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MLM Environmental

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Basement Screening Assessment

Document Ref:	773883-REP-ENV-001
Revision:	0
Date:	21 June 2016

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V8

Document Control Sheet

Revision No	Date	Status	Changes	Author	Approved
0	21 June 2016	Final	-	S. Chara	S. Chara

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Executive Summary

Details	Summary of Main Text
Introduction	This report has been prepared on the instructions of Syndex (London) Ltd who is proposing to lower the existing garden by 700mm to the same level as the existing lower ground floor with raised garden, lightbox and raised planter.
Site description	The site is at 20 New End, Hampstead, London.
Environmental Setting	Strata comprising Claygate Member Formation soils is shown to underlie the site. The site is not within a groundwater source protection zone. The nearest significant surface water feature is Hampstead Heath Ponds located approximately 430m from the site.
Ground Investigation	
Ground Conditions Encountered	An historic borehole excavated within 50m east of the site shows the presence of 4m of silty sandy clay followed by 1.5m of sand under the site.
Screening Assessment	
Surface Flow and Flooding	The assessment has not identified any surface flow or flooding issues at the site.
Subterranean (groundwater) flow	The assessment has not identified any groundwater issues at the site.
Slope Stability	The site is above a known aquifer but as the lower ground floor is being extended laterally it will not intercept known water bearing strata in the area. Ground levels are being lowered by 700mm but will be at a similar level to historic ground formation level at the site and therefore the impact is assessed as low.
Further Work	The effect of potential impacts are assessed as low and therefore a Basement Impact Assessment as described in the London Borough of Camden guidance CPG 4 is not required for this project.

Limitations and Exceptions

1 This report and its findings should be considered in relation to the terms and conditions proposed and scope of works agreed between MLM Consulting Engineers Ltd (MLM) and the client.

2 The Executive Summary, Conclusions and Recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon until considered in the context of the whole report and the development, if any, proposed.

3 The assessment and interpretation of contamination and associated risks are based on the scope of work agreed with the client and the report may not be sufficient to fully address contaminations or to allow detailed remediation design to proceed without further investigation and analysis.

4 Any assessments made in this report are based on the ground conditions as revealed by the exploratory holes and pits, together with the results of any field or laboratory testing undertaken and, where appropriate, other relevant data which may have been obtained for the sites including previous site investigation reports. There may be special conditions appertaining to the site, however, which have not been revealed by the investigation and which have not, therefore, been taken into account in the report. The assessment may be subject to amendment in the light of additional information becoming available.

5 Interpretations and recommendations contained in the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based on current legislation in force at that time.

6 Where the data available from previous site investigation reports, supplied by the Client, have been used, it has been assumed that the information is correct. No responsibility can be accepted by MLM for inaccuracies within the data supplied.

7 Whilst the report may express an opinion of possible configuration of strata between or beyond exploratory hole or pit locations, or on the possible presence of features based on visual, verbal or published evidence, this is for guidance only and no liability can be accepted for the accuracy.

8 Comments on groundwater conditions are based on observations made at the time of the investigation unless otherwise stated. It should be noted that groundwater levels can vary due to seasonal or other effects.

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1 Introduction

1.1 General

This report has been prepared by MLM Consulting Engineers Ltd (MLM) on the instructions of Syndex (London) Ltd who is proposing to lower the existing garden floor by 700mm to the same level as the existing lower ground floor with raised garden, lightbox and raised planter.

This report presents the findings of a Basement Screening Assessment undertaken in accordance with the guidelines published by the London Borough of Camden (LBC) in support of the planning application.

1.2 Terms of Reference

The terms of reference for the work were set out in the MLM proposal 773883-FEE-ENV-001 dated 5 April 2016.

1.3 Proposed Development

It is being proposed to extend the existing lower ground floor with raised planter covered with raised garden and lightbox. As part of these works, it is intended to lower the existing garden by 700mm to similar height with neighbouring gardens. However, the garden was only raised in 2009 to the current level.

2 The Site

2.1 Location and Description

The site is at 20 New End, Hamstead, London, an end-of-terrace house. The house is rectangular in shape and measures approximately 14m by 5.5m. It is bordered to the north by No 18 New End, to the east by New Road, to the south by No 22 New End and to the west by gardens associated with No 14 New End. The garden is paved with planters.

