Clifford Pugh House, Hampstead

Ground Conditions Desk Study Report

Final Report for

December 2013

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APPENDICES

Executive Summary and Conceptual Site Model

SITE INFORMATION AND SETTING	**Purpose of this Report**	Phase 1 desk study and preliminary risk assessment.
	Client	University College London
	Site	Clifford Pugh House, Hampstead
	Site Location	Clifford Pugh House, Lancaster Grove, Hampstead, London. The nearest postcode is NW3 4HE and the approximate National Grid Reference 527034E 184594N.
	Current Land Use and Description	The site is currently a 4 storey student accommodation building. There is a gas fired boiler to the west of the building, adjacent to the dustbin storage area. A covered bicycle store is located in the west of the site. In the north of the site are a number of mature trees surrounded by overgrown brambles. The building structure shows a large amount of cracking both internally and externally.
	Development	The exact nature of the development is unknown. However, it is understood to comprise demolition of the current building and construction of a new residential building.
PHASE 1 (DESK STUDY)	**Site History**	The map evidence indicates that the site was formerly open land until between 1878 and 1894 when the site was developed to a residential end-use. The outhouse to the rear of the house may be a source of contamination, depending on the previous usage. General Made Ground arising from the various phases of development of the site could include materials having elevated concentrations of contaminants other than those identified previously, whilst such materials could also be a source of hazardous gas emissions. Dependant on the depth of Made Ground present, such materials are unlikely to provide a suitable formation level for foundations or floor slabs.
	Unexploded Ordnance	A preliminary assessment indicates a low to moderate bomb risk. Further consideration of UXO is required, (e.g. a preliminary risk assessment in accordance with CIRIA C681, Chapter 5).
	Geology	The general geology of the site area is shown on the 1:50,000 geological map of North London (Sheet 256) comprises the London Clay Formation which mainly comprises poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay.
	Hydrogeology	London Clay Formation is classed as unproductive strata by the environment agency.
	Hydrology	There is one surface water feature in the vicinity of the site. This is a culvert 280m to the east of the site.
	Flood Risk	The site is in Flood Zone 1.
	Environmental Sensitivity	The site is in an urban area. There are no statutory environmental designations affecting the site.
	Radon	No radon protective measures are necessary according to current guidance.
	Geotechnical Hazards from Desk Study	Potential geotechnical hazards based on the expected ground conditions are: • Uncontrolled Made Ground – excessive settlement (creep and inundation settlement or differential settlement of foundations, roads, sports pitches and infrastructure elements. • Attack of buried concrete by aggressive ground conditions – the development site may contain unknown Made Ground and potentially sulfate bearing soils. • Shrink / swell of clay – settlement / heave of foundations when located within the

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It is considered that it is unlikely that the site would be classified as Contaminated Land under Part 2A of the EPA 1990.
Based on the available desk study and walk-over information, the following geotechnical issues need to be addressed in exploratory investigation:
• determine the depth of Made Ground across the site;
• determine the strata and soil strength profile beneath the site;
• a foundation depth due to trees assessment; and
• assess the sulfate concentration with depth.</td></tr>
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• the excavation of trial pits to allow collection of samples for geotechnical and chemical analysis, to assess trench stability, over break potential and “digability” and allow soil infiltration rate testing to be undertaken;
• shell and auger boreholes to allow collection of samples for geotechnical and chemical analysis of shallow soils and allow in-situ testing (SPTs) to be undertaken to assess density of the sands and gravel to allow foundation design, and allow the installation of gas and groundwater monitoring wells;
• gas and groundwater monitoring installations to allow gas concentrations and groundwater levels to be monitored;
• gas concentration and groundwater level monitoring;
• foundation depth due to trees assessment;
• geotechnical testing of soils; and
• contamination analyses of soil and groundwater.</td></tr>
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This Executive Summary forms part of Hydrock Consultants Limited report number R/13868/001 (Issue 1) and should not be used as a separate document.

1.0 INTRODUCTION

1.1 Terms of Reference

In December 2013, Hydrock Consultants Limited (Hydrock) was commissioned by Deloitte Real Estate on behalf of University College London (Proposal number E10707) to undertake a ground conditions desk study at Clifford Pugh House, Hampstead.

The site covers approximately 0.1 ha and is currently used as student accommodation, with a garden and bike shed to the rear.

The proposed development is understood to comprise a residential building. However, Hydrock have not seen a proposed development plan.

A Site Location Plan (Drawing 13868-D001) and a Site Survey Plan are presented in Appendix A.

1.2 Objectives

The objectives of this investigation are to assess the readily available information on the likely ground conditions at the site and consider the likelihood of geo-environmental and geotechnical hazards.

