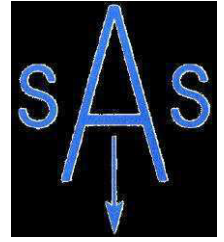

Appendix B – Site Investigation Factual Report



Factual Report on a **GEOTECHNICAL GROUND INVESTIGATION**

Ref: 21/33098-1 | Date: February 2021

**4 Montpelier Square
London
SW7 1JT**

Prepared for:
Ambra SRL

DOCUMENT CONTROL

<i>Project</i>	4 Montpelier Square, London, SW7 1JT
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APPENDIX A

BOREHOLE / TRIAL PIT LOGS

APPENDIX B

LABORATORY TEST & GAS/GROUNDWATER MONITORING DATA

1.0 Introduction

1.1 Outline and Limitations of Report

At the request of Ambra SRL, a ground investigation was carried out in connection with a proposed residential basement development at the above site. A Phase 1 Preliminary Risk Assessment (Desk Study) is presented under separate cover in Site Analytical Services Limited Report Reference 21/33098.

The information was required for the design and construction of foundations and infrastructure for the proposed development at the existing site which includes the construction of a single storey basement to 3.00m maximum depth beneath the footprint of the current property.

The recommendations and comments given in this report are based on the ground conditions encountered in the exploratory hole made during the investigation and the results of the tests made in the field and the laboratory. It must be noted that there may be special conditions prevailing at the site remote from the exploratory hole location which have not been disclosed by the investigation and which have not been taken into account in the report. No liability can be accepted for any such conditions.

2.0 Site Details

National Grid Reference: TQ – 274 295

2.1 Site Location

The site is located on the eastern side and upper section of Montpelier Square, in Knightsbridge, Central London at an approximate postcode SW7 1JT. The site is located opposite to a residential garden square (Montpelier Square) and is immediately bound by residential properties to the north, east and south. The site is rectangular in shape and covers an approximate area of 0.02 Hectares with the general area being under the authority of the City of Westminster.

The nearby surrounding areas to the site are mainly residential in all directions. Commercial properties are located nearby to the south-east, within 250m.

2.2 Published Geology

The 1:50000 Geological Survey of Great Britain (England and Wales) covering the area indicates the site to be underlain by deposits of the Kempton Park Grave Member with the London Clay Formation at depth. A surface cover of Made Ground should also be expected.

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Date: February 2021

3.0 Scope of Work

3.1 Site Works

The proposed scope of works was agreed by the client prior to the commencement of the investigations. To achieve this, the following works were undertaken:-

- The drilling of one continuous flight auger borehole to a depth of 15.00m below ground level (Borehole 1).
- The installation of a combined gas/groundwater monitoring standpipe to a depth of 7.00m depth in Borehole 1, together with four return monitoring visits.
- The excavation by hand of six trial pits, to 1.50m maximum depth to expose existing foundations on site (Trial Pits 1 to 6 inclusive).
- Sampling and in-situ testing as appropriate to the ground conditions encountered in the borehole and trial pits.
- Laboratory testing to determine the engineering properties of the soils encountered in the exploratory holes.

3.2 Ground Conditions

The approximate locations of the exploratory holes are illustrated on the site sketch plan, Figure 1 below.

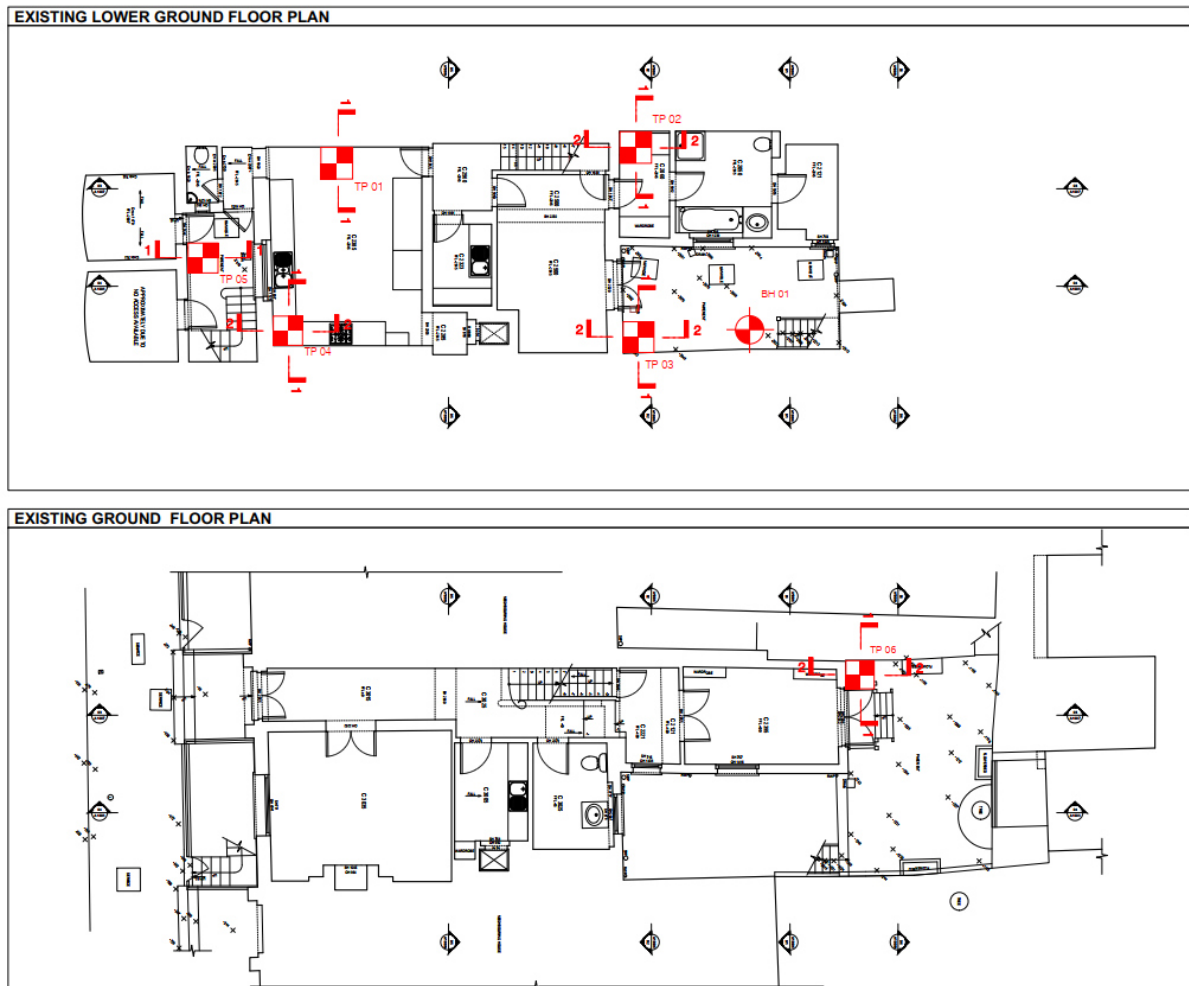


Figure 1. Site Sketch Plan

The boreholes and trial pits revealed ground conditions that were generally consistent with the geological records and known history of the area and comprised Made Ground up to 1.10m in thickness resting on the Kempton Park River Terrace Gravel with the London Clay Formation at depth. Made Ground was also encountered to the base of Trial Pits 3 and 6 at 1.50m deep.

These ground conditions are summarised in the following table. For detailed information on the ground conditions encountered in the borehole and trial pits, reference should be made to the exploratory hole records presented in Appendix A.

Strata	Depth to top of strata (mbgl)	Depth to top of strata (mSD)	Depth to base of strata (mbgl)	Depth to base of strata (mSD)	Description
Made Ground	0.00	-	0.44 to 1.50	-3.29 to -4.44	Tiles or concrete over sandy clay containing brick fragments and occasional hardcore.
Kempton Park River Terrace Gravel	0.44 to 1.10	-3.29 to -3.95	4.50	-7.13	Firm sandy gravelly clay / Medium dense slightly gravelly fine to coarse sand.
London Clay Formation	4.50	-7.13	15.00 (maximum depth of drilling)	-17.93	Stiff silty sandy clay containing partings of silty fine sand and gypsum crystals.

Summary of Ground Conditions in Exploratory Holes

3.3 Groundwater

Groundwater was not encountered in the borehole or trial pits and the material remained essentially dry throughout.

It must be noted that the speed of excavation is such that there may well be insufficient time for further light seepages of groundwater to enter the borehole and trial pits and hence be detected, particularly within more cohesive soils.

Groundwater was encountered at a depth of 4.05m below ground level in Borehole 1 after a period of approximately four weeks.

Isolated pockets of groundwater may also be present perched within any less permeable material found at shallower depth on other parts of the site especially within any Made Ground.

It should be noted that the comments on groundwater conditions are based on observations made at the time of the investigation (January and February 2021) and that changes in the groundwater level could occur due to seasonal effects and also changes in drainage conditions.

