

Preliminary Risk Assessment

Chestnut's Park

M01600-11G_ENV02 | July 2023

DOCUMENT CONTROL

DOCUMENT FILENAME	M01600-11G_CHESTNUTS PARK_PRA_Env02
DOCUMENT REFERENCE	M01600-11G_ENV01
TITLE	Preliminary Risk Assessment
CLIENT	Haringey Council
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REVISION HISTORY

Rev. Ref.	Date	Prep	Chk	App	Amendments	Reason for Issue
0	27/07/2023	EG	RT	RT	Original	For Planning
1	28/07/2023	RT	RT	RT	Drawings	For Planning

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Recipient	Revision					
	0	1	2	3	4	5
FILE	✓	✓				
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1 INTRODUCTION

1.1 Terms of Reference

This Preliminary Risk Assessment report was commissioned by Haringey Council to supplement a planning application for a proposed development on lands at Chestnut's Park.

1.2 Objectives

The Preliminary Risk Assessment (PRA) provides a qualitative assessment of the contamination status of the site and identifies any potential pollutant linkages and the potential risks these may pose to sensitive receptors, both human health and environmental.

1.3 Statement of Authority

This assessment has been prepared and reviewed by qualified professionals with appropriate experience. The key staff members involved in this project are as follows:

- Erin Galbraith BSc (Hons) MSc *MIEnvSoc* – Project Environmental Engineer / Geo-environmental Consultant experienced in contaminated land risk assessments, geo-environmental investigations, and groundwater assessments.
- Richard Thompson BSc *PGeo EurGeol* – Principal Geologist/Environmental Engineer experienced in a wide range of environmental management and risk assessment experience, including hydrogeological modelling geochemistry expertise in subsurface contamination investigations, and contaminated land assessment and remediation.

1.4 Procedure

This assessment has been undertaken in accordance with the published Land Contamination Risk Management guidance (EA, 2020 – updated July 2023) (“LCRM”), with consideration of GLPC: Managing and Reducing Land Contamination – Guidance Principals¹. This guidance has recently replaced the ‘Model Procedures for the Management of Land Contamination’ (CLR11, Environment Agency, 2004)², which was the recommended technical guidance and procedure within England.

1.5 Scope of Works

The scope of works for the assessment include:

- Collate information on the site setting and previous land use;
- Develop an initial Conceptual Site Model (iCSM) to identify any potential pollutant linkages and identify whether potential unacceptable risks are likely to exist; and
- Provide recommendations for further work, where uncertainties or unacceptable risks are identified.

¹ Environment Agency (2016). Managing and Reducing Land Contamination: Guiding Principals (GLPC). Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/297454/geho1109brgz-e-e.pdf

² Environment Agency (2004). Model Procedures for the Management of Land Contamination (CLR11). DAERA (2016) Available from: <https://www.daera-ni.gov.uk/articles/contaminated-land>.

2 SITE DETAILS

2.1 Site Location

The site (coordinates 532450, 188841) is located at Chestnut's Park, off St Ann's Road in South Tottenham. The site boundary occupies an area of c.2.2ha. A site location map is provided in Appendix A.

2.2 Site Description

A walkover survey of the site was carried out on 12th to 14th June 2023. Photos of the site walkover are included in Appendix B. A description of the site, and observations made during the site walkover survey, are presented in Table 2-1 below.

Table 2-1: Site Description and Survey Observations

Feature	Description
Site Description	
Site access	The site entrance can be accessed from St Ann's Road with pedestrian access from La Rose Lane and Cornwall Road.
Ground levels / Topography	The site slopes from c.16.3mOD in the southern portion to c.1.4.0mOD in the northern portion.
Ground cover	Ground cover mainly comprises soft landscaping, shrubs and trees.
Built Development	The site currently comprises a recreational park with associated pedestrian pathways and soft landscaping.
Survey Observations	
Fuel / oil tank storage	None identified.
Potentially hazardous materials storage and use	None identified.
Electricity sub-stations	None identified.
Evidence of possible land contamination on site	None identified.
Surrounding Land Use	
North	Residential properties, Falmer Road and Clarence Road immediately bounds the site to the north, with lands beyond mainly comprising residential properties, with Cranleigh Garage identified c. 40m northwest of the site.
East	The remainder of Chestnut's Park is to the immediate east comprising Chestnut's Café, Chestnut's Community Centre and recreational facilities including an outdoor gym, a children's playpark, tennis courts and football pitches. Residential properties and Cornwall Road are beyond, with a number of commercial office developments also beyond, including Tottenham Chiropody Clinic with St Ann's CE Primary School and St Ann's Church beyond.
South	St Ann's Road bounded the site to the immediate south with lands beyond mainly comprising residential properties with several commercial outlets, including Moorfields Eye Hospital, a children's club, Whittington Health Dental Services, and a number of office premises.
West	La Rose Lane immediately bounds the site to the west with numerous residential properties and Chestnut's Primary School beyond.

2.3 Proposed Development

The development proposal includes a Sustainable Drainage System (SUDs) comprising the addition of native mixed hedgerows, wildflower, modified and neutral grasslands, wetlands and shallow scrapes and the addition of a play tree structure with wildflower meadow with associated viewing areas, pedestrian access paths and ramped access paths.

The proposed development plans are provided in Appendix C.

3 SITE SETTING

3.1 Ground Conditions

3.1.1 Published Superficial Deposits

A review of the online data available on the British Geological Survey (BGS) Onshore GeoIndex³ (1:50,000 and 625:000 scale) mapping returned no information on the published superficial deposits underlying the site.

3.1.2 Published Bedrock Geology

A review of the online data available on the British Geological Survey (BGS) Onshore GeoIndex⁴ (1:50,000 scale) mapping indicates that the site is underlain by Palaeogene London Clay Formation comprising sedimentary rocks of marine origin. They are detrital and comprise coarse to fine-grained slurries of debris from the continental shelf flowing into a deep-sea environment, forming distinctly graded beds of primarily mud and sand.

3.1.3 Radon

A review of the UK Radon Maps⁵ determined that the site is located within a radon probability area of <1% radon probability.