The lower ground floor is currently at an approximate level of 105.7m AOD and New Road is at an approximate level of 107.7m AOD. The ground around the site gently inclines away from Hampstead Heath at a gradient of 1:14.

The National Grid Reference for the approximate centre of the site is 526509,185975.

A location plan of the site is presented as Figure 1.

2.2 Geology

The British Geological Survey map of the area shows the site to be underlain by Claygate Member below which is London Clay. The Claygate Member is capped with Bagshot Formation immediately to the west of the site. However, the Camden Geological, Hydrogeological and Hydrogeological Study (prepared by Arup, on behalf of LBC) confirms that the site is only underlain by Claygate Member and there are no overlying permeable superficial strata.

Borehole records sourced from the British Geological Survey indicates that, at a location 50m to the east of the site, ground conditions comprise 4m of silty sandy clay from near surface followed by 1.5m of sand below which is silty clay. At a location 150m west of the site, borehole records indicate the presence of 5.6m of brown stiff clay followed by 5.6m of silty sandy clay, followed by 2m of sand. These records indicate the Bagshot formation to be mainly clay in the area and the Claygate Member to be interbedded layers of clay and sand.

2.3 Hydrogeology

The Environment Agency website provides the following hydrogeological information:

Table 2.1 Aquifer Properties

Aspect	Designation	Description
Groundwater Source Protection Zone	No SPZ	The site is not within a catchment area where groundwater is discharged to a source.
Aquifer Designation – Bedrock Deposit Claygate Member and Bagshot Formation	Secondary Aquifer (A)	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

There are no buried rivers under the site (Barton (2016)).

2.4 Hydrology

The closest significant surface water feature is Hampstead Ponds located approximately 430m to the north of the site.

2.5 Existing Site Drainage Information

The Environment Agency website indicates that the site is free from surface water flooding. This is confirmed by a flood map within Camden Geological, Hydrogeological and Hydrogeological Study. The nearest road that has historically flooded is Flask Walk, some 100m to the south of the site.

3 Screening Assessment

The Camden Geological, Hydrogeological and Hydrogeological Study compiled by Arup (2010) and the London Borough of Camden Planning Guidance CPG 4: Basement and Lightwells (2015) contains a list of questions within three flowcharts for surface water flow, groundwater flow and slope stability. The response to these questions are presented in the following sections.

3.1 Surface Flow and Flooding Screening Assessment

Table 3.1 Surface Flow and Flooding Screening from LBC Study

Question		MLM Response
1	Is the site within the catchment of the pond chains on Hampstead Heath?	No (The site is 430m from the Heath)
2	As part of the proposed site drainage will surface water flows (e.g. volume of rainfall and peak run off) be materially changed from the existing route?	No. The existing garden is paved and the proposed raised garden will grass over it and therefore no increase in run off. In addition planters will be maintained at the site
3	Will the proposed basement development result in change in the proportion of hard surfaced/paved areas?	No. There is no increase in hard surfaces.
4	Will the proposed basement development result in changes to the profile of the inflows of surface water being received by adjacent properties or downstream watercourses?	No. The existing garden has hardstanding and the proposed raised garden will have grass surface and have raised planters. Overall there will be less run off than under existing conditions.
5	Will the proposed basement result in changes in quality of surface water being received by adjacent properties or down stream	No. There is no increase in surface run off from site and there will not be any impact on the near surface groundwater flow.
6	Is the site in an area known to be at risk from surface water flooding, such as South Hampstead, West Hampstead, Gospel Oak and Kings Cross, or is at risk from flooding, for example because the proposed basement is below the static water level of a nearby surface water feature?	No. The site is not near these areas and historically the area has not been flooded.

There will not be any change in the surface water run off or in the near surface groundwater from the site.