3.4 Existing Foundations

Sketches of the foundations exposed in Trial Pits 1 to 6 are presented on the appropriate exploratory hole records presented in Appendix A and indicate that the existing walls of the building are supported on both brick and concrete foundations between 0.45m and >1.50m in thickness placed in the gravelly sand / silty sandy clay deposits.

4.0 In-Situ and Laboratory Tests

4.1 In-Situ Tests

In the essentially cohesive natural soils encountered at the site, in-situ shear vane tests were made at regular depth increments in order to assess the undrained shear strength of the materials. The results indicate that the natural soils are of a generally high strength in accordance with BS 5930 (2015).

The results of the in-situ tests are shown on the appropriate exploratory hole records contained in Appendix A.

Mackintosh Probe tests were made at regular depth increments in order to assess the relative density of the soils encountered in the borehole and trial pits. The results can be interpreted using the generally accepted correlation for Mackintosh Probe Tests which is as follows:

$$\begin{aligned} \text{Mackintosh N75 X 0.38} &= \text{SPT 'N' Value} \\ \text{or} \\ \text{Mackintosh N300 X 0.1} &= \text{SPT 'N' Value} \end{aligned}$$

The results of the in-situ tests are shown on the appropriate exploratory hole records contained in Appendix A.

4.2 Classification Tests

Atterberg Limit tests were conducted on four selected samples taken from the cohesive portion of the natural soils in Borehole 1 and showed the samples tested to fall into Classes CL and CI according to the British Soil Classification System.

The results of the tests are presented on Table 1, contained in Appendix B.

4.3 Sulphate and pH Analyses

The results of the sulphate and pH analyses made on five soil samples are presented within the DETS Report (Ref: 21-00670), contained in Appendix B.

5.0 Ground Gas Assessment

5.1 Assessment of Gas Hazard

Borehole 1 was installed with a standpipe equipped with ground gas monitoring apparatus to a depth of approximately 6.0m below ground level.

The monitoring installation consisted of a 50mm diameter standpipe, which is in accordance with that prescribed to enable correlation with Gas Screening Values (GSVs) derived by CIRIA and the NHBC.

The installation consisted of 1m of plain pipe with a bentonite seal at the surface in order to prevent surface water ingress that could flood the response zone and to prevent atmospheric leakage/ingress. The standpipe was sealed with a bung and valve with a flush fitting stopcock cover.

The frequency of ground gas monitoring on-site was decided in line with recommendations by CIRIA to provide monitoring data sufficient to allow the prediction of worst-case conditions.

Based on a low generation potential and a low sensitivity development and monitoring which was undertaken during a range of climatic conditions, four monitoring visits at the site were considered appropriate.

Ground gas on-site was measured using a LMSx infrared landfill gas analyser. The results are presented in the gas tables, contained in Appendix B.

Atmospheric conditions and the results of the ground gas monitoring (maximum values) from all visits are presented below.

Date	Weather Conditions	Temperature (°C)	Pressure (mb)
21/02/21	Cloudy	+8.0	984
28/01/21	Cloudy	+13.0	999
04/02/21	Cloudy	+8.0	1007
11/02/21	Cloudy	+0.0	1025

Atmospheric Weather Conditions

BH	Flow (l/h)	CH ₄ (%)	CO ₂ (%)	VOC (ppm)	H ₂ S (ppm)	CO (ppm)
BH1	<0.1	<0.1	1.1	0.002	<0.1	<0.1

Gas Monitoring Results

Gas flow through soil occurs either by convection or by diffusion. Convection occurs when total gas pressure is not uniform throughout the system (i.e. when a total pressure gradient exists). Convective flow is in the direction in which total pressure decreases, because gases tend to move from regions of high pressure to regions of low pressure.

Diffusive flow of a gas is in the direction in which its concentration (partial pressure) decreases. The relative pressures recorded in the borehole were very low to negligible and therefore the potential for convective flow is considered to be low. Therefore, any gas flow would have to be via diffusion. This is corroborated by the trend of very low steady state flow rates (maximum of <0.1 l/hr), in many cases being below detection limits. In general, low concentrations of carbon dioxide were returned during the monitoring.

Hydrocarbon Vapours

The underlying made and natural ground across the site was found to be free from visual and olfactory indicators of volatile organic (e.g. hydrocarbon) contamination, which was corroborated by hydrocarbon analysis undertaken on each sample analysed.

As such, the probability for generation of VOC vapours from the underlying Made Ground and natural ground is considered to be low, which was verified by low VOC concentrations detected during gas monitoring.

CO and H₂S

There are currently no GSV for CO or H₂S. Thresholds are only available for occupational exposure limits (OEL). For H₂S, the OELST is 10ppm and OELLT is 5ppm. It should be noted that the OELLT is based upon an 8-hour exposure limit converted to an annual mean and the OELST is based upon 15 minute exposures converted to an annual mean. The concentrations of H₂S measured were below threshold values.

National Ambient Air Quality Standards (NAAQS) were developed by the US EPA under the Clean Air Act from 1990. The Clean Air Act primary standards to provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. The EPA air quality standard is 9ppm CO average over 8 hours, not to be exceeded more than once a year. The concentrations of CO encountered did not exceed the EPA air quality standard.

CH₄ and CO₂ GSV

CIRIA (2007b) and NHBC (2007) provide assessments for CO₂ and CH₄ based upon GSV utilising flow rates and concentrations measured in appropriate standpipes. The GSVs within CIRIA (2007b) are based upon all buildings other than standard residential houses. The NHBC (2007) GSV are based upon standard residential houses with precast concrete floors (block and beam). As such, based upon the assumed end use of the site the GSV within the CIRIA guidance should be adopted. The thresholds for GSV based upon NHBC and CIRIA guidance are summarised below.

CIRIA		NHBC		
Classification	GSV (CH ₄ & CO ₂)	Classification	GSV (CH ₄)	GSV (CO ₂)
CS1	<0.07	Green	<0.13	<0.78
CS2	<0.70	Amber 1	<0.63	<1.60
CS3	<3.5	Amber 2	<1.60	<3.10
CS4	<15	Red	>1.60	>3.10
CS5	<70			
CS6	>70			

Thresholds for GSV

A summary of the monitoring results is provided below, which utilises the highest steady state concentration and highest flow rate at each location in order to adopt a worst-case scenario for the risk assessment.

BH	Flow (l/h)	CH ₄ (%)	CO ₂ (%)	VOC (ppm)	CH ₄ GSV (l/hr)	CO ₂ GSV (l/hr)	Characteristic Situation	NHBC Classification
BH1	<0.1	<0.1	1.1	0.002	<0.01	<0.01	CS1	Green

Summary of Monitoring Results

On-site monitoring has shown maximum emissions of methane in air of <0.1% and carbon dioxide in air of up to 1.1% recorded during the monitoring visits. The maximum borehole flow rate was <0.1 l/h.

As such the maximum Gas Screening Value for methane is <0.01 l/h and the maximum Gas Screening Value for carbon dioxide at site is <0.01 l/h. As such the worst-case value for the site would be <0.01 litres of gas per hour. This typically equates to a Characteristic Situation 1 which does not require gas protection measures.

6.0 Waste Acceptance Criteria Testing

6.1 Waste Acceptance Criteria Analysis

A sample was obtained from 0.25m depth below ground level in Borehole 1 made at the location indicated on the site sketch plan (Figure 1).

The sample selected for analysis was sub-contracted to QTS Environmental Limited (a UKAS and MCERTS accredited laboratory) and their report is contained in Appendix B.

The sample was analysed using the Catwastesoil assessment tool, which concluded that the sample was not hazardous in nature.

The sample was analysed for Waste Acceptance Criteria Testing in order to classify soils on site for disposal purposes.

For the purpose of waste disposal, the soil sample would be classified as:

BH1 - 0.25m Inert Waste

7.0 List of Figures / Appendices

Appendix A – Borehole / Trial Pit Logs

Appendix B – Laboratory Test & Gas/Groundwater Monitoring Data

8.0 References

1. British Standards Institution, 2015. Code of practice for foundations, BS 8004, BSI, London.
2. British Standards Institution, 1990. Methods for test for soils for civil engineering purposes, BS1377, BSI, London
3. British Standards Institution, 1994. Code of practice for earth retaining structures, BS8002, BSI, London
4. British Standards Institution, Code of Practice for Site Investigations, BS5930: 2015, BSI, London
5. British Standards Institution, 2004. Geotechnical Design, BS EN 1997-1 BSI, London
6. NHBC Standards, Chapter 4.1, "Land Quality - managing ground conditions", September 1999.

