

Site: Hilton Lane, Prestwich
Report: Supplementary Ground Investigation
Date: January 2023



1 INTRODUCTION

LK Consult Ltd (LKC) has been commissioned by Leo Prestwich Limited to carry out a supplementary site investigation for Hilton Lane, Prestwich. The investigation was undertaken in support of the redevelopment of the site for residential end use.

The following work has previously been undertaken:

- Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy report, undertaken by LKC (Ref: LKC 21 1545-02, dated 24th May 2022).
- Preliminary Risk Assessment (PRA) report, undertaken by LKC (Ref: CL-602-LKC 21 1545-01, dated October 2021). This report included a summary of a Phase 1 Desk Study Investigation Report undertaken by Geo-investigate Ltd in 2017.

The Environment Agency (EA) have since commented on the Phase 2 report and have stated that elevated PAHs have been identified in WS101 and WS102 in the area of the historical landfill. The site investigation identified clay to 15mbgl but does not confirm a thickness of clay or depth to bedrock. This investigation was undertaken to provide additional ground conditions information to satisfy the EA.

1.1 Site Details

A summary of the site details is presented in Table 1-1. Figure 1 shows the site location and boundary. Figure 2 indicates the proposed development.

Location	Southwest end of Butterstile Close, south of Hilton Lane, Prestwich, Manchester. Centred at approximate National Grid Reference 380930E 402410N.
Area	2,000m ² .
Topography	67-69 metres Above Ordnance Datum (AOD). Site slopes gently from southeast-northwest. Hilton Lane situated higher than site.
Proposed Development	Residential housing with gardens / soft landscaping.

Table 1-1. Summary of site details.

2 GROUND INVESTIGATION

2.1 Site Investigation Design and Methodology

The initial site investigation was carried out on 4th to 7th February 2022 and comprised the following:

- 5no. window sample boreholes drilled to 5.45-7.45 metres below ground level (mbgl) (ref. WS101 to WS105).
- 1no. cable percussion borehole drilled to 15.47mbgl (ref. CP101).

LKC returned to site on the 20th and 21st December 2022. It was proposed to undertake a cable percussive borehole to 25m to assess ground conditions at depth. However, bedrock was encountered at 15.6mbgl and the borehole (CP201) was terminated at 17.4mbgl:

All site investigation locations are shown in Figure 3. Soil profile logs are provided in Appendix A.

2.2 Ground Conditions

A summary section of the logs is provided in Plate 4-1, with additional comments below.