3.2 Borehole and Site Investigations

3.2.1 BGS Boreholes

A review of the British Geological Survey (BGS) Onshore Index (1:50,000 scale) showed no boreholes on site and showed 22no. boreholes registered within 250m of the site boundary. The boreholes are of varying depth with the greatest depth (154mbgl), with no information about bedrock or water strikes recorded.

3.2.2 Site Investigations

A site investigation was previously completed on site by DGL Testing Services Ltd on 8th June 2022 and comprised the excavation of 7no. trial pits to a total depth of 1.5mbgl. 2no. trial pits were located within the site boundary, TH6 located in the central portion and TH7 located in the northern portion of the site but with no individual logs included in the report. The ground conditions encountered mainly comprised topsoil/loam material and a lower layer of an atypical London clay. The topsoil was recorded to c.30-40cm with clay below to c.1.5m. Clay was recorded as tacky and cohesive on removal.

A copy of the Geological Report is provided in Appendix D.

3.3 Hydrogeology

3.3.1 Aquifer Characteristics and Vulnerability

A review of the online data available by Magic Maps by DEFRA⁶ (1:50,000 scale) indicates that the bedrock aquifer is classified as 'Unproductive'.

A review of the online data available online by Magic Maps by DEFRA (1:50,000 scale) indicates that a 'Unproductive' (Superficial Drift) aquifer is underlying the site.

³ British Geological Survey (2020). Onshore GeoIndex https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.15193718.1996542549.1603277178-1750727727.1600356602

⁴ British Geological Survey (2020). Onshore GeoIndex https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.15193718.1996542549.1603277178-1750727727.1600356602

⁵ Public Health England UK Maps of Radon. Available from: <http://www.ukradon.org/information/ukmaps>

⁶ Magic Map Application (defra.gov.uk)

3.3.2 Groundwater Vulnerability

A review of the online data available by Magic Maps by DEFRA (1:50,000 scale) indicates that the groundwater vulnerability of the area is classified as 'Unproductive'.

3.3.3 Groundwater Abstractions

The following regulatory bodies and publicly available databases were consulted for information on groundwater abstractions within 2 km of the site:

- BGS GeoIndex – Water Wells dataset for information on any groundwater abstractions;

A review of the online data available by BGS GeoIndex – Water Wells database returned 41no. records of groundwater abstractions within 2km of the site; the details are provided in Table 3-1 below.

Table 3-1: Registered Water Wells within 2km

Abstraction Reference	Year	Depth (m)	Aquifer	Distance & Direction from Site
TQ38/6	1937	152.4	Chalk Group	c.0.11km E
TQ38/8	-	-	Unknown	0.84km E
TQ38/27	1903	137.2	Chalk Group	c.0.94km E
TQ38/26	1900	138.1	Chalk Group	c.1.11km NE
TQ38/29B	1929	137.2	Chalk Group	c.1.75km NE
TQ38/29A	1928	137.2	Chalk Group	c.1.78km NE
TQ38/30	-	5.9	Superficial Deposits	c.1.87km NE
TQ38/32	1852	77.1	Chalk Group	c.1.9km NE
TQ38/36	1952	33.5	London Clay Formation	c.1.73km E
TQ38/28	1952	36.9	No Aquifer	c.1.4km SE
TQ38/665	2012	130	Unknown	c.1.67km SE
TQ38/676	2015	120	Chalk Group	c.1.86km SE
TQ38/516A	1992	128	Chalk Group	c.0.75m S
TQ38/516B	1992	130	Chalk Group	c.0.75m S
TQ38/516C	1992	19.4	Chalk Group	c.0.75m S
TQ38/505A	1984	135	Chalk Group	c.1.0km S
TQ38/505B	1984	135	Chalk Group	c.1.12 km S
TQ38/656	2011	120.7	Chalk Group	c.1.16km S
TQ38/504A	1984	130	Chalk Group	c.1.26km S
TQ38/504D	1984	-	Lower London Tertiaries	c.1.3km S
TQ38/502A	1984	123	Chalk Group	c.1.69km S

Abstraction Reference	Year	Depth (m)	Aquifer	Distance & Direction from Site
TQ38/502B	1981	125	Chalk Group	c.1.74km S
TQ38/502C	1984	54.2	Lower London Tertiaries	c.1.81km S
TQ38/553	2003	112	Chalk Group	c.1.81km S
TQ38/546	2002	130	Chalk Group	c.0.87km SW
TQ38/462	-	137	Chalk Group	c.0.78km SW
TQ38/5	1934	139	Chalk Group	c.0.81km SW
TQ38/517B	1992	132	Chalk Group	c.1.0km SW
TQ38/517C	1992	21	Chalk Group	c.1.0km SW
TQ38/517A	1992	130	Chalk Group	c.1.0km SW
TQ34/4	-	-	Unknown	c.2.0km SW
TQ38/24	1889	76.2	Chalk Group	c.1.73km NW
TQ38/2G	1992	109	Chalk Group	c.1.65km NW
TQ38/2H	1992	100	Chalk Group	c.1.68km NW
TQ38/2E	1992	100	Chalk Group	c.1.79km NW
TQ38/2D	1986	104	Chalk Group	c.1.85km NW
TQ38/548	2003	81	Chalk Group	c.1.86km NW
TQ38/549	2003	50	Thanet Sand Formation	c.1.86km NW
TQ38/2J	1993	112	Chalk Group	c.1.98km NW
TQ38/23	1898	152.4	Chalk Group	c.1.62km NW
TQ38/22	1915	91.4	Chalk Group	c.1.79km NW

3.3.4 [Groundwater Flow](#)

The groundwater is assumed to flow in a generally north/north-easterly direction, congruent with hydrogeology and surface topography.

3.3.5 [Source Protection Zones \(SPZs\)](#)

The Environment Agency Source Protection Zones (SPZs) have three subdivisions and bespoke SPZs are defined for all major abstraction sources (boreholes and springs) intended for human consumption or food use. These sub-divisions are defined as follows:

SPZ1 – Inner Protection Zone - defined as the 50-day travel time from any point below the water table to the abstraction source. This zone has a minimum radius of 50 metres.