APPENDIX A

Borehole / Trial Pit Logs

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Borehole Number
BH1

Boring Method CONTINUOUS FLIGHT AUGER	Casing Diameter 100mm cased to 0.00m	Ground Level (mSD) -2.93	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1				-3.06	(0.13)	MADE GROUND: Thin black tiles over reinforced concrete		
0.50	D2				-3.43	(0.37)	MADE GROUND: Brown sandy clay containing brick rubble and tiles		
0.75	D3				-3.63	(0.50)	MADE GROUND: Brown silty sandy clay containing brick fragments		
1.00	D4				-3.93	(0.70)	MADE GROUND: Loose, brown clayey fine to coarse grained sand containing brick fragments		
1.00-1.30	M1 90/300					1.00			
1.50	D5				-4.53	(0.30)	Soft, mottled grey brown slightly gravelly sandy CLAY		
1.50-1.80	M2 53/300					1.60	Firm, light yellow orange brown very sandy CLAY with fine to coarse grained sub-angular flint gravels appearing from 3.50m depth		
2.00	D6								
2.00	V1 64								
2.50	D7								
2.50	V2 62								
3.00	D8					(2.60)			
3.00	V3 66								
3.50	D9								
3.50-3.64	M3 100/140								
4.00	D10				-7.13	4.20	Stiff, mottled brown silty sandy CLAY		
4.00-4.13	M4 100/130					(0.30)			
4.50	D11				-7.43	4.50	Firm becoming stiff, dark grey very silty sandy CLAY. Becomes firm to stiff from 5.50m depth		
4.50	V4 121								
5.00	D12								
5.00	V5 70								
6.00	D13								
6.00	V6 130+								
7.00	D14					(5.50)			
7.00	V7 130+								
8.00	D15								
8.00	V8 130+								
9.00	D16								
9.00	V9 130+								

Remarks D= Disturbed Sample M= Makintosh Probe-Blows/Penetration (mm) V= Vane Test - Results in kPa Groundwater was not encountered during boring/excavation Excavating from 0.00m to 1.00m for 1 hour.	Scale (approx)	Logged By
	1:50	EW
	Figure No. 2133098.BH1	

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Borehole Number
BH1

Boring Method CONTINUOUS FLIGHT AUGER	Casing Diameter 100mm cased to 0.00m	Ground Level (mSD) -2.93	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.00 10.00	D17 V10 130+				-12.93	10.00	Stiff, dark grey very silty sandy CLAY		
11.00 11.00	D18 V11 130+								
12.00 12.00	D19 V12 130+					(5.00)			
13.00 13.00	D20 V13 130+								
14.00 14.00	D21 V14 130+								
15.00 15.00	D22 V15 130+				-17.93	15.00	Complete at 15.00m		

Remarks D= Disturbed Sample M= Makintosh Probe-Blows/Penetration (mm) V= Vane Test - Results in kPa Groundwater was not encountered during boring/excavation	Scale (approx) 1:50	Logged By EW
	Figure No. 2133098.BH1	

Site Analytical Services Ltd.

Site 4 MONTPELIER SQUARE, LONDON, SW7 1JT	Borehole Number BH1
Client AMBRA SRL	Job Number 2133098
Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Installation Type Single Installation	Dimensions Internal Diameter of Tube [A] = 50 mm Diameter of Filter Zone = 100 mm
Location TQ274795	Ground Level (mOD) -2.93

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling														
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)					
					Bentonite Seal															
			-3.93	1.00	Slotted Standpipe	Groundwater Observations During Drilling														
			-9.93	7.00	Bentonite Seal	Instrument Groundwater Observations														
			-10.93	8.00	General Backfill	Inst. [A] Type : Slotted Standpipe														
			-17.93	15.00																

Remarks
Lockable cover set in cement

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP1

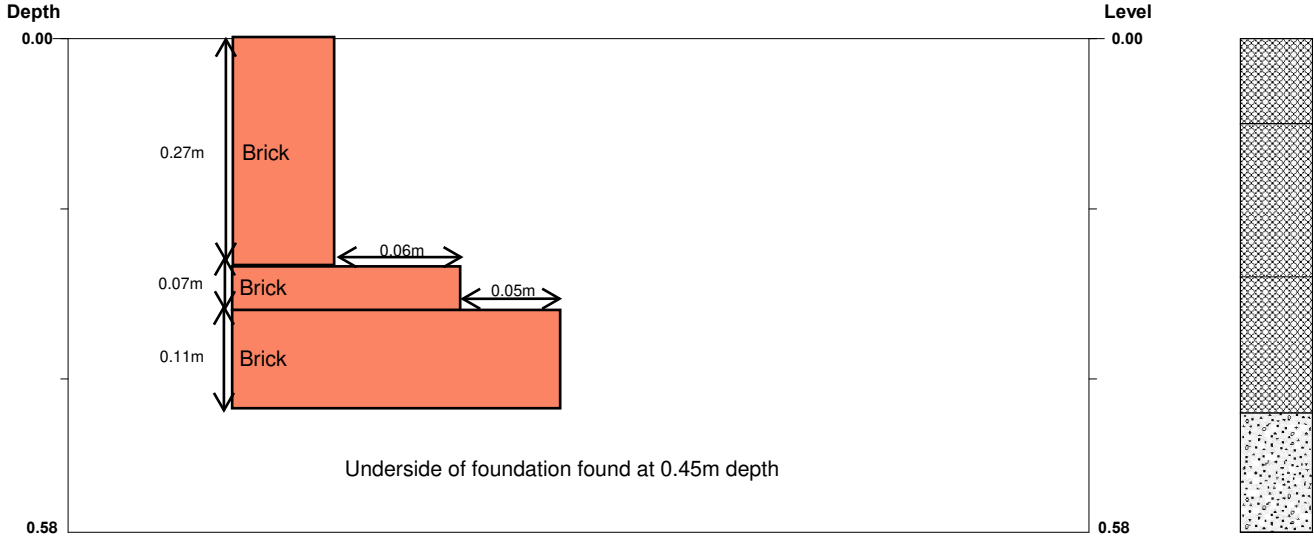
Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 0.58m(D)	Ground Level (mSD) -2.85	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-2.95	0.10	MADE GROUND: Terracotta tiled floor over concrete		
0.30	D2			-3.13	(0.18)	MADE GROUND: Brick rubble and hardcore		
0.45	D3			-3.29	(0.16)	MADE GROUND: Brown fine to coarse grained sand containing brick fragments and roots Medium dense, yellow brown slightly gravelly fine to coarse grained SAND		
0.45-0.58	M1 100/130			-3.43	(0.14)			
					0.58	Complete at 0.58m		

Plan 	Remarks		
	D= Disturbed Sample M= Makintosh Probe-Blows/Penetration (mm) Groundwater was not encountered during boring/excavation		
	Scale (approx)	Logged By	Figure No.
	1:50	EW	2133098.TP1

Site Analytical Services Ltd.

Site 4 MONTPELIER SQUARE, LONDON, SW7 1JT		Trial Pit Number TP1
Method Trial Pit	Dimensions 0.30m(W) x 0.30m(L) x 0.58m(D)	Ground Level (mOD) -2.85
Orientation	Location TQ274795	Dates 13/01/2021
Client AMBRA SRL	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Job Number 2133098
Sheet 1/1		



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.10	1	MADE GROUND: Terracotta tiled floor over concrete			
0.10-0.28	2	MADE GROUND: Brick rubble and hardcore	0.25	D1	
0.28-0.44	3	MADE GROUND: Brown fine to coarse grained sand containing brick fragments and roots	0.30	D2	
0.44-0.58	4	Medium dense, yellow brown slightly gravelly fine to coarse grained SAND	0.45 0.45-0.58	D3 M1 100/130	

Excavation Method:
HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks
D= Disturbed Sample
M= Makintosh Probe-Blows/Penetration (mm)
Groundwater was not encountered during boring/excavation

Logged By : EW
Checked By :
Figure No. : 2133098.TP1

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP2A

Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 1.20m(D)	Ground Level (mSD) -2.85	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-2.94	0.09	MADE GROUND: Concrete		
0.50	D2			-3.01	0.16 (0.54)	MADE GROUND: York stone		
0.75	D3			-3.55	0.70	MADE GROUND: Brown sandy clay containing brick fragments		
0.90	D4			-4.05	0.50	Medium dense, mottled brown slightly gravelly fine to coarse grained SAND		
0.90-1.20	M1 150/300				1.20	Complete at 1.20m		

Plan .	Remarks D= Disturbed Sample M= Makintosh Probe-Blows/Penetration (mm) Groundwater was not encountered during boring/excavation		
	<table border="1"> <tr> <td>Scale (approx) 1:50</td> <td>Logged By EW</td> <td>Figure No. 2133098.TP2A</td> </tr> </table>	Scale (approx) 1:50	Logged By EW
Scale (approx) 1:50	Logged By EW	Figure No. 2133098.TP2A	

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP2A

Method
Trial Pit

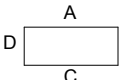
Dimensions
0.30m(W) x 0.30m(L) x 1.20m(D)