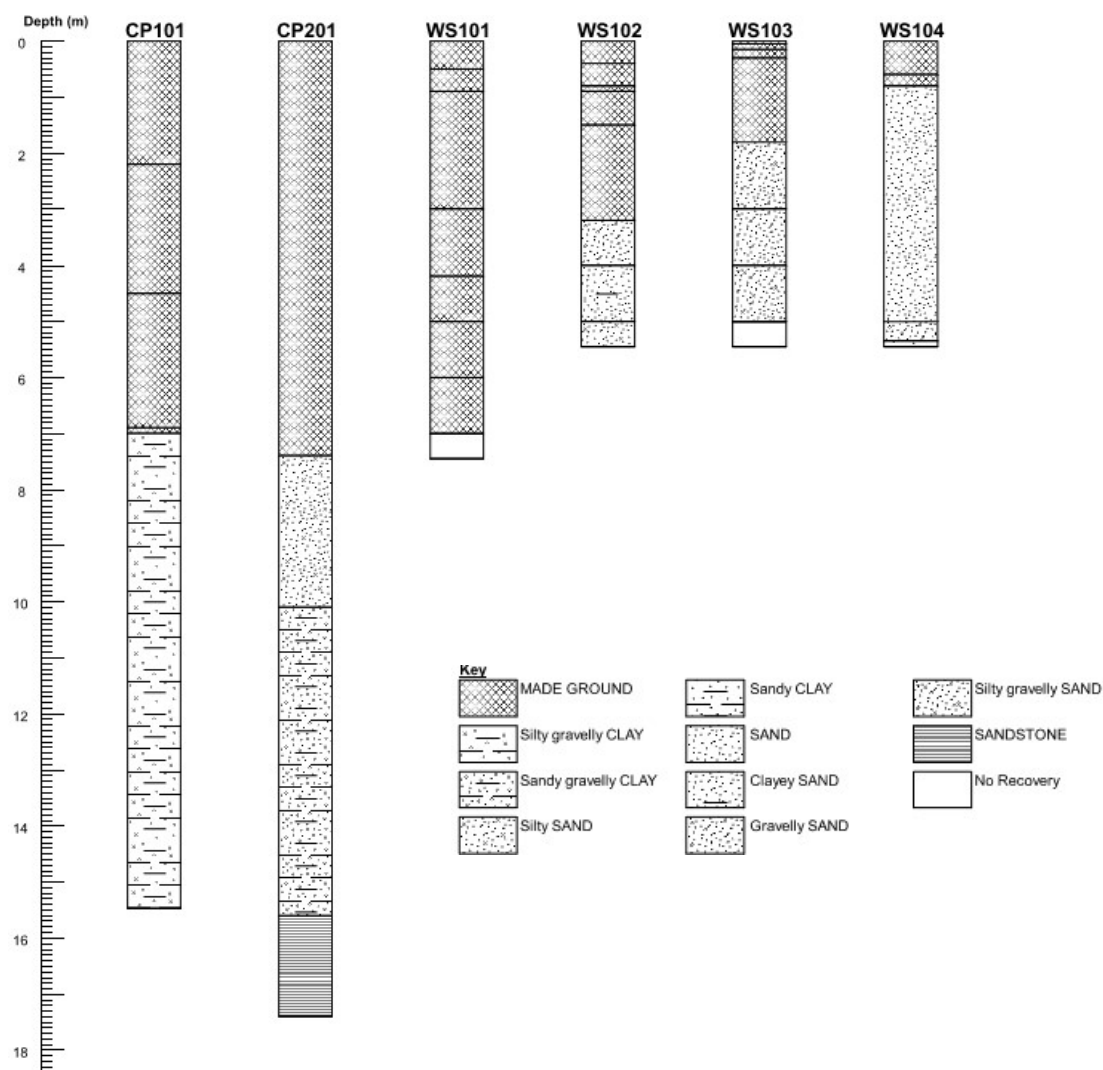


Plate 2-1: Summary of ground conditions.

Additional information on ground conditions:

Made Ground

Made ground generally comprised sand with ash, coal brick, pottery and glass fragments. A slight hydrocarbon odour was noted in CP101 (1.2-1.65mbgl). Subsequent sampling did not identify any exceedance of TPH in soil or groundwater samples.

The depth of made ground was deepest in the southwest of site (7.4mbgl CP201) becoming shallower to the northeast (0.8m in WS104).

Natural Strata

Gravelly clayey / silty sand was generally present beneath the made ground. Natural clay was present beneath the made ground in WS105 and CP101 (no sand was present in CP101). Clay was also present in WS104 from 5.35m and CP201 from 10.10mbgl.

Sandstone bedrock was encountered in CP201 at 15.6m. Chiselling was undertaken within the rock to 17.4mbgl.

2.3 Assessment of Ground Conditions

In the area of the historical landfill, where the deepest made ground materials were identified, approximately 8m of natural strata is present overlying sandstone bedrock. A minimum of 5m of stiff to very stiff consistency clay is present directly above the bedrock.

In this area of the site the piles are to be set at 14mbgl within the natural clay which is over 1m above bedrock. It is anticipated that the stiff clay would be relatively impermeable with a permeability of around $k=10^{-9}\text{m/s}^{-1}$. The boreholes were largely dry during drilling works with only 0.1m of perched water present in CP101 sitting on the clay. Water strikes were noted within two of the window sample boreholes at a depth of 5m which is likely to be perched water. Monitoring of groundwater levels within the boreholes found them to be largely dry. The deep installation in CP101 within the clay strata identified groundwater levels at 7.55-7.78m.

Elevated heavy metals and PAHs were identified in the made ground samples tested from site. The source of the contamination was considered to be the ash, clinker and coal noted in the made ground. Contamination associated with ash and clinker are not anticipated to be significantly mobile due to the residual crystalline nature of the matrix. Given the high PAH concentrations it is possible fragments of bitumen / asphalt may be present which have not been seen during logging.

This is supported by the groundwater testing undertaken from site which identified a marginal exceedance of arsenic in WS102 and one for zinc in the deep borehole in CP101. There was no free product or other visual / olfactory evidence of contamination noted in the water samples. It should be noted the exceedances in PAHs were not reflected in the groundwater sample results, which support the anticipated immobile natures of the PAH source.

The site is not located within a Source Protection Zone and no groundwater abstractions are present within 100m of the site. The site is connected to a much larger area of infilling therefore the sensitivity of the site is low. The clay present above the sandstone bedrock should significantly reduce any sub-surface migration.

¹ "Handbook of Geotechnical Investigation and Design Tables" Burt Look. 2007.

Based on the site conditions, LKC does not consider there to be significant risk to the underlying Aquifer from the soils on site and any anticipated piling activities.

3 CONCLUSIONS

LKC has completed additional site investigation to confirm the depth to bedrock and thickness of superficial deposits on site. LKC considers that given the nature of made ground materials on site and the underlying stiff clay there is no significant risk to the underlying aquifer from both made ground and future piling activities.