SPZ2 – Outer Protection Zone - defined by a 400-day travel time from a point below the water table. This zone has a minimum radius of 250 or 500 metres around the abstraction source, depending on the size of the abstraction.

SPZ3 – Source Catchment Protection Zone - defined as the area around an abstraction source within which all groundwater recharge is presumed to be discharged at the abstraction source.

Source Protection Zones are not statutory designations, however, SPZ 1 has been included in statutory guidance as the minimum area under the Groundwater Directive (80/68/EEC) that is identified for the protection of drinking-water sources and is also recognised as an exclusion zone for certain potentially polluting activities listed in the Environmental Permitting Regulations.

A review of the online data available online by Magic Maps by DEFRA (1:50,000 scale) identified that the site is located within an Environment Agency SPZ 2.

3.4 Hydrology

3.4.1 Watercourses

The nearest watercourse to the site is the culverted Moselle Brook and is located c.800m north of the site, and flows in a generally easterly direction, before discharging into Lockwood Reservoir, located c.2.6km east of the site. There is a 1800mm culverted sewer drain located along the eastern boundary of the site, running south to north.

A review of the data available online at the UK Rivers Map⁷ indicates that the site is within the Lee Lower Rivers and Lakes Operational Catchment, and the London Management Catchment. The watercourse is within the Lee (Tottenham Locks to Bow Locks/Three Mills Lock) Waterbody, which received 'Bad' status in 2015 due to pollution from wastewater.

3.5 Designated Sites and Sites of Environmental Interest

Environmental receptors sensitive to change in the water environment such as Special Protected Areas (SPA), Areas of Special Scientific Interest (ASSI), and RAMSAR sites have been considered within this assessment.

A review of Magic Maps by DEFRA indicates that 3no. designated sites or sites of environmental interest were recorded within 5km; the details are described in Table 3-2.

Table 3-2: Designated Sites and Sites of Environmental Interest within 5km

Designated Site Name	Type	Location from Site
Lee Valley	Ramsar / SPA	c.1.8km E
Walthamstow Reservoirs	SSSI	c.1.8km SE
Walthamstow Marshes	SSSI	c.2.4km SE

3.6 Historical Mapping

A historical review of the site and its surrounding area (250 m) was undertaken. The review incorporated the following sources:

- National Library of Scotland - County Series Historical Maps⁸
- Publicly available Aerial Orthophotography available via Google Earth.

⁷ UK Rivers Map | WWF

⁸ <https://maps.nls.uk/os/index.html>

Key points related to the onsite and off-site (250m) lands relevant to this assessment are included below with regard to potential contamination sources and land uses.

3.6.1 On-Site Historical Records

A review of the historical mapping found Stonebridge Brook traversing the northern portion of the site, flowing in a westerly direction before meandering south and traversing the western portion of the site; and La Rose Lane (formerly Black Boy Lane) traversing the northwestern and western portion of the site, on the OS Six Inch: 1881 – 1913. These features no longer recorded on the OS 1:25,000: 1937 – 61 historical map.

There are no records of any other potential contamination sources and land uses within the site boundary.

3.6.2 Off-Site Historical Records

- OS Six Inch: 1881 – 1913 – Railway line recorded c.250m N, and c.300m S of the site, fever hospital recorded c.100m S of the site, and the general surrounding vicinity occupied by residential properties and agricultural buildings with associated access roads.
- OS 1:25,000: 1937 – 61 – Chimney recorded c.250m S of the site and extensive development of residential properties in the immediate vicinity.
- OS 1:1,250/1:2,500: 1944 – 1972 – Woodland's Park Primary School recorded to the immediate W of the site, engineering works recorded c.165m E of the site, clinics recorded c.100m and c.270m to the E, Bedstead Factory recorded c.230m E of the site, Oceana Laundry recorded c.210m SE of the site, police station recorded c.215m to the SE, and St Ann's Works (plastic mouldings) recorded c.160m SW.
- Google Earth Aerial - 1945 – 2023 – No significant changes concerning potential contamination sources in the surrounding areas.

4 PRELIMINARY CONCEPTUAL MODEL

For a risk of pollution or environmental harm to occur as a result of ground contamination, all of the following elements must be present:

- A source, i.e. a substance that is capable of causing pollution or harm;
- A receptor, i.e. something which could be adversely affected by the contaminant; and
- A pathway, i.e. a route by which the contaminant can reach the receptor.

Each of these elements can exist independently, but when they are all present and linked together, they create a risk. If one of the above elements is missing, there is no risk.

When a source-pathway-receptor linkage is present the risk is a function of the magnitude and mobility of the source, the sensitivity of the receptor, and the nature of the pathway.

This section presents a preliminary conceptual model by presenting the potential sources, pathways, and receptors and identifying plausible pollutant linkages.

4.1 Potential Contamination Sources

4.1.1 Onsite

No potentially contaminative land uses have been identified presently on-site or historically on-site.

4.1.2 Offsite

Historical mapping has identified a number of potentially contaminative land uses in the surrounding area, including a railway line recorded c.250m N and c.300m S of the site and a fever hospital recorded c.100m S of the site (1881-1913); a chimney recorded c.250m S of the site (1937 – 1961); and, an engineering works recorded c.165m E of the site, clinics recorded c.100m and 270m E of the site, Bedstead Factory recorded c.230m E of the site, Oceana Laundry recorded c.210m SE of the site, a police station recorded c.215m to the SE and St Ann's Works (plastic moulders) recorded c.160m W of the site (1944-1972).

Current mapping shows Cranleigh Garage identified c. 40m northwest of the site.

4.2 Potential Pathways

Pathways are the means by which a contaminant can reach a receptor. Active pathways are primarily dependent on the physical characteristics of the site and the surrounding area between source and receptor. The nature of the site surface affects the potential for surface waters to infiltrate and penetrate the subsurface. The potential for infiltration will in turn affect the potential for leachate generation from potentially impacted vadose (unsaturated) zone soils.