Ground Level (mOD)
-2.85

Client
AMBRA SRL

Job Number
2133098

Orientation

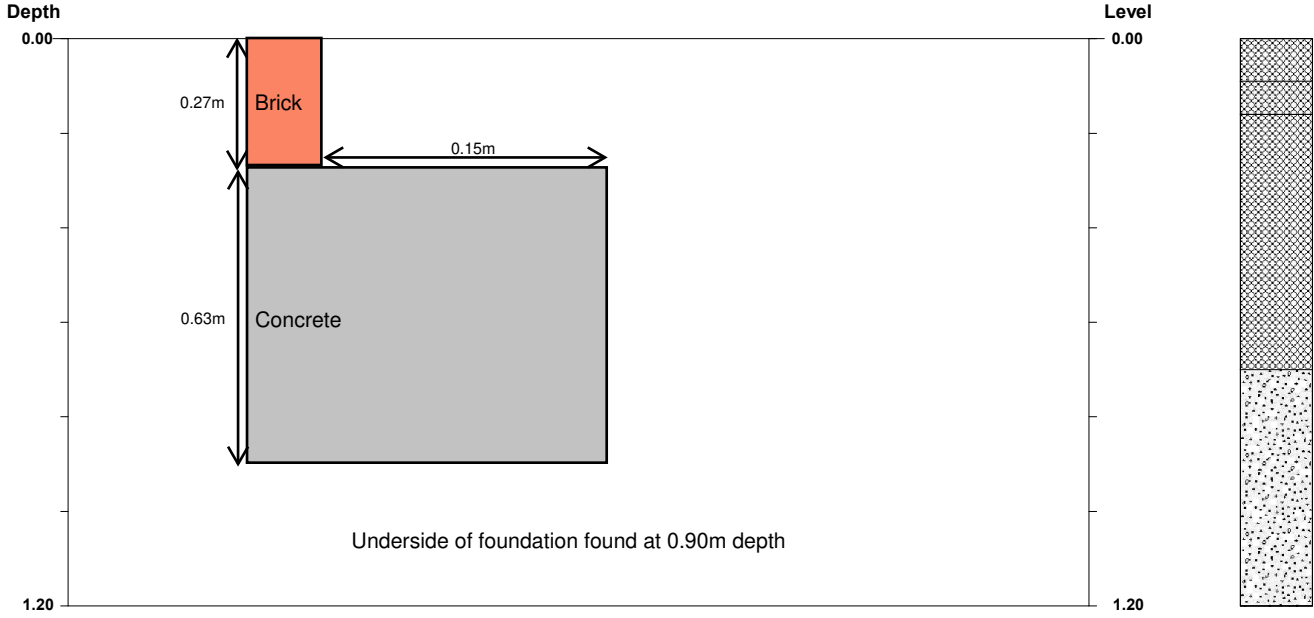


Location
TQ274795

Dates
13/01/2021

Engineer
ELLIOTTWOOD PARTNERSHIP LIMITED

Sheet
1/1



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.09	1	MADE GROUND: Concrete			
0.09-0.16	2	MADE GROUND: York stone			
0.16-0.70	3	MADE GROUND: Brown sandy clay containing brick fragments	0.25	D1	
			0.50	D2	
			0.75	D3	
			0.90	D4	
0.70-1.20	4	Medium dense, mottled brown slightly gravelly fine to coarse grained SAND	0.90-1.20	M1 150/300	

Excavation Method:
HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks
D= Disturbed Sample
M= Makintosh Probe-Blows/Penetration (mm)
Groundwater was not encountered during boring/excavation





Logged By : EW
Checked By :
Figure No. : 2133098.TP2A

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP2B

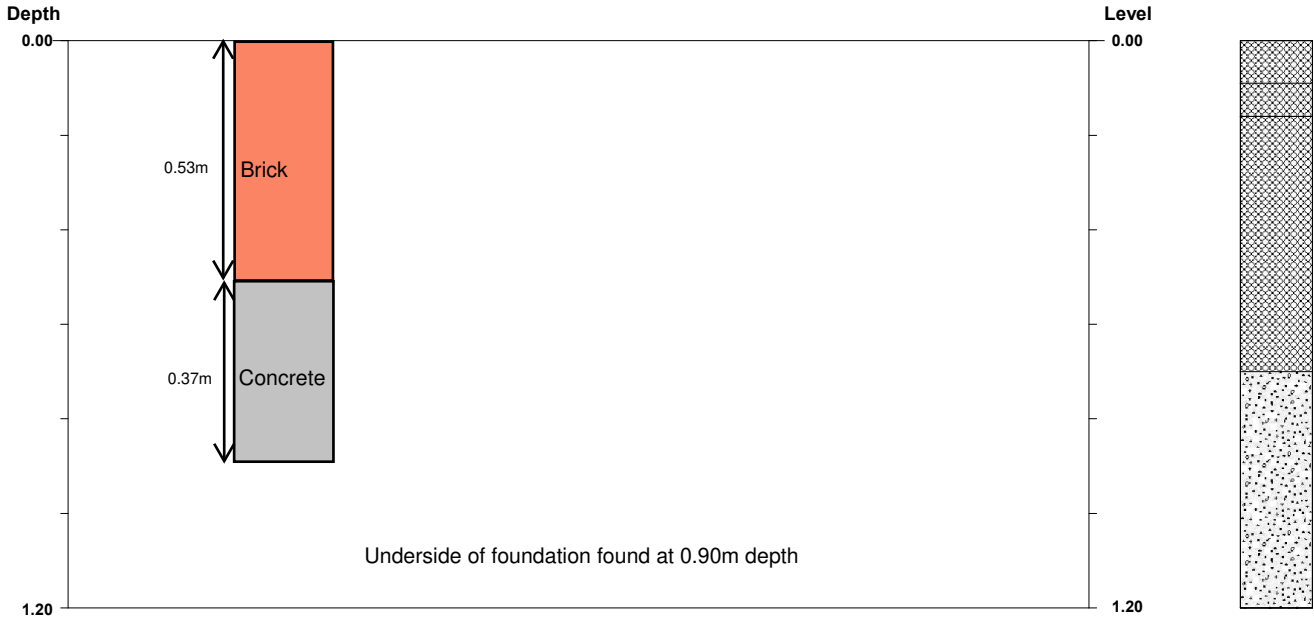
Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 1.20m(D)	Ground Level (mSD) -2.85	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-2.94	0.09	MADE GROUND: Concrete		
0.50	D2			-3.01	0.16 (0.54)	MADE GROUND: York stone		
0.75	D3			-3.55	0.70	MADE GROUND: Brown sandy clay containing brick fragments		
0.90	D4			-4.05	0.50	Medium dense, mottled brown slightly gravelly fine to coarse grained SAND		
0.90-1.20	M1 150/300				1.20	Complete at 1.20m		

Plan .	Remarks D= Disturbed Sample M= Makintosh Probe-Blows/Penetration (mm) Groundwater was not encountered during boring/excavation		
	<table border="1"> <tr> <td>Scale (approx) 1:50</td> <td>Logged By EW</td> <td>Figure No. 2133098.TP2B</td> </tr> </table>	Scale (approx) 1:50	Logged By EW
Scale (approx) 1:50	Logged By EW	Figure No. 2133098.TP2B	

Site Analytical Services Ltd.

Site 4 MONTPELIER SQUARE, LONDON, SW7 1JT	Trial Pit Number TP2B
Method Trial Pit	Dimensions 0.30m(W) x 0.30m(L) x 1.20m(D)
Ground Level (mOD) -2.85	Client AMBRA SRL
Orientation	Location TQ274795
Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED
Job Number 2133098	Sheet 1/1



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.09	1	MADE GROUND: Concrete			
0.09-0.16	2	MADE GROUND: York stone			
0.16-0.70	3	MADE GROUND: Brown sandy clay containing brick fragments	0.25	D1	
			0.50	D2	
			0.75	D3	
			0.90	D4	
0.70-1.20	4	Medium dense, mottled brown slightly gravelly fine to coarse grained SAND	0.90-1.20	M1 150/300	

Excavation Method:
HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks
D= Disturbed Sample
M= Makintosh Probe-Blows/Penetration (mm)
Groundwater was not encountered during boring/excavation

Logged By : EW
Checked By :
Figure No. : 2133098.TP2B

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP3A

Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 1.50m(D)	Ground Level (mSD) -2.94	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 12/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-2.95	0.01	MADE GROUND: Thin black tiles		
0.50	D2			-3.14	(0.19)	MADE GROUND: Concrete		
0.75	D3				(1.30)	MADE GROUND: Brown sandy clay containing brick rubble		
1.00	D4							
1.25	D5							
1.40	D6			-4.44	1.50	Complete at 1.50m		

Plan 	Remarks D= Disturbed Sample Groundwater was not encountered during boring/excavation		
		<table border="1"> <tr> <td>Scale (approx) 1:50</td> <td>Logged By EW</td> <td>Figure No. 2133098.TP3A</td> </tr> </table>	Scale (approx) 1:50
Scale (approx) 1:50	Logged By EW	Figure No. 2133098.TP3A	

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP3A

Method
Trial Pit

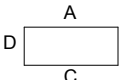
Dimensions
0.30m(W) x 0.30m(L) x 1.50m(D)