Report Prepared By:

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Report Reviewed By:

Paul Quimby
Director

Enc:

Figures

Appendix A: Soil Profile Logs

Disclaimer

This report has been prepared by LKC who have exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant experienced in preparing reports of a similar scope. However, to the extent that the report is based on or relies upon information contained in records, reports or other materials provided to LKC which have not been independently produced or verified, LKC gives no warranty, representation or assurance as to the accuracy or completeness of such information.

This report is issued on the condition that LKC will not be held liable for any loss arising from ground conditions between sampling points (i.e. boreholes/trial pits/hand augers/surface samples) which have not been shown by the sampling points or related testing carried out during the investigation, nor for any loss arising from conditions below the maximum depth of the investigation, or for any works done to the garden areas following the date of inspection. Opinions on such conditions, where given, are for general guidance only.

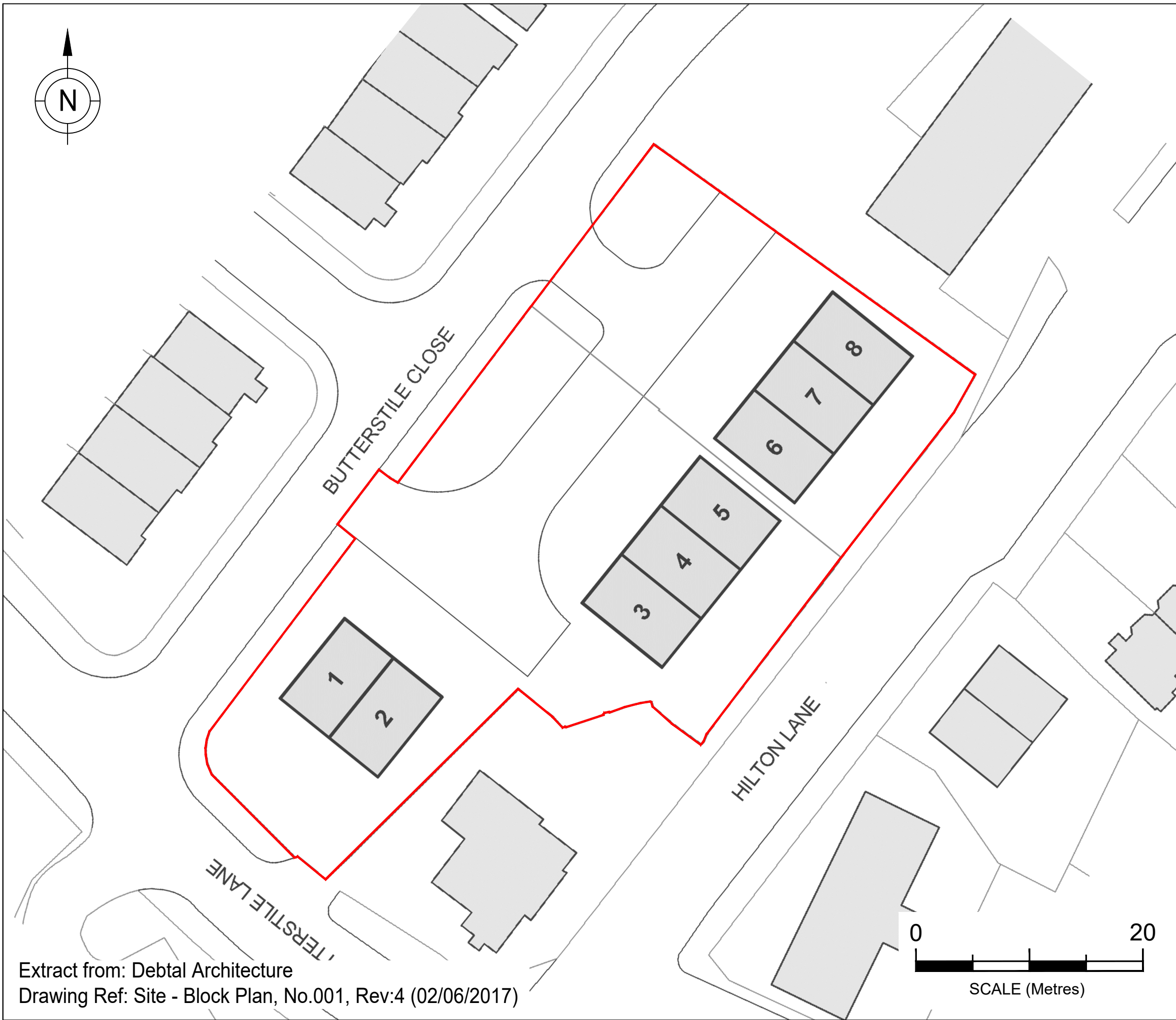
Other works including *inter alia* hotspot removal, drainage, soil texture, permitting, invasive species management and geotechnical requirements are out with this scope and should be dealt with by others.