The key pathways and exposure routes by which potentially contaminative substances can reach receptors are considered to be:

- Direct contact with soil and groundwater;
- Ingestion of soil and groundwater;
- Inhalation of fugitive dust;
- Inhalation of ground gas / vapours to the proposed dwellings and buildings;
- Leaching of potential contaminants from soil to shallow groundwater; and
- Lateral and vertical migration of dissolved and free phase contaminants via groundwater.

4.3 Receptors

Receptors are defined by their potential for being adversely affected by a contaminant. Receptors can be grouped into those that impact human health, and those that impact environmental receptors, such as controlled waters.

Human health receptors identified include:

- Future site end-users.

Environmental receptors identified include:

- Groundwater contained within the superficial and bedrock aquifers; and
- The downgradient surface water environment.

Construction workers are not considered as a potential receptor in the conceptual model as personal protective equipment and procedures to ensure adherence to best practice guidelines during construction will limit exposure to potential contamination.

4.4 Conceptual Model

4.4.1 Methodology

The above information has been used to compile an initial conceptual site model.

Where a complete pollutant linkage is identified, it is included in the conceptual site model table (CSM), and an estimated risk is assigned to each complete linkage. For a pollutant linkage to exist there has to be a viable pathway between a potential source and receptor (human health or environmental).

If there is no viable pathway linking a potential source to a receptor, it is not included in the below table as, by definition, the potential source poses no risk.

The classification methodology used to categorise the risk associated with complete pollutant linkages is provided at Appendix E. The risk categorisation is based on LCRM and considers the guidance laid out in CIRIA C552 and C665.

4.4.2 Pollutant Linkage Discussion

Risk to human health (site end users) from onsite sources

No records of potentially contaminative land uses were identified within the site boundary.

Risk to the environment (controlled waters) from onsite sources

No records of potentially contaminative land uses were identified within the site boundary.

Risk to human health from offsite sources (site end users)

Historical mapping has identified a number of potentially contaminative land uses in the surrounding area, including a railway line recorded c.250m N and c.300m S of the site and a fever hospital recorded c.100m S of the site (1881-1913); a chimney recorded c.250m S of the site (1937 – 1961); and, an engineering works recorded c.165m E of the site, clinics recorded c.100m and 270m E of the site, Bedstead Factory recorded c.230m E of the site, Oceana Laundry recorded c.210m SE of the site, a police station recorded c.215m to the SE and St Ann's Works (plastic moulders) recorded c.160m W of the site (1944-1972).

Due to the distance or upgradient location from the site, and/or time accrued since the previous land use was active, it is not considered a potential contamination risk and is no longer addressed within this assessment.

Current mapping shows Cranleigh Garage identified c. 40m northwest of the site, which is at an elevation of c.14.6mOD, which is at the same elevation or upgradient than the northern portion of the site (ranging from c.14.6mOD to 14.3mOD). Due to the gradient and proximity to the site, it is possible that spilling and/or leaching of contaminants containing heavy metals, TPHs, BTEX and PAHs may have occurred and caused horizontal migration of contaminants from soils to shallow groundwater. Providing a pathway for potential risk of reduced quality groundwater to site end users. However, based on the site investigation trial pits onsite (and east adjacent), any potential contamination would migrate along the gradient of the confining clay layer, with little permeability to groundwater below 0.4mbgl (the base of the topsoil/loam material). Thereby, any potential contamination from this source would be potentially limited to the top 0.4m below the surface if migrating to the northern portion of the site. In addition, the site end users will

not have any direct contact with the groundwater or plant uptake onsite based off the proposed development plans, therefore no complete pollutant linkage exists.

4.5 Summary of Preliminary Conceptual Model

Following a review of all potential sources, pathways, and receptors, it is concluded that no complete pollutant linkages exist, and the site is deemed suitable for the proposed development.

5 SUMMARY OF FINDINGS AND RECOMMENDATIONS

5.1 Summary of Findings

The site (coordinates 532450, 188841) is located at Chestnut's Park, off St Ann's Road in South Tottenham. The site boundary occupies an area of c.2.2ha.

The development proposal includes a Sustainable Drainage System (SUDs) comprising the addition of native mixed hedgerows, wildflower, modified and neutral grasslands, wetlands and shallow scrapes and the addition of a play tree structure with wildflower meadow with associated viewing areas, pedestrian access paths and ramped access paths.

Potential offsite and onsite sources of contamination were identified, and no viable pathways between these sources and human health / controlled waters were identified.

Based on the findings of the initial conceptual site model, there are no unacceptable risks to the environment and/ or human health and therefore, the site is deemed suitable for use.

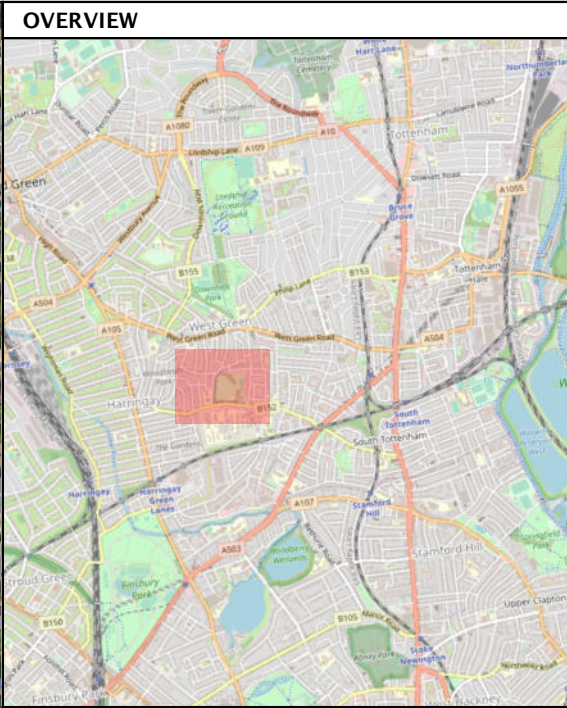
5.2 Residual Risks

5.2.1 Unexpected Contamination

It is anticipated the Planning Authority may require a related (standard) planning condition, i.e., during development works should evidence of contamination be encountered, works should cease, and the Planning Authority shall be notified immediately. Any intrusive investigation, remediation and verification undertaken on the identified area would be required to be recorded and completed to the satisfaction of the Planning Authority and in accordance with LCRM.