1.3 Scope

The scope of work for this commission comprises:

- a desk study and site walk-over reconnaissance to determine the nature of the site and its surroundings including current and former land uses, geology, hydrogeology and hydrology; and
- reporting on findings.

2.0 PRELIMINARY INVESTIGATION (PHASE 1 STUDY)

A number of desk study sources have been used to assemble the following information, including a proprietary environmental data report which has been obtained for the site (dated December 2013) and is presented in Appendix D.

2.1 Site Referencing

The site is referenced in Table 2.1.

Table 2.1: Site Referencing Information

Item	Brief Description
Site name	Clifford Pugh House, Hampstead.
Site location and grid reference	Clifford Pugh House, Lancaster Grove, Hampstead, London (nearest postcode is NW3 4HE) at approximate British National Grid Reference 527034E 184594N.

A Site Location Plan is provided in Appendix A (Drawing 13868-D001).

2.2 Site Description and Walk-over Survey

The basic description of the current site conditions is summarised in Table 2.2.

Table 2.2: Site Description

Item	Brief Description
Site access	Via Lancaster Grove, Hampstead.
Land area	Approximately 0.1 ha.
Elevation, topography etc.	The site is topographically relatively flat lying.
Site boundaries	The north, east and west of the site are marked by a 3 metre high brick wall. The south of the site is marked by Lancaster Grove.
Present land use	The site is currently a 4 storey student accommodation building. There is a gas fired boiler to the west of the building, adjacent to the dustbin storage area. A covered bicycle store is located in the west of the site. In the north of the site are a number of mature trees surrounded by overgrown brambles. The building structure shows a large amount of cracking both internally and externally.
Vegetation	There are many trees located to the rear of the site. The north of the site is overgrown with brambles.
General Site Sensitivity	The site is in an urban area. There are no known statutory environmental designations affecting the site.
Surrounding Land	The land surrounding the site is used for residential purposes.

A walk-over reconnaissance survey was undertaken to confirm the findings of the desk study and assess visually any potential hazards and receptors. Photographs are presented in Appendix B.

2.3 Site History

A study of historical Ordnance Survey maps (Appendix C) has been undertaken to identify any former land uses at the site and surrounding areas which may have geotechnical or geo-environmental implications for the proposed development and is summarised in Table 2.3.

Table 2.3: Key Features from Historical Mapping

Map Edition and Scale	Key Features On Site	Key Features Off Site
1866: 1:2,500 1:10,560	The site is agricultural land.	Residential land is present to the north and west and agricultural land is located to the south and east. A shaft is located approximately 400m to the northwest of the site, possibly associated with an underground railway line.
1871: 1:2,500	No significant change.	The shaft is no longer identified.
1894: 1:2,500 1:10,560	The site has been developed into a semi-detached residential building, with an outhouse building in the north of the site.	To the south and east of the site the area has been developed for residential end use.
1915-1935: 1:2,500 1:10,560	No significant change.	No significant change.
1948: 1:10,560		A hospital is located approximately 450m to the south east of the site.
1953: 1:2,500		No significant change.
1957: 1:10,560		A fire station is located approximately 350m to the southeast of the site.
1965: 1:10,560		The hospital is now a civic centre.
1968-2002 1:2,500 1:10,000		No significant change.
2012 1:2,500 1:10,000	The outhouse is no longer present in the north of the site.	

In summary, the map evidence indicates that the site was formerly open land until between 1878 and 1894 when the site was developed to a residential end-use. The outhouse to the rear of the house may be a source of contamination, depending on the previous usage. Areas surrounding the site are not considered to consist of potentially contaminative uses.

General Made Ground arising from the various phases of development of the site could include materials having elevated concentrations of contaminants of concern, whilst such materials could also be a source of hazardous gas emissions. Dependant on the depth of Made Ground present, such materials are unlikely to provide a suitable formation level for foundations or floor slabs.

2.4 Unexploded Ordnance / Bombs

In general accordance with CIRIA report C681 (Stone *et al* 2009) a non-UXO specialist screening exercise has been carried out for the site. This indicates:

- there is no indication of former military use from the desk study; and
- the a preliminary non specialist UXB risk assessment indicates the site to be in an area where the bomb risk is low to moderate (further action to mitigate the risk is considered to be prudent).

In summary, a preliminary non-specialist assessment of UXO risk indicates a low to moderate bomb risk and therefore consideration should be given to undertaking a specialist risk assessment in accordance with CIRIA C681, Chapter 5.

2.5 Geology

The general geology of the site area is shown on the 1:50,000 geological map of North London (Sheet 256) and is summarised in Table 2.4.