3.2 Subterranean (groundwater) Flow Screening Flowchart

Table 3.2 Groundwater Screening from LBC Study

Question	MLM Response
1a Is the site located directly over an aquifer?	Yes. The site is located over Claygate Member, classified as a Secondary Aquifer
1b Will the proposed basement extend beneath the water table surface?	No. Historical data indicate the site is underlain by clay and the basement will not extend beyond the clay layer.
2 Is the site within 100m of a watercourse, well (used/disused) or potential spring line?	No, the nearest water course is 430m from the site
3 Is the site within the catchment of the pond chains of Hampstead Heath?	No
4 Will the proposed basement development result in change in the proportion of the hard surfaced/paved areas.	No. There will not be any increase in the hard surface area within the proposed development.
5 As part of the site drainage, will more surface water (e.g. rainfall and run off) than at present be discharged to the ground (e.g. via soakways and or SUDS)?	No. There will not be any increase in the hard surface area within the proposed development.
6 Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to or lower than, the mean water level in any local pond (not just the pond chains on Hampstead Heath) or spring line?	No. No pond is nearby. There is no evidence of historic flooding near the site.

The assessment has not identified any groundwater issues at the site.

3.3 Slope Stability Screening Assessment.

Table 3.3 Slope Stability Screening from LBC Study

Question	MLM Response
1 Does the existing site include slopes, natural or man-made greater than 7^0 (approximately 1 in 8)?	No, the site is shallower at 1:14
2 Will the proposed re-profiling of landscaping at the site change slopes at the property boundary to more than 7^0 (approximately 1 in 8)?	No; there will not be any external regrading of the ground.
3 Does the development neighbour land, including railway cuttings and the like with the slope greater than 7^0 (approximately 1 in 8)?	No. The surrounding land mainly comprises gardens and residential dwellings at a similar level to the site.
4 Is the site within a wider hillside setting in which the general slope is greater than 7^0 (approximately 1 in 8)?	No. The surrounding area is at 1:14.

Question	MLM Response
5 Is London Clay the shallowest strata at the site?	No. The shallowest strata is Claygate Member. Maps contained within Arup(2010) indicates the site to be located in an area that has a potential to landslide. However only maximum of 700mm is being excavated within the site and as historically the ground has been lower than the current level it is considered any risk from landside is negligible.
6 Will any trees be felled as part of the proposed development and or are any works proposed within any tree protection zones where trees are to be retained?	No. The planters are being repositioned at the site.
7 Is there a history of seasonal shrink swell subsidence in the local area, and or evidence of such effects at the site?	No
8 Is the site within 100m of a watercourse or a potential spring line.	No, the nearest water course is 430m from the site
9 Is the site within an area of previously worked ground?	No. None are shown on the British Geological Survey plan or Environment Agency website.
10 Is the site within an aquifer? If so will the proposed basement extend beneath the water table such that dewatering may be required during construction?	Yes. However the lower ground floor is being extended laterally and therefore unlikely to intercept the water bearing sands in the area.
11 Is the site within 50m of the Hampstead Heath ponds?	No
12 Is the site within 5m of highway or pedestrian right of way?	No. The area of excavation is approximately 11.5m from the highway. However the ground between the site and highway will not be lowered and the risk of causing instability to the highway is very low.
13 Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	No.
14 Is the site over (or within the exclusion zone of) any tunnels e.g. railway lines.	No. None are shown on the BGS and Ordnance Survey.

The assessment has not identified any slope stability issues at the site. The site is above a known aquifer but as the lower ground floor is being extended laterally it will not intercept known water bearing strata in the area.

3.4 Appraisal of Potential Impacts

The screening assessment has confirmed that the proposed development will not cause harm to the built and natural environment; result in flooding or lead to ground instability.

4 Conclusions and Recommendations

The desk study has identified that the site is underlain by Claygate Member.

The screening assessment has confirmed that the proposed development will not cause harm to the built and natural environment; result in flooding or lead to ground instability. Therefore, a Basement Impact Assessment as described in the London Borough of Camden guidance CPG 4 is not considered to be required for this project.

5 References

1 Arup (2010), Camden Geological, Hydrogeological and Hydrological Study, Guidance for Subterranean Development, London Borough of Camden.