Appendix A

Site Location Plan



LEGEND

 Site Boundary

M^cCloy Consulting Mossley Mill, Lower ground (West), Carnmoney Road North, Newtownabbey, BT36 5QA T: 028 9084 8694 E: info@mccloyconsulting.com W: www.mccloyconsulting.com		DESCRIPTION			
		Site Location Plan			
		PROJECT / FIGURE NO.			
		M01600-11G Chestnut's Park, South Tottenham			
		DRAWN BY	SCALE	REVISION	DATE
		EG	AS SHOWN	00	26/07/2023
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		BACKGROUND MAP CONTAINS OS DATA © CROWN COPYRIGHT (2023)			

Appendix B

Site Walkover Photos and Map

Photo 1:
View of the site
west looking
northeast



Photo 2:
View of the site
looking south.



Appendix C

Proposed Development Plan



Existing view



Proposed view

Rev	Description	Checked	Approved	Date
Author	ST		Drafting Check	
Designer	SWG		Design Check	



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Client	HARINGEY COUNCIL
Project	CHESTNUTS PARK FLOOD ALLEVIATION
Status	PRELIMINARY

Drawing Title	ILLUSTRATIVE MONTAGE VIEW 3
Drawing No.	12609983-GHD-XX-XX-DRG-LA-00011

Size	A3
Rev	P01



Existing view



Proposed view

Rev	Description	Checked	Approved	Date
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Client	HARINGEY COUNCIL
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Status	PRELIMINARY

Drawing Title	ILLUSTRATIVE MONTAGE VIEW 4
Drawing No.	12609983-GHD-XX-XX-DRG-LA-00012

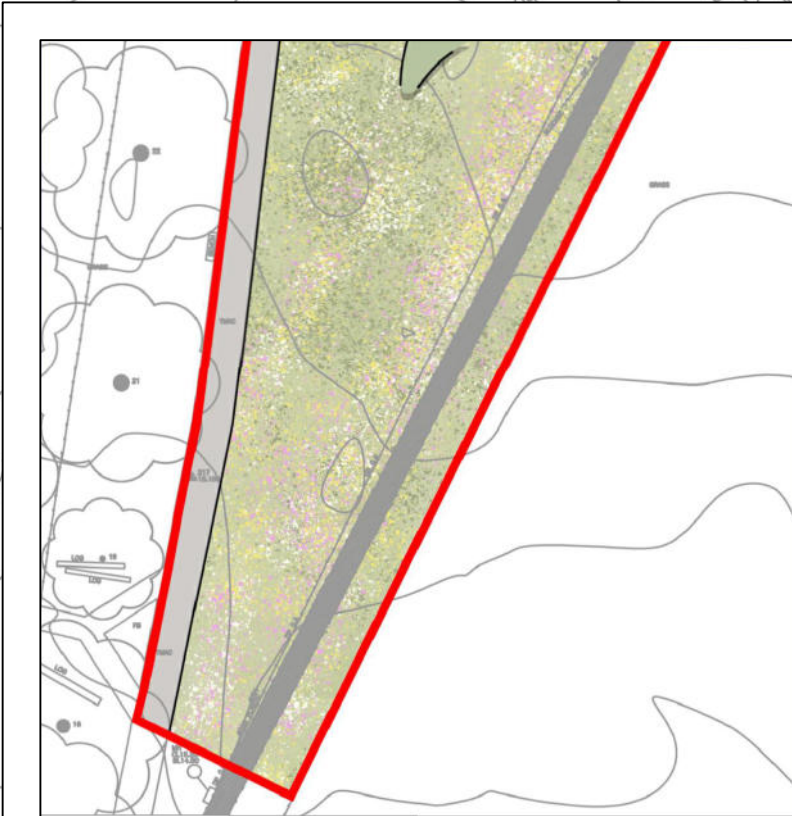
Size	A3
Rev	P01



Key

- Application boundary
- Existing drainage infrastructure culvert
- Existing trees to be retained / protected during works
- Wildflower conservation grassland
- Modified grassland
- Neutral grassland
- Wetland reedbed / sedge planting
- Wetland
- Low flow channel
- Shallow scrapes
- Native mixed hedgerow
- Information / interpretation board
- Play tree structure within wildflower meadow
- Viewing platform / area
- Log seating amphitheatre

NOTE:
Cross reference with drawing 00016 the Landscape Cross Sections and Landscape Seeding and Planting Palette within the DAS.



P02		P01 FOR COMMENT		SWG	SWG	04/07/2023
Rev	Description	Checked	Approved	Date		
Author	ST	Drafting Check	ST			
Designer	SWG	Design Check	SWG			

Haringey
LONDON

GHD Xref GHD_G_1032.dwg

Xref ghd_g_1031.dwg

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Project No. 12609983

Client **HARINGEY COUNCIL**

Project **CHESTNUTS PARK FLOOD ALLEVIATION**

Status **FOR COMMENT** Status Code **S3**

Drawing Title **LANDSCAPE PROPOSALS PLAN** Size **A3**

12609983-GHD-XX-XX-DRG-LA-00014

Rev **P02**

Appendix D

Geological Report

Site investigation surface excavation Geological Report

TEST REPORT NUMBER : DGL4843S-GR

CLIENT: Marlborough Surfacing	SAMPLE NUMBER : 4843S-GR
SITE / SCHEME: Chestnut Park, St Annes Rd B152, N15 3AQ	
LOCATION: Chestnut Park N15 3AQ	JOB No.: MH01/6530
SPECIFICATION: SHW Series 600	CLASS: 2
DESCRIPTION : Brown and grey clay	
SUPPLIER: Site won	SOURCE: Site won
DATE SAMPLED: 08/06/2022	SAMPLED BY: KE
SAMPLE TYPE: undisturbed	SITE / CLIENT REF: TH/5-7
DATE RECEIVED: 08/06/2022	DATE TESTED: 08/06/2022
WEATHER: Sunny/ Overcast	

TESTING AND SAMPLING:	
For each of the locations designated as TH5, TH6 and TH7.	
DGL4843S	DCP carried out
DGL4844S	Shear vane testing
Trench dug out and samples taken for each exposed layer to 0.5m and then to a total depth of 1.5m	
DGL4845S	Moisture contents and WAC testing conducted on the samples as indicated by the client.