Ground Level (mOD)
-2.94

Client
AMBRA SRL

Job Number
2133098

Orientation

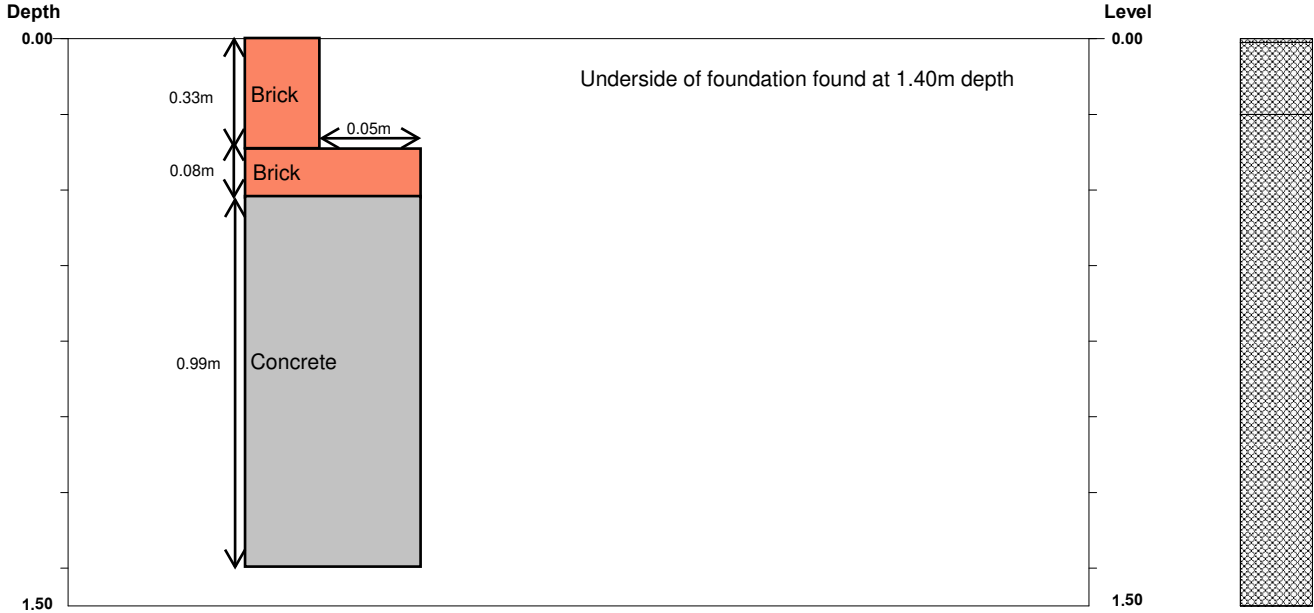


Location
TQ274795

Dates
12/01/2021

Engineer
ELLIOTTWOOD PARTNERSHIP LIMITED

Sheet
1/1



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.01	1	MADE GROUND: Thin black tiles			
0.01-0.20	2	MADE GROUND: Concrete			
0.20-1.50	3	MADE GROUND: Brown sandy clay containing brick rubble	0.25	D1	
			0.50	D2	
			0.75	D3	
			1.00	D4	
			1.25	D5	
			1.40	D6	

Excavation Method:
HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks
D= Disturbed Sample
Groundwater was not encountered during boring/excavation

Logged By : EW
Checked By :
Figure No. : 2133098.TP3A

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP3B

Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 1.50m(D)	Ground Level (mSD) -2.94	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 12/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-2.95	0.01	MADE GROUND: Thin black tiles		
0.50	D2			-3.14	(0.19)	MADE GROUND: Concrete		
0.75	D3				(1.30)	MADE GROUND: Brown sandy clay containing brick rubble		
1.00	D4							
1.25	D5							
1.40	D6			-4.44	1.50	Complete at 1.50m		

Plan 	Remarks D= Disturbed Sample Groundwater was not encountered during boring/excavation		
		<table border="1"> <tr> <td>Scale (approx) 1:50</td> <td>Logged By EW</td> <td>Figure No. 2133098.TP3B</td> </tr> </table>	Scale (approx) 1:50
Scale (approx) 1:50	Logged By EW	Figure No. 2133098.TP3B	

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP3B

Method
Trial Pit

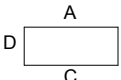
Dimensions
0.30m(W) x 0.30m(L) x 1.50m(D)

Ground Level (mOD)
-2.94

Client
AMBRA SRL

Job Number
2133098

Orientation

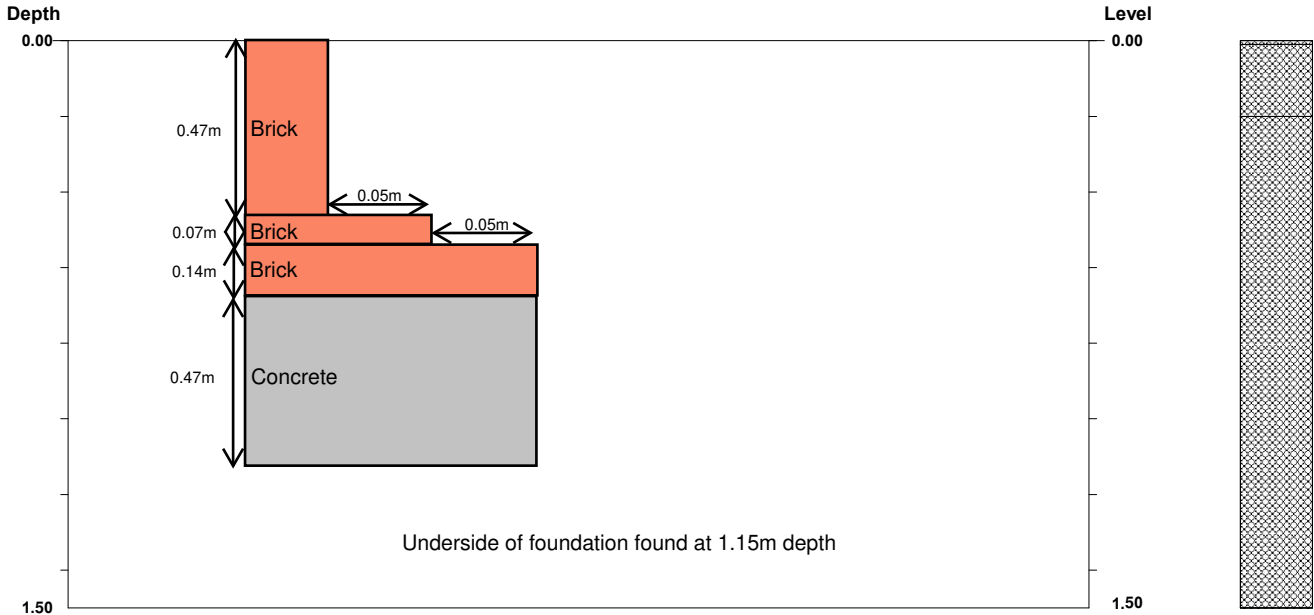


Location
TQ274795

Dates
12/01/2021

Engineer
ELLIOTTWOOD PARTNERSHIP LIMITED

Sheet
1/1



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.01	1	MADE GROUND: Thin black tiles			
0.01-0.20	2	MADE GROUND: Concrete			
0.20-1.50	3	MADE GROUND: Brown sandy clay containing brick rubble	0.25	D1	
			0.50	D2	
			0.75	D3	
			1.00	D4	
			1.25	D5	
			1.40	D6	

Excavation Method:
HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks
D= Disturbed Sample
Groundwater was not encountered during boring/excavation

Logged By : EW
Checked By :
Figure No. : 2133098.TP3B

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP4A

Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 1.50m(D)	Ground Level (mSD) -2.85	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-2.86	0.01	MADE GROUND: Thin black tiles		
0.50	D2			-3.05	(0.19) 0.20	MADE GROUND: Concrete		
0.75	D3				(0.90)	MADE GROUND: Brown sandy clay containing occasional brick fragments and roots		
1.00	D4			-3.95	1.10	Mottled brown grey sandy CLAY		
1.25 1.40	D5 D6			-4.35	(0.40) 1.50	Complete at 1.50m		

Plan 	Remarks D= Disturbed Sample Groundwater was not encountered during boring/excavation		
		<table border="1"> <tr> <td>Scale (approx) 1:50</td> <td>Logged By EW</td> <td>Figure No. 2133098.TP4A</td> </tr> </table>	Scale (approx) 1:50
Scale (approx) 1:50	Logged By EW	Figure No. 2133098.TP4A	

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP4A

Method
Trial Pit

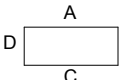
Dimensions
0.30m(W) x 0.30m(L) x 1.50m(D)