2 London Borough of Camden Planning Guidance CPG 4: Basement and Lightwells(2015).

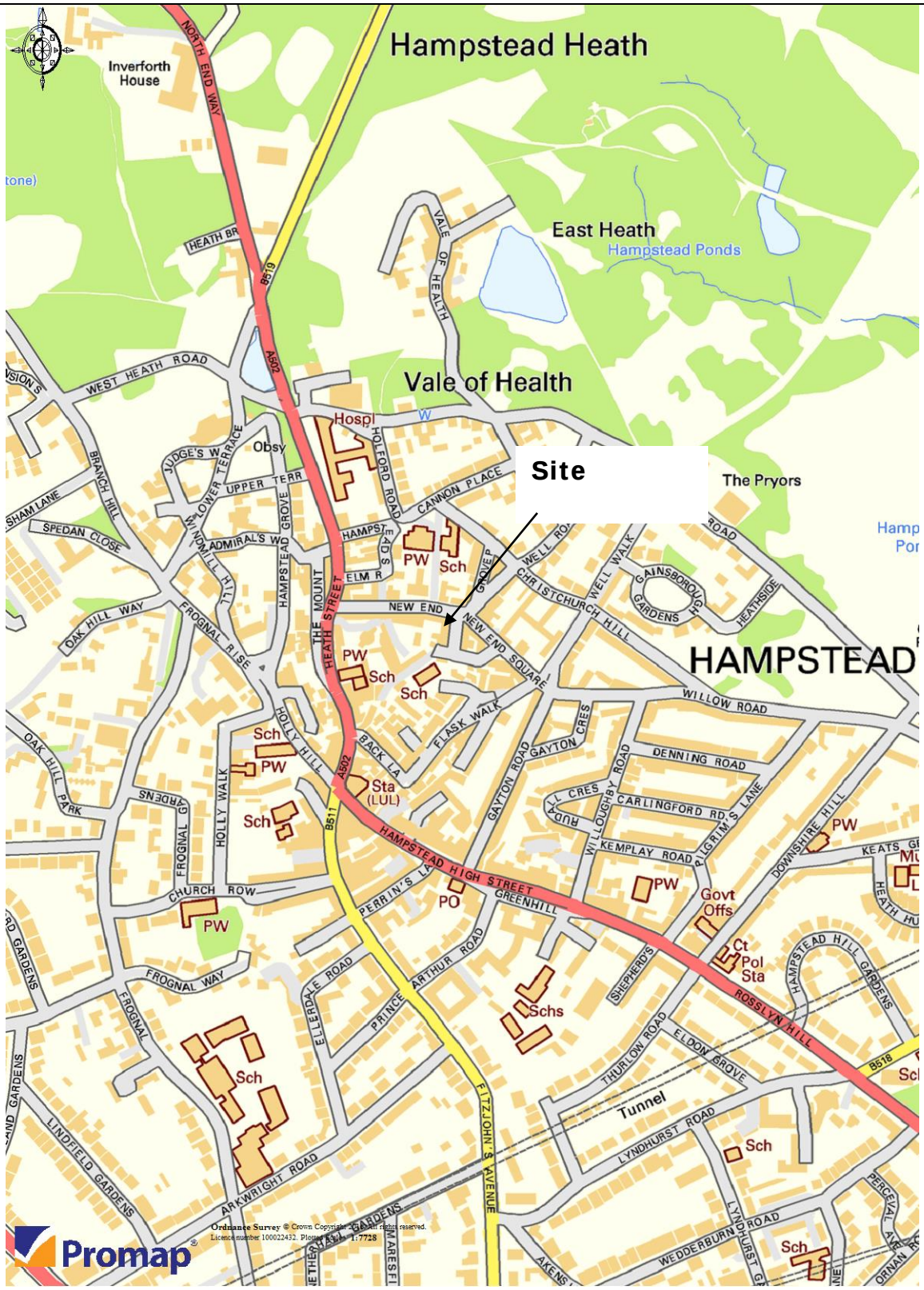
3 British Geological Survey (2006) Sheet 256 North London. 1:50,000 scale Geology Map, Solid and Drift Edition.

4 Building Research Establishment (1993) Building on shrinkable clay. BRE Digest 240 - Part 1.

5 Barton and Myers(2016). The Lost Rivers of London, Historical Publications.

Figures

Figure 1: Site Location Plan



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MLM www.mlm.uk.com	Figure 1	Site Location Plan
	Project	20 New Road
	Project Ref	773883
	Date	May 2016