Observations and Images:

Test locations indicated by the client

Locations
for the
excavations



Legend:
LD-TH1- Trial hole at Land Drainage
TH2- Trial Hole
Note:
To Be Read In conjunction with Site Investigation Specification

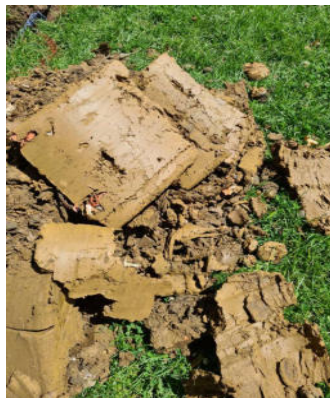
[Chestnut Park Site Investigation requirements](#)
[Sketch M01600-11-5101-1](#)
[PD-20-04-2022](#)

TH5





TH6



TH7



Observations:

All three excavations exhibit 2 layers; one of a top soil/ loam material and a lower layer of an atypical London clay. The depth of top soil across the three areas is approximately 30 to 40 cm with the clay then below this to approximately 1.5m. The clay material has a low number of blows for the DCP determinations. Clay was very tacky and cohesive on removal.

REMARKS:

All samples and testing on site carried out on the same day.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

All bulk samples retained for 28 days from report date unless otherwise advised.

This report shall not be reproduced except in full, without the prior written approval of the laboratory.

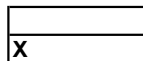
Test results apply to the samples as received. Sample information has been provided by the customer and can affect validity of the results.

Page 1 of 1
Form R03a

**FOR AND ON BEHALF OF
DGL Testing Services Ltd.,**

**Approved Signatory.
D. G. Lloyd Managing Director
S Oulds Quality Manager**

DATE Sampled: 08/06/2022



Date of report:

25/06/2022

Company No. 5715772 VAT Registration No. 880 8638 82

DGL TESTING SERVICES LTD

Registered office: Building 1020, Heeley Close, Kent Science Park

Sittingbourne Kent ME9 8HL

Tel: 01795 411518 Fax: 01795 411519 Mobile: 07747 443319

TEST REPORT NO: DGL4843S-1EVALUATION OF UNBOUND PAVEMENT LAYERS
USING TRL DYNAMIC CONE PENETROMETER (DCP)

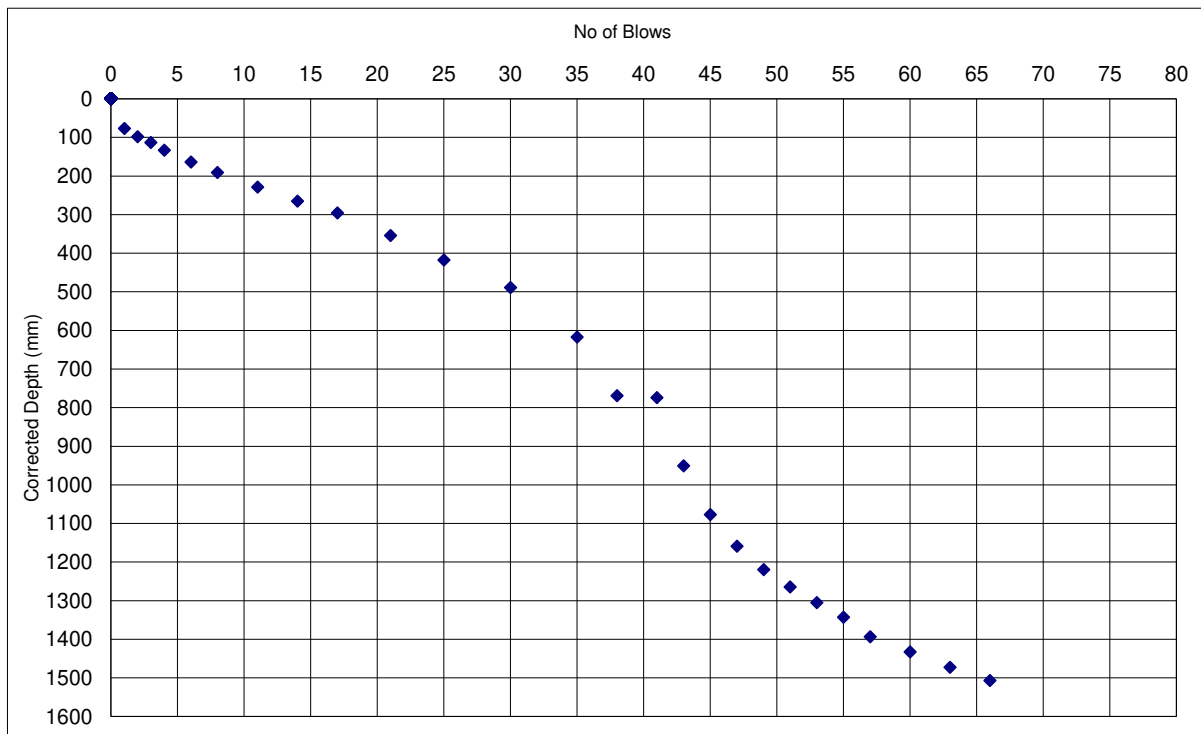
CLIENT:	Marlborough Surfacing	SURFACE LAYER MATERIAL:	
JOB NO:	MH01/6530	Turf	
SCHEME:	Chestnut Park, St Annes Rd B152, N15 3AQ		
CLIENT REF:	TH5 DCP	START DEPTH:	0
LOCATION	TH5	DATE TESTED:	08/06/2022
IN WORKS:		TECHNICIAN:	KE/SO

TEST METHOD

TRRL Operating Instructions (A2465) : 1986

TEST RESULT

Location Ref	Approx Depth (mm)		mm/blow	% CBR
TH5 DCP	0	98	49.0	4.9
	98	489	14.0	19
	489	769	35.0	7.0
	769	774	1.7	>100
	774	1220	55.8	4.3
	1220	1507	16.9	15

FOR AND ON BEHALF OF
DGL Testing Services Ltd.,

Approved Signatory.