Ground Level (mOD)
-2.85

Client
AMBRA SRL

Job Number
2133098

Orientation

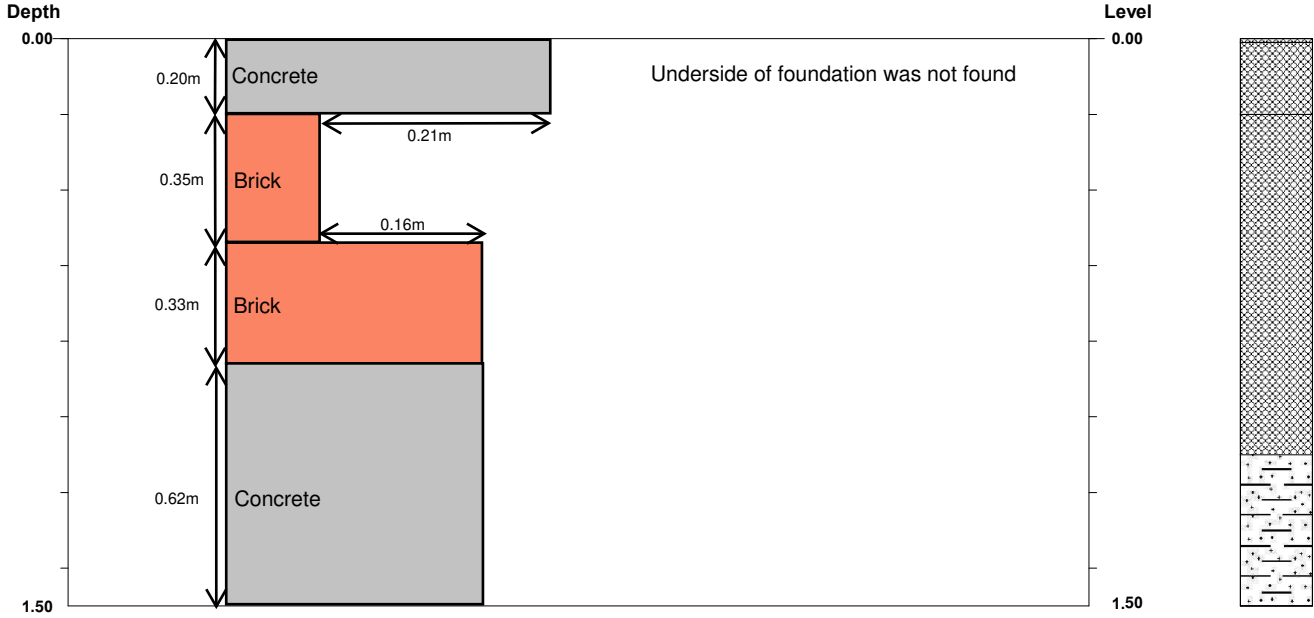


Location
TQ274795

Dates
13/01/2021

Engineer
ELLIOTTWOOD PARTNERSHIP LIMITED

Sheet
1/1



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.01	1	MADE GROUND: Thin black tiles			
0.01-0.20	2	MADE GROUND: Concrete			
0.20-1.10	3	MADE GROUND: Brown sandy clay containing occasional brick fragments and roots	0.25	D1	
			0.50	D2	
			0.75	D3	
			1.00	D4	
1.10-1.50	4	Mottled brown grey sandy CLAY	1.25	D5	
			1.40	D6	

Excavation Method:
HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks
D= Disturbed Sample
Groundwater was not encountered during boring/excavation

Logged By : EW
Checked By :
Figure No. : 2133098.TP4A

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP4B

Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 1.50m(D)	Ground Level (mSD) -2.85	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-2.86	0.01	MADE GROUND: Thin black tiles		
0.50	D2			-3.05	(0.19) 0.20	MADE GROUND: Concrete		
0.75	D3				(0.90)	MADE GROUND: Brown sandy clay containing occasional brick fragments and roots		
1.00	D4			-3.95	1.10	Mottled brown grey sandy CLAY		
1.25 1.40	D5 D6			-4.35	(0.40) 1.50	Complete at 1.50m		

Plan 	Remarks D= Disturbed Sample Groundwater was not encountered during boring/excavation		
		<table border="1"> <tr> <td>Scale (approx) 1:50</td> <td>Logged By EW</td> <td>Figure No. 2133098.TP4B</td> </tr> </table>	Scale (approx) 1:50
Scale (approx) 1:50	Logged By EW	Figure No. 2133098.TP4B	

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP4B

Method
Trial Pit

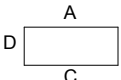
Dimensions
0.30m(W) x 0.30m(L) x 1.50m(D)

Ground Level (mOD)
-2.85

Client
AMBRA SRL

Job Number
2133098

Orientation

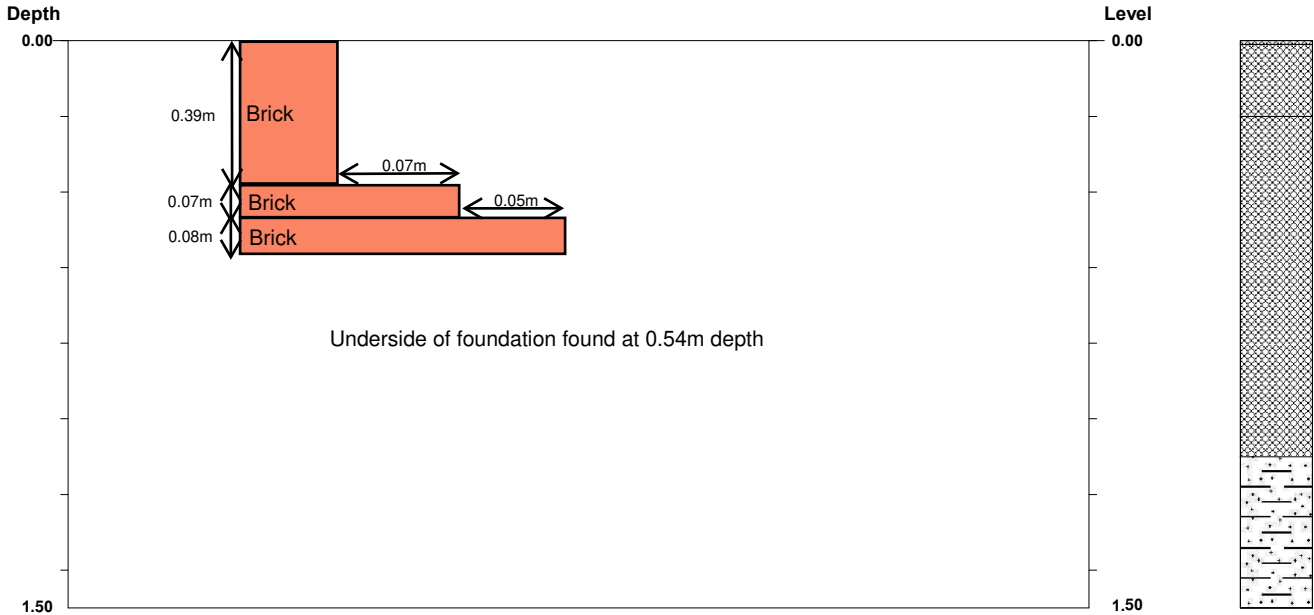


Location
TQ274795

Dates
13/01/2021

Engineer
ELLIOTTWOOD PARTNERSHIP LIMITED

Sheet
1/1



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.01	1	MADE GROUND: Thin black tiles			
0.01-0.20	2	MADE GROUND: Concrete			
0.20-1.10	3	MADE GROUND: Brown sandy clay containing occasional brick fragments and roots	0.25	D1	
			0.50	D2	
			0.75	D3	
			1.00	D4	
1.10-1.50	4	Mottled brown grey sandy CLAY	1.25	D5	
			1.40	D6	

Excavation Method:
HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks
D= Disturbed Sample
Groundwater was not encountered during boring/excavation





Logged By : EW
Checked By :
Figure No. : 2133098.TP4B

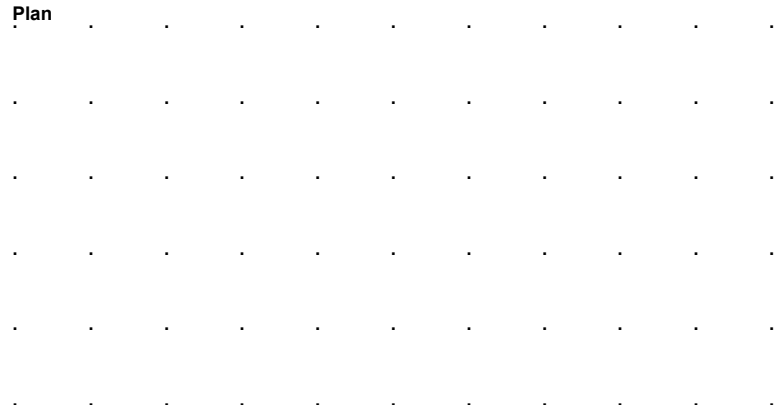
Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP5