Table 2.4: Geology

Location	Age	Stratigraphic Name	Description
Off Site	Palaeocene	London Clay Formation	The London Clay mainly comprises, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay.

Due to the previous development of the site some Made Ground is anticipated across the site area.

2.1 Mining or Mineral Extraction

The site is not within areas of recorded mining. Whilst the London Clay Formation could provide a potential source of clay for brick manufacture there is no evidence on the historical plans of any brick pits or brick and tile works having existed in the site area or in the vicinity of the site.

2.2 Ground Stability

The site is not directly underlain at shallow depth by strata associated with soluble deposits, the underlying Chalk deposits being considered to be too deep (approximately 200m) to be affected by such processes. The site is not within an area subject to formation of natural cavities (the Chalk Formation being considered to be too deep to affect the site).

The London Clay deposits may also be affected by moderate potential for shrinking or swelling of clays.

2.3 Hydrogeology

The aquifer designations given in Table 2.5 are based on the Environment Agency interactive aquifer designation map. Additional information on the hydraulic characteristics of the geological units has been abstracted from Jones *et al* (2000).

Table 2.5: Hydraulic Characteristics of Strata

Stratum	Aquifer Designation	Hydraulic Characteristics
Made Ground (Imported Fill)	Unproductive strata	Moderate to high porosity because of unconsolidated nature, but permeability likely to be constrained to low or low to moderate because of poor sorting and clay content.
London Clay Formation	Unproductive strata	Dominated by low permeability clay which is interbedded with moderate to high permeability layers of sand with occasional gravel; overall, this unit is likely to be anisotropic in nature with horizontal permeability greater than vertical permeability (i.e. kh>kv).

The site is not within a Source Protection Zone (SPZ).

There is 1 licensed groundwater abstractions within 1000m of the site. It is located approximately 400m to the south of the site for spray irrigation.

2.4 Hydrology and Flooding

The surface water features in the vicinity of the site are listed in Table 2.6 and, where appropriate, are marked on the Site Zonation Plan in Appendix A.

Table 2.6: Surface Water Features

Feature	Location Relative to Site
Culvert	280m to the east of the site.

There are no surface water abstractions in the vicinity of the site.

The site is in Flood Zone 1[1], with low probability of flooding and as such no further consideration of flood risk is undertaken in this report. Specialist flood risk advice should be sought with regards to drainage and flooding.

2.5 Waste Management and Hazardous Substances

The following waste management sites are recorded in the vicinity of the site (Table 2.7).

Table 2.7: Waste Management Sites

Site Name	Details
Canfield Place (historical landfill)	The site location is given as Canfield Place, London, NW6, approximately 800m to the south. The site reference is DON009. No further details are available.

There are no records relating to the storage of radioactive materials within 1km of the site.

[1] Note that the probabilities of flooding and the risk designations differ between the Environment Agency and the Technical Guidance to the National Planning Policy Framework, DCLG March 2012) and that the published flood map only relates to flooding from rivers, estuaries and the sea and does not include other potential sources such as surface water, groundwater, sewers, canals and reservoirs. Note also that the presence on the map of flood defences, or areas benefiting from flood defences, should not be taken to imply that a proposed development in these areas is acceptable, see Appendix E for details.

There are no records of prosecutions relating to authorised processes in the vicinity of the site.

There is no Local Authority Pollution Prevention and Controls, COMAH sites, NIHHS sites, explosive sites, or Planning Hazardous Substance consents or enforcements within 1km of the site.

There are a number of industrial processes operating in the surrounding area. However, as long as these have been operated in accordance with any applicable licence, no impact on the site is envisaged.

2.6 Natural Soil Chemistry

Information contained within the environmental data report (Appendix D) gives indicative natural concentration values (estimated) for the natural soils at the site for a selection of Contaminants of Potential Concern (CoPC). These have been reproduced in Table 2.8 below.

Table 2.8: Natural Soil Chemistry

CoPC	Estimated Concentrations (mg/kg)
Arsenic	18.9 – 25.8
Cadmium	0.85 – 1.2
Copper	97.6 - 248
Lead	402 - 986
Nickel	23.5 – 31.9

2.7 Radon

Reference to the *Indicative Atlas of Radon in England and Wales* (Miles *et a*l 2007) indicates that the site is not in a Radon Affected Area.

Reference to the Annex A maps in BR 211 (Scivyer 2007) indicates that no radon protection is required for new buildings at this location in line with current guidance.

2.8 BGS Borehole Archive

A number of borehole logs from the BGS archive have been obtained. These indicate:

Made Ground (comprising slightly sandy, slightly gravelly Clay, with occasional brick) is present to approximately 3.0m below ground level; over, London Clay Formation (slightly sandy clay).