This report is prepared solely for the benefit of Leo Prestwich Ltd. It may not be relied upon by, or submitted to a third party for their reliance for the purposes of valuation, mortgage, insurance and regulatory approval, until all invoices have been settled in full. Those using this information in subsequent assessments or evaluations do so at their own risk.

Figures



Client: Leo Property Ltd				Title: Site Location & Boundary Plan			
Site: Hilton Lane, Butterstile Close, Prestwich				Scale (see scale bar): 1:25,000 & 1:1,500 @ A4			
Job No.: LKC 21 1545	Drawn By: HM	Checked By: PQ	Drawn: Feb 2021	Figure: 1			
				Revision:			



KEY

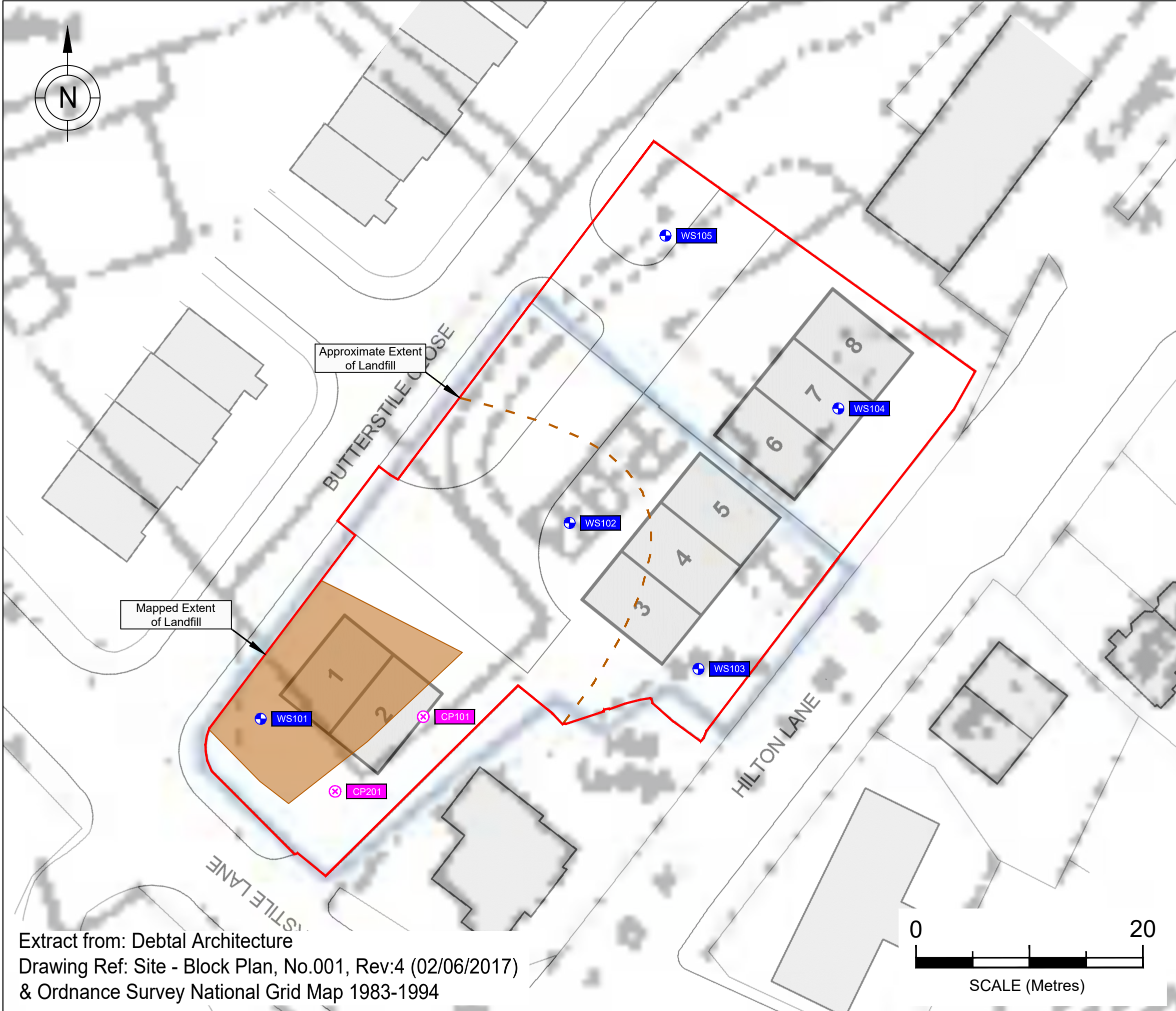
 Site Boundary

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.