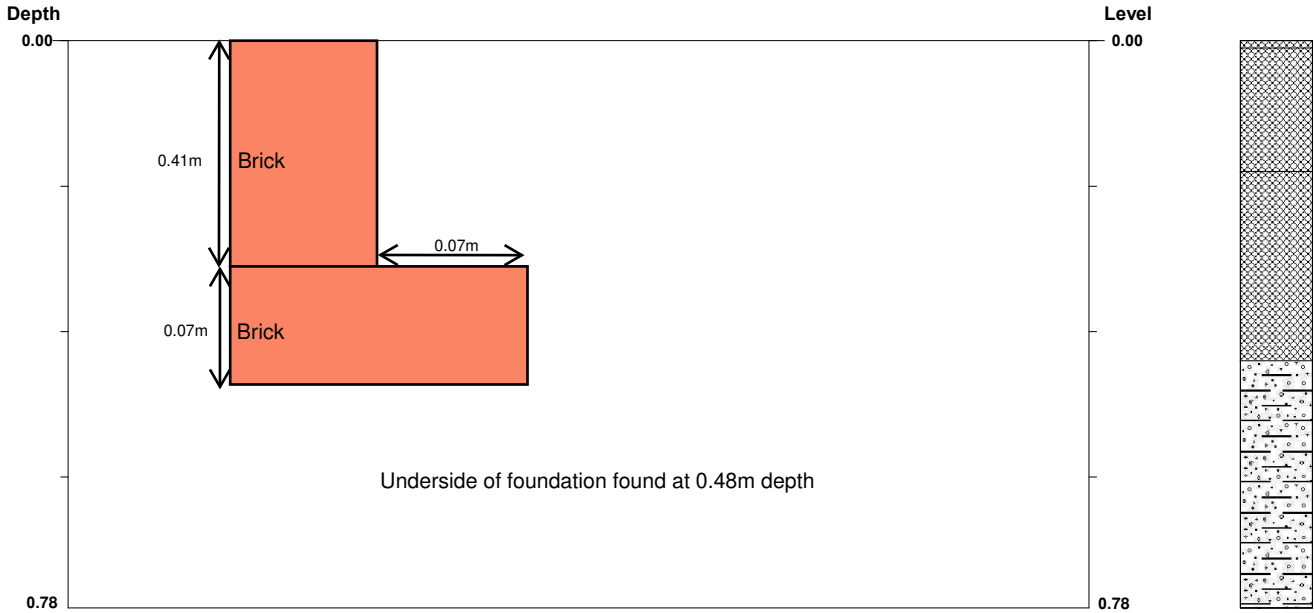
Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 0.78m(D)	Ground Level (mSD) -2.85	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 12/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-2.86	0.01	MADE GROUND: Terracotta tiled floor over concrete		
0.48	D2			-3.03	(0.17)	MADE GROUND: Concrete		
0.48	V1 60			-3.29	0.44	MADE GROUND: Brown sandy clay containing brick rubble		
0.48-0.78	M1 80/300			-3.63	0.78	Firm, mottled grey brown slightly gravelly sandy CLAY		
						Complete at 0.78m		

Plan 	Remarks D= Disturbed Sample M= Makintosh Probe-Blows/Penetration (mm) V= Vane Test - Results in kPa Groundwater was not encountered during boring/excavation		
	Scale (approx) 1:50	Logged By EW	Figure No. 2133098.TP5

Site Analytical Services Ltd.

Site 4 MONTPELIER SQUARE, LONDON, SW7 1JT	Trial Pit Number TP5
Method Trial Pit	Dimensions 0.30m(W) x 0.30m(L) x 0.78m(D)
Ground Level (mOD) -2.85	Client AMBRA SRL
Orientation 	Location TQ274795
Dates 12/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED
Job Number 2133098	
Sheet 1/1	



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.01	1	MADE GROUND: Terracotta tiled floor over concrete			
0.01-0.18	2	MADE GROUND: Concrete			
0.18-0.44	3	MADE GROUND: Brown sandy clay containing brick rubble	0.25	D1	
0.44-0.78	4	Firm, mottled grey brown slightly gravelly sandy CLAY	0.48	D2	
			0.48	V1 60	
			0.48-0.78	M1 80/300	

Excavation Method:

HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks

D= Disturbed Sample
M= Makintosh Probe-Blows/Penetration (mm)
V= Vane Test - Results in kPa
Groundwater was not encountered during boring/excavation

Logged By : EW
Checked By :
Figure No. : 2133098.TP5

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP6A

Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 1.50m(D)	Ground Level (mSD) -1.18	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

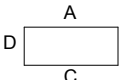
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-1.19	0.01	MADE GROUND: Thin black tiles		
0.50	D2			-1.33	0.15	MADE GROUND: Sand and cement		
0.75	D3				(1.35)	MADE GROUND: Brown gravelly sandy clay containing brick rubble and numerous roots		
1.00	D4							
1.25	D5							
1.50	D6			-2.68	1.50	Complete at 1.50m		

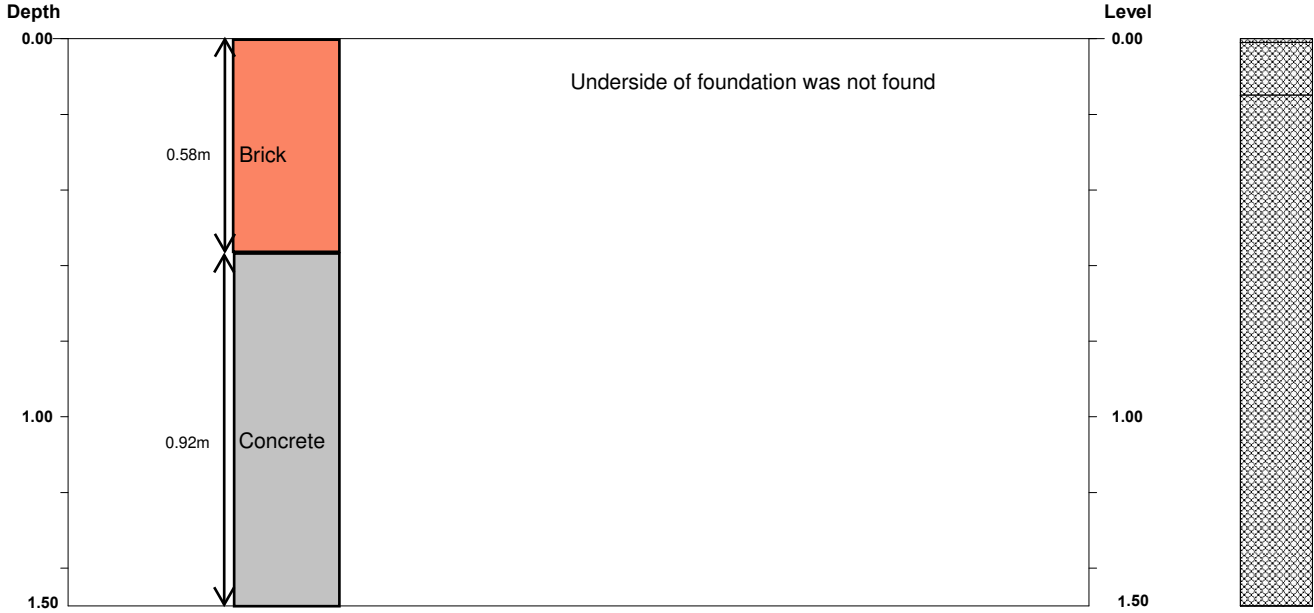
Plan .	Remarks D= Disturbed Sample Groundwater was not encountered during boring/excavation		
	<table border="1"> <tr> <td>Scale (approx) 1:50</td> <td>Logged By EW</td> <td>Figure No. 2133098.TP6A</td> </tr> </table>	Scale (approx) 1:50	Logged By EW
Scale (approx) 1:50	Logged By EW	Figure No. 2133098.TP6A	

Site Analytical Services Ltd.

Site 4 MONTPELIER SQUARE, LONDON, SW7 1JT	Trial Pit Number TP6A
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Method Trial Pit	Dimensions 0.30m(W) x 0.30m(L) x 1.50m(D)	Ground Level (mOD) -1.18	Client AMBRA SRL	Job Number 2133098
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Orientation 	Location TQ274795	Dates 13/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1
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Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.01	1	MADE GROUND: Thin black tiles			
0.01-0.15	2	MADE GROUND: Sand and cement			
0.15-1.50	3	MADE GROUND: Brown gravelly sandy clay containing brick rubble and numerous roots	0.25 0.50 0.75 1.00 1.25 1.50	D1 D2 D3 D4 D5 D6	

Excavation Method:
HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks
D= Disturbed Sample
Groundwater was not encountered during boring/excavation

Logged By : EW
Checked By :
Figure No. : 2133098.TP6A

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP6B

Excavation Method HAND EXCAVATION	Dimensions 0.30m(W) x 0.30m(L) x 1.50m(D)	Ground Level (mSD) -1.18	Client AMBRA SRL	Job Number 2133098
	Location TQ274795	Dates 12/01/2021	Engineer ELLIOTTWOOD PARTNERSHIP LIMITED	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.25	D1			-1.19	0.02	MADE GROUND: Thin black tiles		
0.50	D2			-1.33	0.13	MADE GROUND: Sand and cement		
0.75	D3				(1.35)	MADE GROUND: Brown gravelly sandy clay containing brick rubble and numerous roots		
1.00	D4							
1.25	D5							
1.50	D6			-2.68	1.50	Complete at 1.50m		

Plan .	Remarks D= Disturbed Sample Groundwater was not encountered during boring/excavation		
	<table border="1"> <tr> <td>Scale (approx) 1:50</td> <td>Logged By EW</td> <td>Figure No. 2133098.TP6B</td> </tr> </table>	Scale (approx) 1:50	Logged By EW
Scale (approx) 1:50	Logged By EW	Figure No. 2133098.TP6B	

Site Analytical Services Ltd.