D. G. LLOYD. Managing Director.

X

Page 1 of 1
Form Ref R035
Feb-11

DATE: 13/06/2022

Company No. 5715772 VAT Registration No. 880 8638 82

DGL TESTING SERVICES LTD

Registered office: Building 1020, Heeley Close, Kent Science Park

Sittingbourne Kent ME9 8HL

Tel: 01795 411518 Fax: 01795 411519 Mobile: 07747 443319

TEST REPORT NO: DGL4843S-2EVALUATION OF UNBOUND PAVEMENT LAYERS
USING TRL DYNAMIC CONE PENETROMETER (DCP)

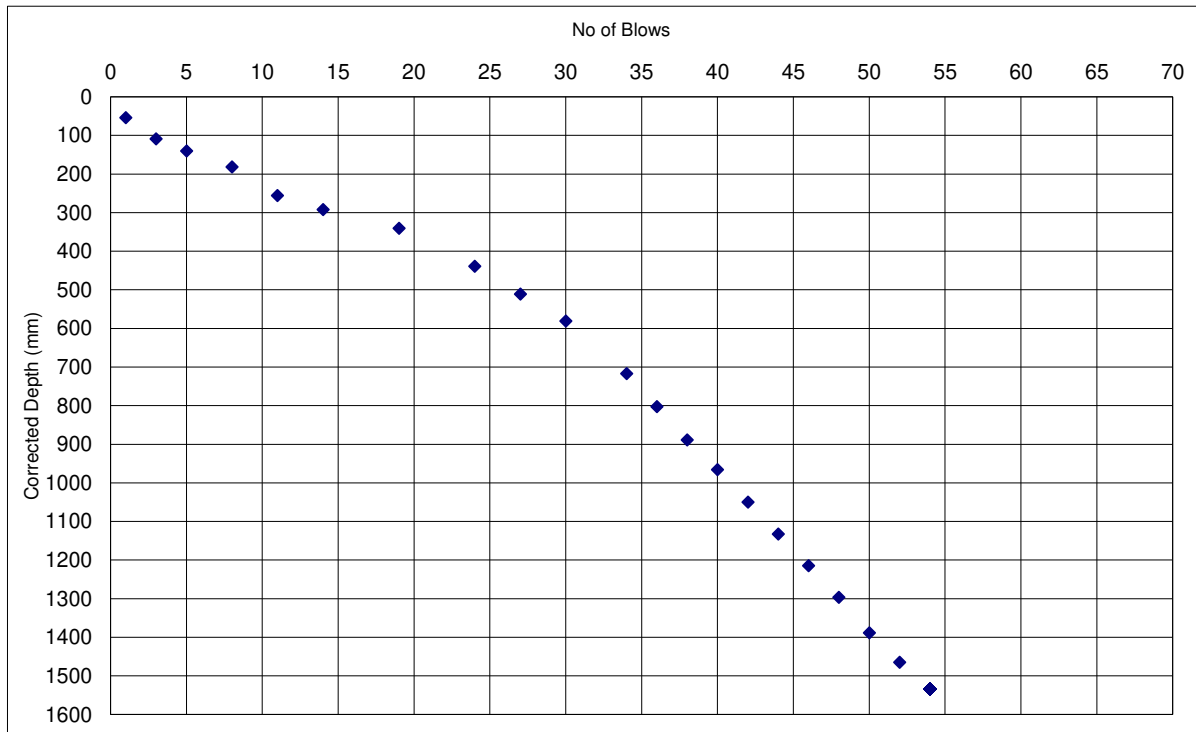
CLIENT:	Marlborough Surfacing	SURFACE LAYER MATERIAL:	
JOB NO:	MH01/6530	Turf	
SCHEME:	Chestnut Park, St Annes Rd B152, N15 3AQ		
CLIENT REF:	TH6 DCP	START DEPTH:	0
LOCATION	TH6	DATE TESTED:	08/06/2022
IN WORKS:		TECHNICIAN:	KE/SO

TEST METHOD

TRRL Operating Instructions (A2465) : 1986

TEST RESULT

Location Ref	Approx Depth (mm)		mm/blow	% CBR
TH6 DCP	0	140	28.0	8.9
	140	439	15.7	16
	439	717	27.8	9.0
	717	1534	40.9	6.0

FOR AND ON BEHALF OF
DGL Testing Services Ltd.,Page 1 of 1
Form Ref R035
Feb-11Approved Signatory.
D. G. LLOYD. Managing Director.