Client:				Leo Property Ltd	
Site:				Hilton Lane, Butterstile Close, Prestwich	
Title:				Proposed Development Plan	
Job No.:		Scale (See Scale Bar):		Figure:	Revision:
LKC 21 1545		See Scale Bar		2	
Drawn By:	Checked By:	Drawn:			
AC	HM	Oct 2021			

Extract from: Debtal Architecture
Drawing Ref: Site - Block Plan, No.001, Rev:4 (02/06/2017)



KEY

- Site Boundary
- Window Sample Borehole (WS)
- Cable Percussive Borehole (CP)
- Landfill (Ordnance Survey Map 1:2,500, 1953-1954)
- Approximate Extent of Landfill

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

Client: **Leo Property Ltd**

Site: **Hilton Lane, Butterstile Close, Prestwich**

Title: **Site Investigation Location Plan**

Job No.: LKC 21 1545	Scale (See Scale Bar): See Scale Bar	Figure: 3	Revision: B
Drawn By: AC	Checked By: FP	Drawn: Jan 2023	

Extract from: Debtal Architecture
Drawing Ref: Site - Block Plan, No.001, Rev:4 (02/06/2017)
& Ordnance Survey National Grid Map 1983-1994

Appendix A – Soil Profile Logs

Boring Method

Cable Percussion

Casing Diameter
Ground Level (mOD)

67.00

Client

Leo Prestwich Ltd

Job Number

LKC 21 1545

Location

380914 E 402397 N

Dates

04/02/2022-
07/02/2022

Engineer

LKC

Sheet

1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.00	ES						MADE GROUND: Dark brown organic gravelly very silty SAND with frequent brick fragments roots, rare, pottery ash and concrete. Sand is fine to medium. Gravel is fine to medium, sub-angular comprising mixed lithologies.			
1.20-1.65 1.20-1.65 1.30-1.70	SPT N=7 ES ES			1,1/2,2,1,2		(2.20)	Slight hydrocarbon odour from 1.2mbgl to 1.65mbgl.			
2.20-2.65 2.20-2.65	SPT N=6 D			1,2/1,1,2,2	64.80	2.20	MADE GROUND: Brown slightly silty SAND with rare brick fragments and lenses of organic matter. Sand is fine to medium.			
3.00-3.50 3.30-3.75 3.30-3.75	D SPT N=4 D			1,1/1,0,1,2		(2.30)				
4.20-4.65 4.20-4.65 4.50-5.00	SPT N=6 D ES			1,1/2,2,1,1	62.50	4.50	MADE GROUND: Brown clayey SAND with rare coal and brick fragments. Sand is fine to medium.			
5.40-5.85 5.40-5.85	SPT N=8 D			1,2/2,2,2,2		(2.40)				
7.20-7.65 7.20-7.65	SPT N=5 D			1,1/1,2,1,1	60.10 60.00	6.90 7.00	MADE GROUND: Brown very sand CLAY with rare brick fragments. Strata noted to be wet. Sand is fine to medium.			
7.70-8.00	B						Stiff consistency brown slightly gravelly silty CLAY with gravel content increasing with depth and rare coal. Gravel is fine to medium, sub-rounded to sub-angular comprising mixed lithologies.			
8.30-8.95 8.50-8.95	D SPT N=6			1,2/1,1,2,2						
10.00-10.45	SPT N=40			4,4/8,10,11,11						

Remarks

Borehole stable. Strata noted to be wet between 6.90-7.00mbgl.
Grid reference estimated from www.gridreferencefinder.com
Elevation estimated from www.freemaptools.com/elevation-finder.htm

Scale (approx)

1:50

Logged By

RW

Figure No.

LKC 21 1545.CP101

**LK CONSULT LTD**Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Tel: 0161 763 7200 web: www.thelkgroup.com**Site**

Hilton Lane, Prestwich

Borehole**Number**
CP101

Boring Method Cable Percussion	Casing Diameter		Ground Level (mOD) 67.00	Client Leo Prestwich Ltd	Job Number LKC 21 1545
	Location 380914 E 402397 N		Dates 04/02/2022- 07/02/2022	Engineer LKC	Sheet 2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
10.00-10.45	D									
10.50-10.80	D									
11.50-11.95	U					(8.47)				
12.00-12.50	D									
13.00-13.41 13.00-13.40	SPT 55/255 D			6,10/16,14,15,10						
14.20-14.43 14.20-14.50	SPT 25*/135 50/95 D			10,15/38,12						
15.10-15.47 15.10-15.50	SPT 50/220 D			7,11/14,16,20	51.53	15.47	Complete at 15.47m			

RemarksBorehole stable. Strata noted to be wet between 6.90-7.00mbgl.
Grid reference estimated from www.gridreferencefinder.com
Elevation estimated from www.freemaptools.com/elevation-finder.htm
Chiselling from 13.00m to 15.00m for 1.45 hours.**Scale (approx)**

1:50

Logged By

RW

Figure No.