3.0 PRELIMINARY CONCEPTUAL SITE MODEL

3.1 Preliminary Ground Model

The findings of the Phase 1 investigation indicate that the site comprises a residential building, with a garden and outbuilding to the rear.

A culvert is located approximately 280m to the east of the site, which provides drainage to the residential area. There are no other known surface water features within the vicinity of the site.

The natural soils comprise London Clay Formation (silty clay and clayey silt). Made Ground maybe present up to 3.0m thick.

There is 1 licensed groundwater abstraction within 1000m of the site. These all for spray irrigation and are located 800m to the south of the site.

The main details of the site and potential hazards are summarised on the Site Zonation Plan (Appendix A).

3.2 Preliminary Exposure Model

The preliminary exposure model is used for geo-environmental hazard identification and establishing potential contaminant linkages in line with the Statutory Guidance to Part 2A of the Environmental Protection Act 1990, also known as 'potential pollution linkages' in the Model Procedures of CLR11 (Environment Agency, 2004). This is based on the contaminant-pathway-receptor linkage approach.

3.2.1 Potential Contaminants

For the purpose of this assessment the potential contaminants have been separated according to whether they are likely to have originated from on-site or off-site sources.

Potential on-site sources of contamination

- Hydrocarbon fuels, lubricant and chlorinated solvents associated with the outhouse.
- Made Ground possibly including metals, metalloids, asbestos, PAH and petroleum hydrocarbons.
- Elevated metals within natural soils.

Potential off-site sources of contamination

- No potential off-site sources of contamination have been identified.

3.2.2 Potential Receptors

- Humans (neighbours, site end users).
- Development end use (buildings, utilities and landscaping).

It should be noted that health and safety risks to Contractors have not been assessed during these works and will need to be considered separately.

3.2.3 Potential Pathways

- Humans: ingestion, dermal contact, inhalation of dust and outdoor air;
- Buildings: methane ingress via permeable soils and/or construction gaps; and
- Plant life: root uptake.

3.2.4 Summary of Potential Contaminant Linkages

Table 3.1 lists the plausible contaminant linkages which have been identified. These are considered as potentially unacceptable risks in line with guidelines published in CLR 11 and additional risk assessment is required.

Linkages has been assessed in general accordance with guidance in CIRIA Report C552 (Rudland *et al* 2001) but with the addition of a 'no linkage' category. More details are given in Appendix E including descriptions of typical examples of probability and consequences.

It should be noted that whilst the risk assessment process undertaken in this report may identify potential risks to site demolition and redevelopment workers, consideration of occupational health and safety issues is beyond the scope of this report and need to be considered separately in the Construction Phase Health and Safety Plan.

Table 3.1: Exposure model – preliminary risk assessment of source-pathway-receptor contaminant linkages

Source(s)	Possible Pathway(s)	Receptor(s)	Probability	Consequence	Risk Level	Comments
Hydrocarbon fuels, lubricant and chlorinated solvents associated with the outhouse.	Ingestion, inhalation or dermal contact. Inhalation of fugitive dust. Root uptake.	End users of the site. Neighbours. Landscape planting.	Unlikely	Moderate	Low	Possible contaminants may be associated with the former outhouse as may have been used for maintenance.
Made Ground possibly including metals, metalloids, asbestos, PAH and petroleum hydrocarbons.	Ingestion, inhalation or dermal contact. Inhalation of fugitive dust. Root uptake.	End users of the site. Neighbours. Landscape planting.	Unlikely	Moderate	Low	Made Ground likely to be present on site due to the presence of development in the vicinity of the site.
Elevated metals within natural soils.	Ingestion, inhalation or dermal contact. Inhalation of fugitive dust. Root uptake.	End users of the site. Neighbours. Landscape planting.	Low-likelihood	Moderate	Low to Medium	Elevated lead and copper are identified as potential present.
Asbestos fibres from insulation or asbestos-containing materials in the Made Ground	Fugitive dust.	End users of the site.	Unlikely	Severe	Medium	Made Ground is of an unknown age therefore it is likely have developed prior to 1999.
		Neighbours.	Unlikely	Severe	Medium	

Asbestos fibres from insulation or asbestos-containing materials in the buildings.	Fugitive dust.	End users of the site.	Unlikely	Severe	Medium	Asbestos possible in old buildings. Asbestos survey and possible removal will be required. However, removal under controlled conditions should limit off-site emissions
		Neighbours.	Unlikely	Severe	Medium	
Elevated concentrations of ground gases (methane & carbon dioxide) from biodegradable matter in the Made Ground.	Migration through soils or groundwater to indoor air.	End users of new buildings (asphyxiation or explosion).	Unlikely	Medium	Low	Unknown quantities of Made Ground are likely to be present on-site so gas production is possible.
		New buildings (damage by explosion).	Unlikely	Medium	Low	
		Neighbouring properties (damage by explosion).	Unlikely	Medium	Low	