X

DATE: 13/06/2022

DGL TESTING SERVICES LTD

Registered office: Building 1020, Heeley Close, Kent Science Park

Sittingbourne Kent ME9 8HL

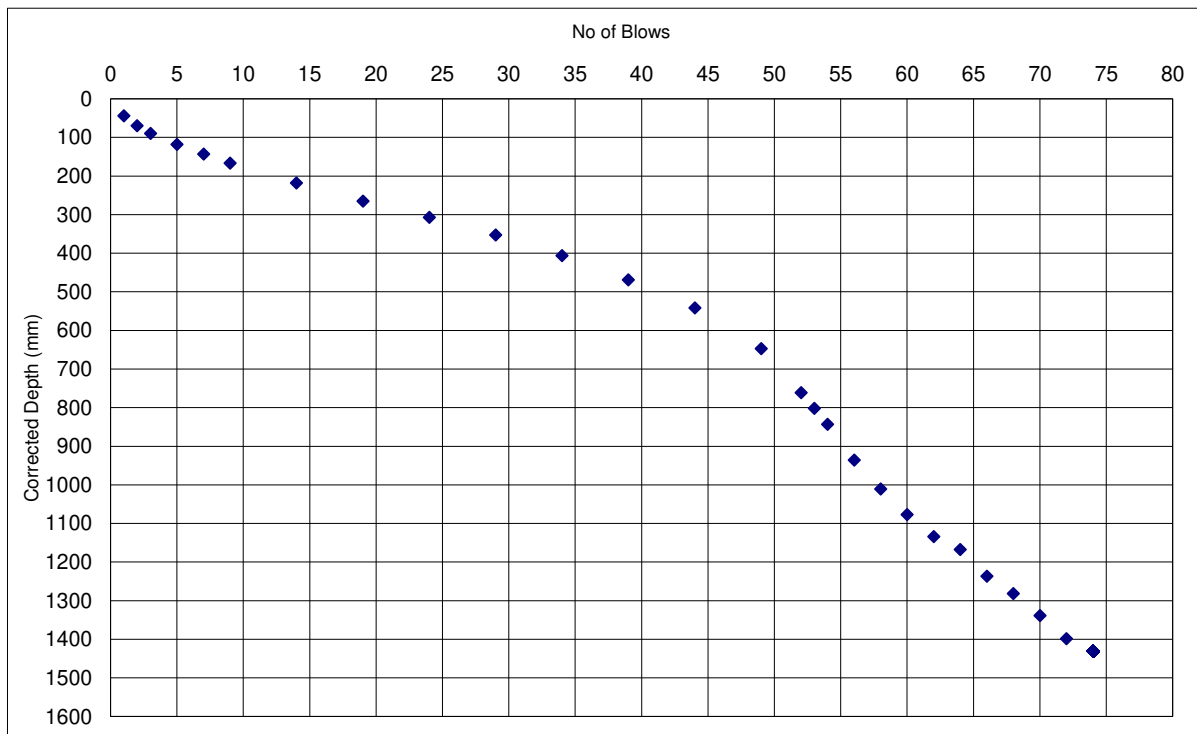
Tel: 01795 411518 Fax: 01795 411519 Mobile: 07747 443319

TEST REPORT NO: DGL4843S-3EVALUATION OF UNBOUND PAVEMENT LAYERS
USING TRL DYNAMIC CONE PENETROMETER (DCP)

CLIENT:	Marlborough Surfacing	SURFACE LAYER MATERIAL:	
JOB NO:	MH01/6530	Turf	
SCHEME:	Chestnut Park, St Annes Rd B152, N15 3AQ		
CLIENT REF:	TH7 DCP	START DEPTH:	0
LOCATION	TH7	DATE TESTED:	08/06/2022
IN WORKS:		TECHNICIAN:	KE/SO

TEST METHOD TRRL Operating Instructions (A2465) : 1986**TEST RESULT**

Location Ref	Approx Depth (mm)		mm/blow	% CBR
TH7 DCP	0	44	44.0	5.5
	44	167	15.4	17
	167	469	10.1	26
	469	542	14.6	18
	542	1134	32.9	7.5
	1134	1431	24.8	10

FOR AND ON BEHALF OF
DGL Testing Services Ltd.,Approved Signatory.
D. G. LLOYD. Managing Director.

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Form Ref R035
Feb-11

DATE: 13/06/2022

Company No. 5715772 VAT Registration No. 880 8638 82

Appendix E

Risk Classification

LCRM outlines the framework to be followed for risk assessment in the UK. This report follows the first stage of the risk assessment process; preliminary risk assessment.

The initial conceptual model has been produced based on an assessment of risk, which is based a combination of the likelihood of an event occurring and its magnitude of its consequence. As such the guidance provided in CIRIA 552 has been used to produce the above conceptual model.

Table D1 Classification of Consequence (based on Table CIRIA552 6.3)

Classification	Definition
Severe	Short term (acute) risk to human health likely to result in “significant harm” as defined by the Environment Protection Act 1990, Part 2A. Catastrophic damage to buildings/property. Short term risk of pollution of sensitive water resource. Short term risk to a particular ecosystem, or organism forming part of such ecosystem (note: the definitions of ecological systems within the Defra Circular on Contaminated Land, 01/2006)
Medium	Chronic damage to Human Health (“significant harm” as defined in the Defra Circular on Contaminated Land, 01/2006) Pollution of sensitive water resources A significant change in a particular ecosystem, or organism forming part of such ecosystem. (note: the definitions of ecological systems within Defra Circular on Contaminated Land, 01/2006)
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services (“significant harm” as defined in the Defra Circular on Contaminated Land, 01/2006). Damage to sensitive buildings/structures or the environment.
Minor	Harm, not necessarily significant harm but that could result in financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as Personal Protective Clothing, etc). Easily repairable effects of damage to buildings/structures.

Table D2 Classification of Probability (based on Table CIRA552 6.4)

Classification	Definition
High Likelihood	An event which would either appear very likely in the short term and almost inevitable over the long term, or, there is evidence at the receptor of harm or pollution.
Likely	It is probable that an event, pollution linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	Circumstances are possible under which an event could occur, but it is not means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	Circumstances are such that it is improbable that an event would occur even in the very long term

Once the probability of an event occurring and its consequence have been classified as a consequences/risk category may then be assigned in accordance to Table D3. Definitions of consequence or risk category are as below in Table D4

Table D3 Comparison of consequence against probability

		Consequence of Risk			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/ Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/ Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/ Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table D4 Definitions of these risk categories (based on Table CIRA 552 6.6)

Classification	Description
Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, There is evidence that severe harm to a designated receptor is currently happening and as such urgent investigation and remediation are likely to be required and could results in substantial liability.
High Risk	Harm is likely to occur. Remedial works may be required, with a realisation of the risk is likely to present a suitability liability, with investigation required and remedial in the short and likely long term.
Moderate Risk	It is possible that harm could arise to a designated receptor from an identified hazard.
Low Risk	It is possible that harm could arise to a receptor from an identified hazard, but it is likely that if the hazard would occur, at worst, this harm if realised would normally be mild.
Very Low Risk	There is a low possibility that harm could occur. In the event of such harm being realised it is not likely to be severe.