LKC 21 1545.CP101

Excavation Method

Drive-in Windowless Sampler
driven to 7.45mbgl.

Dimensions
Location (Handheld GPS)
380904 E 402397 N

Ground Level (mOD)

67.00

Client

Leo Prestwich Ltd

Job
Number
LKC 21 1545

Engineer

LKC

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50	ES1 PID=0.1ppm				(0.50)	MADE GROUND: Dark brown slightly gravelly very sandy clayey SILT with occasional brick fragments, ash, pottery, rare rootlets and plastic (wrappers). Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies. Possible asbestos-containing material (ACM) identified at 0.50mbgl.			
0.50-0.90	ES2 PID=0.1ppm			66.50	0.50				
0.90-1.90	ES3 PID<0.1ppm			66.10	0.90	MADE GROUND: Light brown very sandy CLAY with occasional brick fragments, coal and ash. Sand is fine to medium.			
1.20-1.65	SPT N=4		1,1/1,1,1,1			MADE GROUND: Light brown SAND with occasional brick fragments, glass, ash, rare concrete fragments and sandy clay lenses. Sand is fine to medium. Slightly silty between 1.00-1.40mbgl.			
2.00-2.45	SPT N=3		0,1/0,1,1,1		(2.10)				
3.00-3.45	SPT N=7			64.00	3.00	MADE GROUND: Blackish brown slightly silty SAND with frequent ash, occasional coal, brick fragments, glass. Increasing brick content with depth. Sand is fine to coarse.			
3.00-4.00	ES4 PID<0.1ppm		2,2/2,2,2,1		(1.20)				
4.00-4.45	SPT N=4		1,1/1,1,1,1	62.80	4.20	MADE GROUND: Light brown SAND with rare brick fragments. Sand is fine to medium.			
4.00-5.00	ES5 PID<0.1ppm				(0.80)				
5.00-5.45	SPT N=8		1,1/2,2,2,2	62.00	5.00	MADE GROUND: Light orangish brown fine to medium SAND (possible infilled material).			
5.00-6.00	ES6				(1.00)				
5.50-6.00	D7								
6.00-6.45	SPT N=6		1,1/1,1,2,2	61.00	6.00	MADE GROUND: Light orangish brown slightly gravelly SAND (possible infilled material). Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies.			
6.00-7.00	D8				(1.00)				
7.00-7.45	SPT N=11		2,2/2,3,3,3	60.00	7.00	NO RECOVERY (likely base of landfill).			
					(0.45)				
				59.55	7.45	Complete at 7.45m			

Remarks

Possible ACM identified at 0.50mbgl.
Borehole dry and stable.
No recovery between 7.00-7.45mbgl.
Location estimated from handheld GPS, accurate to 3.00m.
Elevation estimated from <https://www.freemapttools.com/elevation-finder.htm>
Scale
(approx)
1:40

Logged
By
EM

Figure No.
LKC 21 1545.WS101

Excavation Method

Drive-in Windowless Sampler
driven to 5.45mbgl.

Dimensions
Location (Handheld GPS)
380930 E 402410 N

Ground Level (mOD)

67.00

Client

Leo Prestwich Ltd

Job
Number
LKC 21 1545

Dates

07/02/2022

Engineer

LKC

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.40	ES1 PID<0.1ppm				(0.40)	MADE GROUND: Dark brown silty SAND with occasional rootlets, brick fragments, coal, pottery, ash, rare glass and sub-angular sandstone cobbles. Sand is fine to coarse.			
0.40-0.80	ES2 PID<0.1ppm			66.60	0.40	MADE GROUND: Light brown SAND with rare coal and brick fragments. Sand is fine to medium.			
0.80-0.90	ES3 PID<0.1ppm			66.20	0.80	MADE GROUND: Greyish brown gravelly silty SAND with frequent coal, occasional ash and brick fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies.			
0.90-1.50	ES4 PID=0.1ppm			66.10	0.90				
1.20-1.65	SPT N=8		2,2/2,2,2,2		(0.60)				
1.50-2.50	ES5			65.50	1.50	MADE GROUND: Black SAND and GRAVEL predominantly comprising ash, coal and clinker with rare glass and metal (nail). Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded.			
2.00-2.45	SPT N=3		2,3/2,1,0,0		(1.70)	MADE GROUND: Light brown fine to medium SAND with occasional brick fragments, rare ash and concrete. Frequent clay lenses between 1.50-2.00mbgl.			
3.00-3.45	SPT N=1		0,0/0,0,1,0						
3.20-4.00	ESD6			63.80	3.20	Very loose light orangish brown slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies including coal.			
4.00-4.45	SPT N=0		1,0/0,0,0,0	63.00	4.00	Very loose brown very clayey SAND. Very slight organic odour. Sand is fine to medium.			
4.00-5.00	D7				(1.00)				
5.00-5.45	D8		Water strike(1) at 5.00m.	62.00	5.00	Very loose light orange very silty SAND. Sand is fine to medium.		Σ1	
5.00-5.45	SPT N=0		1,0/0,0,0,0		(0.45)				
				61.55	5.45	Complete at 5.45m			