3.3 Geotechnical Hazard Identification

Potential geotechnical hazards based on the expected ground conditions are listed below:

- Uncontrolled Made Ground – excessive settlement (creep and inundation settlement or differential settlement of foundations and infrastructure elements.
- Attack of buried concrete by aggressive ground conditions – the development site may contain unknown Made Ground and potentially sulfate bearing soils.
- Shrink / swell of clay – settlement / heave of foundations when located within the influence of trees and vegetation.
- Low strength, compressible ground – excessive settlement of foundations and infrastructure elements is possible.

4.0 DESK STUDY CONCLUSIONS

Table 3.1 is a summary of the geo-environmental risks identified and the overall risk associated with the site has been designated using qualitative judgement according to the risk categories given in Table 4.1.

Based on historic land uses and its current operational use, the overall risk from land contamination at the site is considered to be **low to moderate** for the current development, and **low to moderate** for a redeveloped site, but would need to be confirmed by appropriate intrusive investigation, testing and assessment of the results of the investigation.

It is considered that it is unlikely that the site would be classified as Contaminated Land under Part 2A of the EPA 1990.

Table 4.1: Assessed Overall Risk Categories for the Site from Land Contamination

Risk Category	Definition
Very High Risk	A significant contaminant linkage, including actual evidence of significant harm or significant possibility and significant harm, is clearly identifiable at the site (e.g. from visual or documentary evidence) under current conditions, with potential for legal and/or financial consequences for the site owner or other Responsible Person. Remediation advisable based on acute impacts being likely. Immediate action should be considered.
High Risk	A contaminant linkage is identifiable at the site under current and future use conditions. Although likely, there is no obvious actual evidence of significant harm or significant possibility and significant harm under current conditions. Extent of risk is therefore subject to confirmation by investigation and risk assessment and most likely to be deemed significant. Realisation of the risk is likely to present a substantial liability to the site owner or other Responsible Person. Remediation required for redevelopment and may also be required under Part 2A for existing receptors.
Moderate Risk	A contaminant linkage is identifiable at the site under current and future use conditions. However, it is not likely to be a significant linkage under current conditions. It is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Actual extent of risk subject to confirmation by additional investigation and risk assessment and most likely to lie between no possibility of harm (under current conditions) and significant possibility of significant harm (under conditions created by new use). Remediation may be required for redevelopment.
Low Risk	Potential pathways and receptors exist but history of contaminative use or site conditions indicates that contamination is likely to be of limited extent and below the level of possibility of harm. It is unlikely that the site owner or other Responsible Person would face substantial liabilities from such a risk. Precautionary investigations and risk assessment advisable on change of use. Any subsequent remedial works are likely to be relatively limited.
Very Low Risk	No contaminant linkage likely to exist under current or future conditions, but this cannot be completely discounted. If harm is realised, it is likely at worst to be mild or minor. Site not capable of being determined under Part 2A (in accordance with PPS23) where the Local Authority inspects the site. No further action recommended.
No Risk	No contaminant linkage exists.

5.0 UNCERTAINTIES AND LIMITATIONS

5.1 General Comments

This report details the findings of work carried out in December 2013. The report has been prepared by Hydrock on the basis of available information obtained during the study period. Although every reasonable effort has been made to gather all relevant information, all potential environmental constraints or liabilities associated with the site may not have been revealed.

The report has been prepared for the exclusive benefit of Deloitte Real Estate Ltd and those parties designated by them for the purpose of providing geotechnical and geo-environmental recommendations for the site. The report contents should only be used in that context. Furthermore, new information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

Information provided by third parties has been used in good faith and is taken at face value; however, Hydrock cannot guarantee its accuracy or completeness.

The work has been carried out in general accordance with recognised best practice as detailed in guidance documents such as the CLR 11 Model Procedures (Environment Agency 2004), BS5930:1999 +A2:2010 and BS10175:2011.

The rationale behind the assessments carried out for this report is given in Appendix E.

Unless otherwise stated, no assessment has been made for the presence of radioactive substances or unexploded ordnance.

Where the phrase “suitable for use” is used in this report, it is in keeping with the terminology used in planning control and does not imply any specific warranty or guarantee offered by Hydrock.

Unless otherwise stated, the chemical testing carried out for this report was not scoped to comply with the requirements of the water supply company and further work may be required.

The preliminary risk assessment process may identify potential risks to site demolition and redevelopment workers. However, consideration of occupational health and safety issues is beyond the scope of this report.

