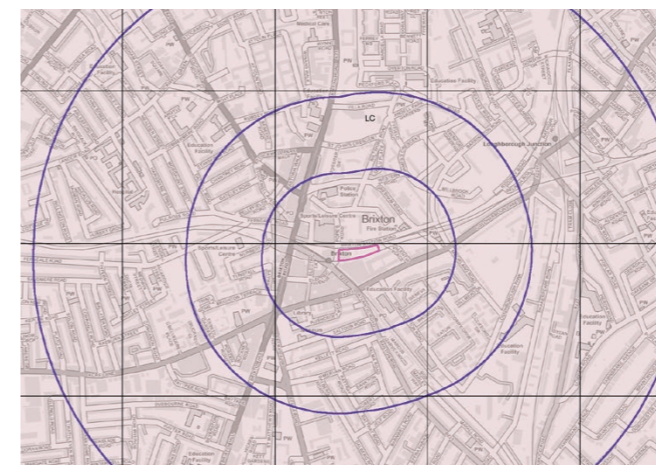


Figure 3.17 BGS map showing bedrock geology

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
[Light Orange]	LC	London Clay Formation	Clay	Eocene - Eocene

Figure 3.18 BGS bedrock key

3.5.2 Anticipated ground conditions

The map below shows the location of historical borehole information available. The closest boreholes, numbered 320 and 321, were carried out in 1989 and 1966 respectively. Borehole 321 provides the only data that is in the immediate vicinity, being situated 14m West of the site.

The inferred borehole has been created using the information from these boreholes, combined with internal experience from previous AKT II projects. However, due to the age and the fact that the majority of the historical boreholes were not taken in close proximity to the site, it is recommended that further investigation is carried out to confirm the anticipated ground strata.

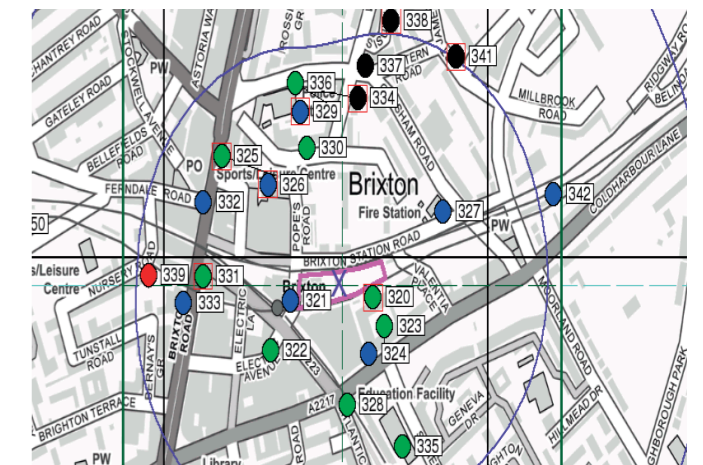


Figure 3.19 Existing borehole location map

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m

Figure 3.20 Borehole key