Remarks

Groundwater strike recorded at 5.00mbgl.
Borehole stable.
Location estimated from handheld GPS, accurate to 3.00m.
Elevation estimated from <https://www.freemaptools.com/elevation-finder.htm>
Scale
(approx)

1:40

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By

EM

Figure No.

LKC 21 1545.WS102

Excavation Method

Drive-in Windowless Sampler
driven to 5.45mbgl.

Dimensions
Location (Handheld GPS)
380944 E 402403 N

Ground Level (mOD)

67.00

Client

Leo Prestwich Ltd

Job
Number

LKC 21 1545

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.15-0.30	ES1 PID=0.1ppm			66.95	0.05 (0.10)	MADE GROUND: Brown slightly gravelly slightly silty SAND with occasional brick fragments, coal and ash. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies.			
0.30-0.60	ES2 PID=0.1ppm			66.85	0.15 (0.15)				
				66.70	0.30	MADE GROUND: Brown sub-angular sandstone COBBLES. Tarmacadam between 0.05-0.07mbgl.			
0.60-1.60	ES3 PID<0.1ppm					MADE GROUND: Brown slightly gravelly slightly silty SAND with occasional brick fragments, coal and ash. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies.			
1.20-1.65	SPT N=6		1,1/1,1,2,2		(1.50)	MADE GROUND: Light orangish brown slightly gravelly slightly silty SAND with rare brick fragments and ash. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies.			
2.00-2.45	SPT N=5			65.20	1.80	Loose light orangish brown slightly gravelly slightly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies including coal.			
2.00-3.00	D4		1,1/1,1,1,2		(1.20)				
3.00-3.45	SPT N=19			64.00	3.00	Medium dense light brown slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies including coal.			
3.00-4.00	D5		3,4/4,5,5,5		(1.00)				
4.00-4.45	SPT N=12		3,3/3,3,3,3	63.00	4.00	Medium dense light brown slightly gravelly slightly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies including coal.			
4.50-5.00	D6				(1.00)	Firm consistency orangish brown sandy CLAY between 4.40-4.50mbgl.			
5.00-5.45	SPT N=24		4,5/5,6,6,7						

Remarks

Location estimated from handheld GPS, accurate to 3.00m.
No recovery between 5.00-5.45mbgl.
Elevation estimated from <https://www.freemaptools.com/elevation-finder.htm>
Borehole dry and stable.

Scale
(approx)

1:25

Logged
By

EM

Figure No.

LKC 21 1545.WS103

Excavation Method

Drive-in Windowless Sampler
driven to 5.45mbgl.

Dimensions
Location (Handheld GPS)
380952 E 402427 N

Ground Level (mOD)

67.00

Client

Leo Prestwich Ltd

Job
Number
LKC 21 1545

Engineer

LKC

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.60	ES1 PID<0.1ppm				(0.60)	MADE GROUND: Brown slightly gravelly silty SAND with occasional coal, ash, rare brick fragments and rare rootlets. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies.			
0.60-0.80	ES2 PID=0.1ppm			66.40 66.20	0.60 (0.20) 0.80	MADE GROUND: Light orangish brown slightly silty SAND with occasional concrete fragments and rare rootlets. Sand is fine to coarse.			
1.00-2.00	ESD3 PID<0.1ppm		1,1/1,2,2,3			Loose becoming medium dense light brown fine to coarse SAND. Sand is fine to medium grained between 1.00-2.50mbgl.			
1.20-1.65	SPT N=8								
2.00-2.45	SPT N=8		1,1/2,2,2,2						
2.00-3.00	D4								
3.00-3.45	SPT N=8		1,1/2,2,2,2		(4.20)	Sand is darker in colour between 2.80-3.20mbgl. Band of coal gravel between 3.30-3.35mbgl. Gravel is fine to medium, sub-angular.			
4.00-4.45	SPT N=16		3,3/3,4,4,5			Medium dense from 4.00mbgl. Sand is fine to medium grained between 4.00-5.00mbgl.			
4.00-4.45	D5								
5.00-5.45	SPT N=18		2,2/3,4,5,6	62.00	5.00	Medium dense light brown very gravelly SAND. Sand is fine to coarse. Gravel is fine to medium, sub-angular to sub-rounded comprising mixed lithologies including coal.			
5.00-5.45	D6			61.65 61.55	5.35 (0.40) (5.45)	Firm consistency brown sandy CLAY. Sand is fine to medium. Complete at 5.45m			

Remarks

Borehole dry and stable.
Location estimated from handheld GPS, accurate to 3.00m.
Elevation estimated from <https://www.freemaptools.com/elevation-finder.htm>
Scale
(approx)
1:40

Logged
By
EM

Figure No.
LKC 21 1545.WS104

Excavation Method

Drive-in Windowless Sampler
driven to 5.45mbgl.