Please note that notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds such as Japanese knotweed, this report does not constitute a formal survey of these potential hazards.

Any site boundary line depicted on plans does not imply legal ownership of land.

6.0 RECOMMENDATIONS FOR FURTHER WORK

In order to confirm the actual risks to receptors and confirm the ground conditions with respect to potential geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken. Based on the current data, this site investigation is proposed to comprise:

- trial pitting to allow collection of samples for geotechnical and chemical analysis of shallow soils, to test ground stability, overdig potential and to allow for foundation designs.
- shell and auger boreholes to allow collection of samples for geotechnical and chemical analysis of deeper soils to allow in-situ testing (SPTs) to be undertaken to assess shear strength of the clays for potential pile design, and allow the installation of gas and groundwater monitoring wells;
- gas and groundwater monitoring installations to allow gas concentrations and groundwater levels to be monitored;
- gas concentration and groundwater level monitoring;
- foundation depth due to trees assessment;
- geotechnical testing of soils; and
- contamination analyses of soil and groundwater.

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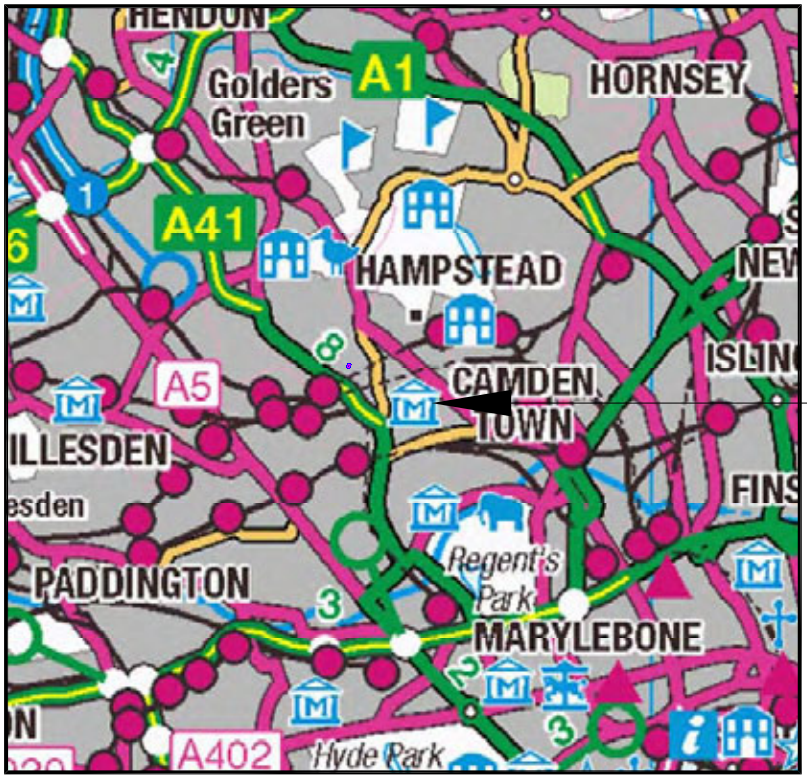
APPENDICES

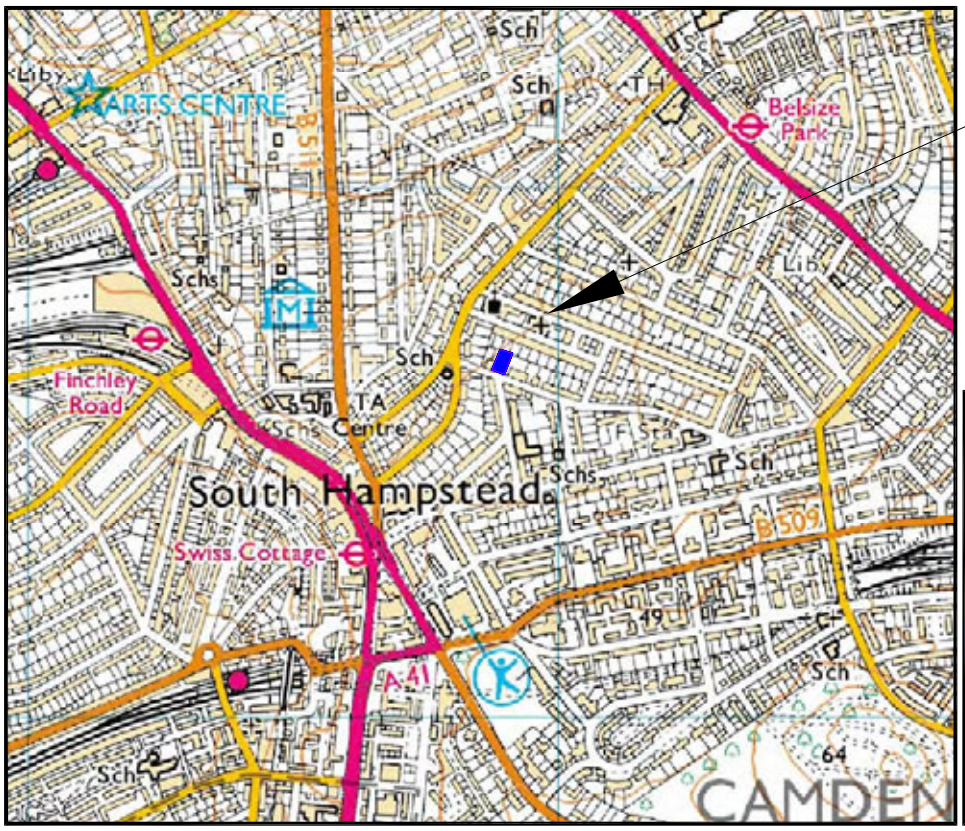
Appendix A

DRAWINGS

Drawings Included in this report:

- 13868/001 – Site Location Plan
- 13868/002 – Site Features Plan





Project: Clifford Pugh House, Lancaster Grove

Client: Deloitte Real Estate

Drawing Status: INFORMATION

Title: Site Location Plan

Job No.: C/13868

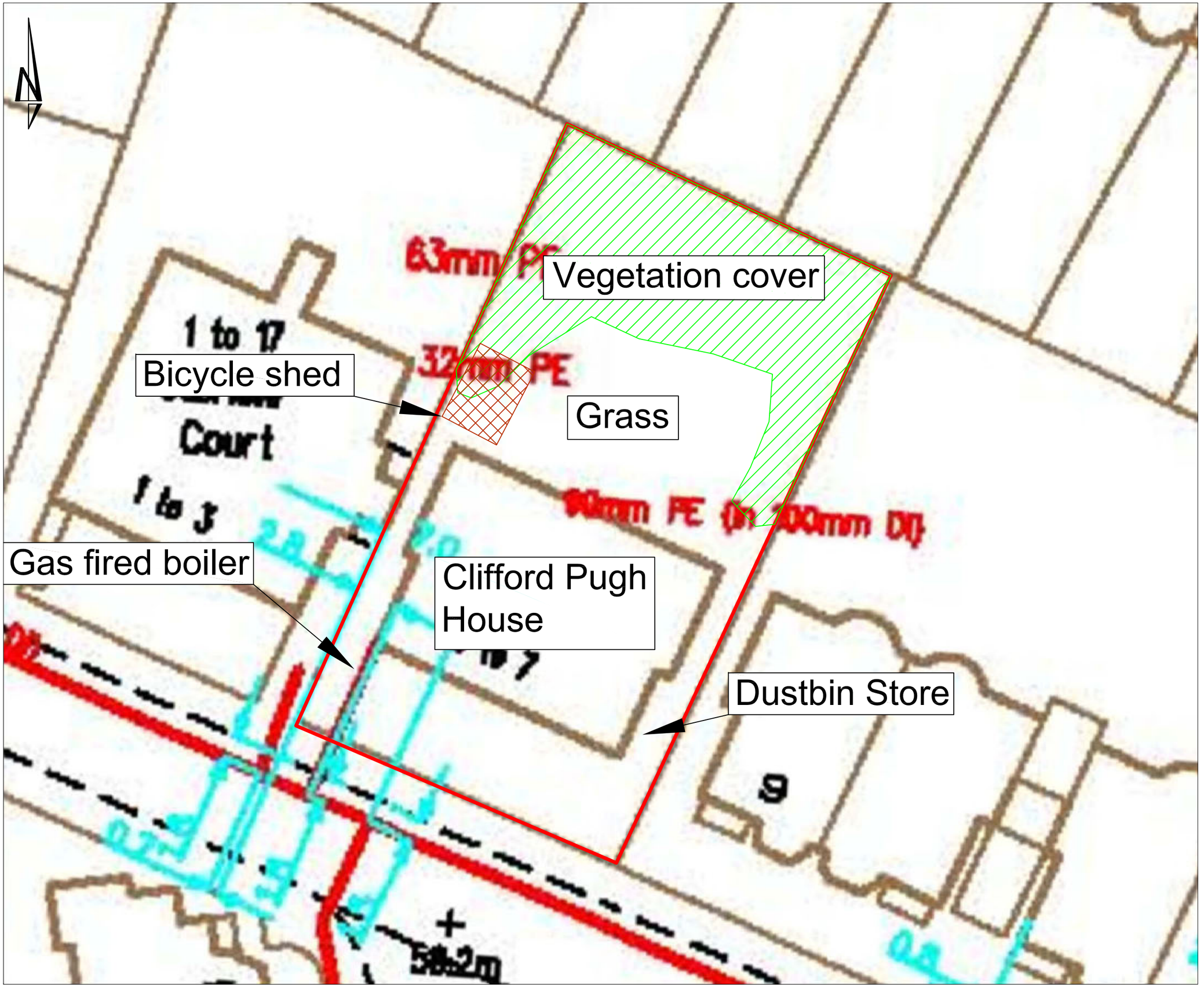
Hydrock
Unit 3, Hawthorn Park
Holdenby Road
Spratton
Northampton NN6 8LD
TEL: 01604 842 888
FAX: 01604 842 666
E-Mail: northampton@hydrock.com
or visit www.hydrock.com