Dimensions
Location (Handheld GPS)
380939 E 402440 N

Ground Level (mOD)

66.50

Client

Leo Prestwich Ltd

Job
Number

LKC 21 1545

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.40	ES1 PID=0.1ppm				(0.40)	MADE GROUND: Dark brown silty SAND with occasional roots, rootlets, concrete fragments, rare whole bricks and concrete cobbles. Sand is fine to medium.		
0.40-1.40	ES2 PID<0.1ppm			66.10	0.40	MADE GROUND: Greyish brown clayey SAND with frequent brick fragments, coal, occasional ash, very sandy clay lenses, rare plastic and glass. Sand is fine to medium.		
1.20-1.65	SPT N=8		5,4/2,2,2,2		(1.30)			
1.70-2.20	ES3 PID<0.1ppm			64.80	1.70	MADE GROUND: Light brown very sandy CLAY with rare brick fragments and rare pottery fragments. Sand is fine to medium.		
2.00-2.45	SPT N=4		1,1/1,1,1,1	64.30	2.20	Occasional bands of sand between 2.00-2.20mbgl.		
2.50-2.78	ES4					Firm consistency medium strength light brown slightly gravelly sandy CLAY with occasional rootlets and sand lenses. Sand is fine to medium. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies.		
2.50-3.00	PP 54kPa				(1.00)			
2.80-3.00	D5							
3.00-3.45	SPT N=6		1,1/1,1,2,2	63.30	3.20			
3.00-3.45	D6			63.10	(0.20)	Loose brown silty SAND. Sand is fine to medium.		
3.50-4.00	D7 PID=0.9ppm				3.40	Medium dense orange slightly gravelly slightly silty SAND, becoming light orangish brown in colour with depth. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies.		
4.00-4.45	SPT N=10		1,1/2,2,3,3		(1.60)			
4.00-5.00	D8							
5.00-5.45	SPT N=13		Water strike(1) at 5.00m. 2,2/2,2,5,4	61.50	5.00	Medium dense brown very gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising mixed lithologies.		
				61.05	(0.45)			
					5.45	Complete at 5.45m		

Remarks

Groundwater strike recorded at 5.00mbgl.
Borehole stable.
Location estimated from handheld GPS, accurate to 3.00m.
Elevation estimated from <https://www.freemaptools.com/elevation-finder.htm>
Scale
(approx)

1:40

Logged
By

EM

Figure No.

LKC 21 1545.WS105



LK CONSULT LTD
Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Tel: 0161 763 7200 web: www.thelkgroup.com

Site
Hilton Lane, Prestwich

Borehole Number
CP201

Boring Method Cable Percussion		Casing Diameter		Ground Level (mOD)		Client Leo Prestwich Ltd		Job Number LKC 21 1545	
		Location		Dates 20/12/2022- 21/12/2022		Engineer LKC		Sheet 1/2	

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							MADE GROUND: Dark brown and black gravelly SAND with occasional brick, ash, rare plastic and concrete. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mixed lithologies.		
						(7.40)			
						7.40	Brown silty fine to coarse SAND.		
						(2.70)			

Remarks No groundwater encountered	Scale (approx)	Logged By
	1:50	
	Figure No. LKC 21 1545.CP201	

Boring Method

Cable Percussion

Casing Diameter
Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

20/12/2022-
21/12/2022

Engineer

LKC

Sheet

2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						10.10	Very stiff consistency gravelly sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded comprising mixed lithologies.		
						(5.50)			
						15.60	Reddish brown fine to coarse grained SANDSTONE.		
15.60-15.74	SPT 25*/85			20,5/50					
15.60-15.70	D								
15.70-16.00	B								
16.50-16.62	SPT 25*/70			25/50		(1.80)			
16.50-16.60	D								
17.30-17.40	SPT 25*/50			25/50		17.40	Complete at 17.40m		
17.30-17.40	D								

Remarks

No groundwater encountered
Chiselling from 15.60m to 17.30m for 2.5 hours.

**Scale
(approx)**

1:50

**Logged
By**
Figure No.

LKC 21 1545.CP201

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