Rev	Date	Description	By	Ckd

Drawn	Checked	Scale at A4	Date	Issue Date
AL	AB	AS SHOWN	16/12/13	16/12/13

Drawing No.: 13868/D001

Revision: -



Notes:

1. Do you have a north arrow? Notes in lower case!!!

Rev	Date	Description	Ckd	By

Hydrock

Unit 3, Hawthorn Park
Holdenby Road
Spratton
Northampton NN6 8LD
TEL: 01604 842 888
FAX: 01604 842 666
E-Mail: northampton@hydrock.com
or visit www.hydrock.com

Client
Deloitte Real Estate

Project
Clifford Pugh House

Title
Site Features Plan

Drawing Status
INFORMATION

Job No.
C/13868

Drawn	Checked	Scale at A3	Date	Issue Date
DM	AL	NTS	17/12/13	17/12/13

Drawing No.
13868/D002

Revision
-

Appendix B

SITE WALKOVER PHOTOGRAPHS

Figure 1: View of the building from Lancaster Grove.

Figure 2: View of the dustbin store in the west of the site.

Figure 3: Internal cracking of the southern wall on the third floor

Figure 4: Internal cracking of the northern wall on the second floor.

Figure 5: View along the western boundary to the south.

Figure 6: View of the bike shed and shed in the east of the site.

Figure 7: View of the eastern boundary from the north of the site.

Figure 8: View of the western boundary of the site from the north.

Appendix C

HISTORICAL ORDNANCE SURVEY MAPS

GroundSure
ENVIRONMENTAL INSIGHT

Site Details:

UNIVERSITY COLLEGE HOSPITAL,CLIFFORD PUGH HOUSE 5-7,LANCASTER GROVE,LONDON, NW3 4HE

Client Ref: PO N5092 / C13868
Report Ref: HYD-1205803
Grid Ref: 526895, 184672

Map Name: National Grid

Map date: **2012**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Ordnance Survey Licensed Partner

Produced by
GroundSure Environmental Insight
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 05 December 2013

To view map legend click here *Legend*

GroundSure
ENVIRONMENTAL INSIGHT

Site Details:

UNIVERSITY COLLEGE HOSPITAL,CLIFFORD PUGH HOUSE 5-7,LANCASTER GROVE,LONDON, NW3 4HE

Client Ref: PO N5092 / C13868
Report Ref: HYD-1205803
Grid Ref: 526895, 184672

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Ordnance Survey Licensed Partner

Produced by
GroundSure Environmental Insight
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 05 December 2013

To view map legend click here *Legend*

GroundSure
ENVIRONMENTAL INSIGHT

Site Details:

UNIVERSITY COLLEGE HOSPITAL,CLIFFORD PUGH HOUSE 5-7,LANCASTER GROVE,LONDON, NW3 4HE

Client Ref: PO N5092 / C13868
Report Ref: HYD-1205803
Grid Ref: 526895, 184672

Map Name: National Grid

Map date: **1973-1974**

Scale: 1:10,000

Printed at: 1:10,000

Ordnance Survey Licensed Partner

Produced by
GroundSure Environmental Insight
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 05 December 2013

To view map legend click here *Legend*

Site Details:

UNIVERSITY COLLEGE HOSPITAL,CLIFFORD PUGH HOUSE 5-7,LANCASTER GROVE,LONDON, NW3 4HE

Client Ref: PO N5092 / C13868
Report Ref: HYD-1205803
Grid Ref: 526895, 184672

Map Name: Provisional

Map date: **1965-1968**

Scale: 1:10,560

Printed at: 1:10,560

Ordnance Survey Licensed Partner

Produced by
GroundSure Environmental Insight
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 05 December 2013

To view map legend click here *Legend*