Site
4 MONTPELIER SQUARE, LONDON, SW7 1JT

Trial Pit Number
TP6B

Method
Trial Pit

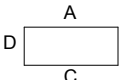
Dimensions
0.30m(W) x 0.30m(L) x 1.50m(D)

Ground Level (mOD)
-1.18

Client
AMBRA SRL

Job Number
2133098

Orientation

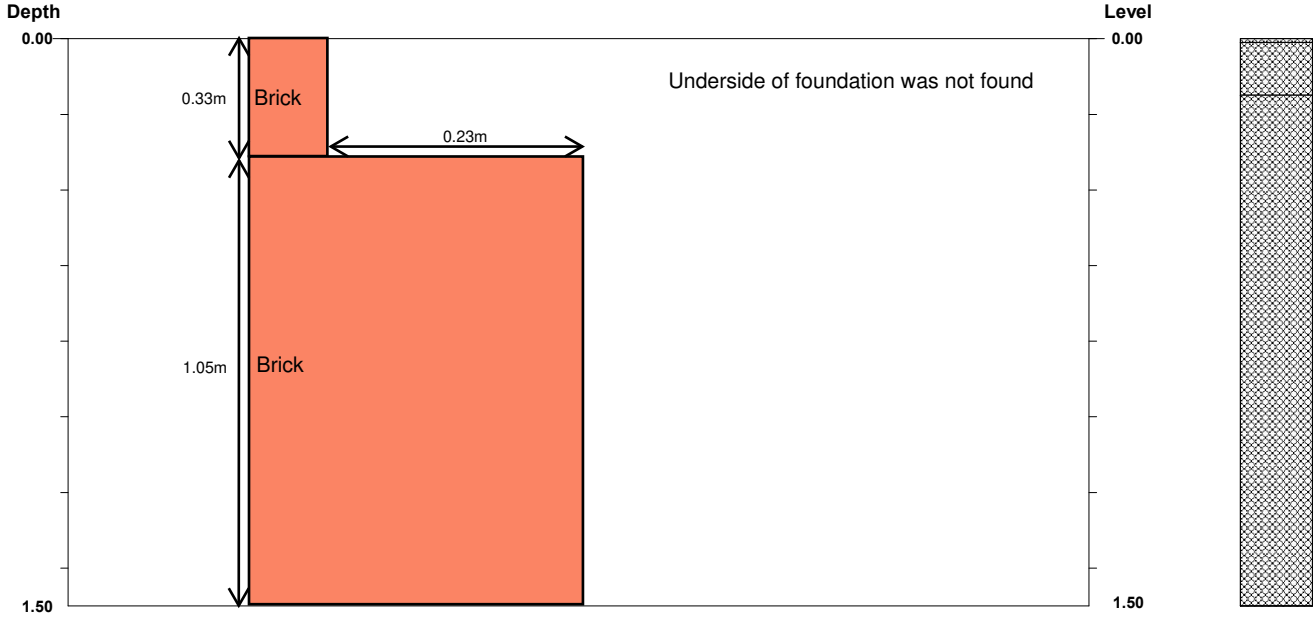


Location
TQ274795

Dates
12/01/2021

Engineer
ELLIOTTWOOD PARTNERSHIP LIMITED

Sheet
1/1



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Field Records
0.00-0.01	1	MADE GROUND: Thin black tiles			
0.01-0.15	2	MADE GROUND: Sand and cement			
0.15-1.50	3	MADE GROUND: Brown gravelly sandy clay containing brick rubble and numerous roots	0.25 0.50 0.75 1.00 1.25 1.50	D1 D2 D3 D4 D5 D6	

Excavation Method:
HAND EXCAVATION

Shoring / Support:

Stability:

Backfill:

Remarks
D= Disturbed Sample
Groundwater was not encountered during boring/excavation

Logged By : EW
Checked By :
Figure No. : 2133098.TP6B

APPENDIX B

Laboratory Test & Gas/Groundwater Monitoring Data

PLASTICITY INDEX & MOISTURE CONTENT DETERMINATIONS

BH/TP No.	Depth (m)	Natural Moisture (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 μ m (%)	Modified Plasticity Index (%)	Class
BH1	1.00	25	42	20	22	100	22	CI
	2.00	25	42	22	20	100	20	CI
	3.00	18	29	17	12	100	21	CL
	4.00	12	37	15	22	80	18	CI

Table 1

GAS MONITORING (1/4)

DATE: 21/01/2021

Weather Conditions:

Cloudy

Ground Conditions:

Dry

Temperature (°C):

8.0

Barometric Pressure (mbar):

984

Barometric Pressure Trend (24hr):

Ambient O2:

21.5%

Monitoring Point Location	Flow	Atmospheric Pressure (mbar)	Methane %	Carbon Dioxide %	Oxygen %	VOC (ppm)	Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to water (bgl)	Depth to Base of well (bgl)
BH1	<0.1	984	<0.1	0.9	19.7	0.001	<0.1	<0.1	4.16	6.84

Table 2

GAS MONITORING (2/4)

DATE: 28/01/2021

Weather Conditions:	Ground Conditions:	Temperature (°C):
Cloudy	Wet	13.0

Barometric Pressure (mbar):	Barometric Pressure Trend (24hr):	Ambient O2:
999		21.6%

Monitoring Point Location	Flow	Atmospheric Pressure (mbar)	Methane %	Carbon Dioxide %	Oxygen %	VOC (ppm)	Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to water (bgl)	Depth to Base of well (bgl)
BH1	<0.1	999	<0.1	1.1	19.1	0.002	<0.1	<0.1	4.11	6.84

Table 2a

GAS MONITORING (3/4)

DATE: 04/02/2021

Weather Conditions:	Ground Conditions:	Temperature (°C):
Cloudy	Dry	8.0

Barometric Pressure (mbar):	Barometric Pressure Trend (24hr):	Ambient O2:
1007		21.6%

Monitoring Point Location	Flow	Atmospheric Pressure (mbar)	Methane %	Carbon Dioxide %	Oxygen %	VOC (ppm)	Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to water (bgl)	Depth to Base of well (bgl)
BH1	<0.1	1007	<0.1	0.6	20.5	0.000	<0.1	<0.1	4.07	6.01

Table 4b

GAS MONITORING (4/4)

DATE: 11/02/2021

Weather Conditions:	Ground Conditions:	Temperature (°C):
Cold and Cloudy	Ice covered	0.0

Barometric Pressure (mbar):	Barometric Pressure Trend (24hr):	Ambient O2:
1025		21.4%

Monitoring Point Location	Flow	Atmospheric Pressure (mbar)	Methane %	Carbon Dioxide %	Oxygen %	VOC (ppm)	Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to water (bgl)	Depth to Base of well (bgl)
BH1	<0.1	1025	<0.1	0.4	20.3	0.000	<0.1	<0.1	4.05	6.01

Table 4c



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t: 01622 850410

DETS Report No: 21-00670

Site Reference: 4 Montpelier Square

Project / Job Ref: 21/33098

Order No: 8138

Sample Receipt Date: 21/01/2021

Sample Scheduled Date: 21/01/2021

Report Issue Number: 1

Reporting Date: 27/01/2021

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Soil Analysis Certificate						
DETS Report No: 21-00670	Date Sampled	13/01/21	13/01/21	13/01/21	13/01/21	13/01/21
Site Analytical Services Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: 4 Montpelier Square	TP / BH No	BH1	BH1	BH1	BH1	BH1
Project / Job Ref: 21/33098	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 8138	Depth (m)	1.50	2.50	4.50	8.00	12.00
Reporting Date: 27/01/2021	DETS Sample No	521421	521422	521423	521424	521425

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	MCERTS	7.9	7.3	7.6	7.9	8.0
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	178	57	168	207	240
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.18	0.06	0.17	0.21	0.24

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)



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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 21-00670	
Site Analytical Services Ltd	
Site Reference: 4 Montpelier Square	
Project / Job Ref: 21/33098	
Order No: 8138	
Reporting Date: 27/01/2021	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
521421	BH1	None Supplied	1.50	12.3	Brown sandy clay with stones
521422	BH1	None Supplied	2.50	13.8	Brown sandy clay
521423	BH1	None Supplied	4.50	14.8	Brown sandy clay
521424	BH1	None Supplied	8.00	19.5	Brown clay
521425	BH1	None Supplied	12.00	19.6	Brown clay

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{u/s}

Unsuitable Sample ^{u/s}

Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 21-00670
Site Analytical Services Ltd
Site Reference: 4 Montpelier Square
Project / Job Ref: 21/33098
Order No: 8138
Reporting Date: 27/01/2021

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, C21-C34, C21-C35) aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received



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DETS Report No: 21-00669

Site Reference: 4 Montpelier Square

Project / Job Ref: 21/33098

Order No: 8138

Sample Receipt Date: 21/01/2021

Sample Scheduled Date: 21/01/2021

Report Issue Number: 1

Reporting Date: 27/01/2021

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Soil Analysis Certificate					
DETS Report No: 21-00669	Date Sampled	None Supplied			
Site Analytical Services Ltd	Time Sampled	None Supplied			
Site Reference: 4 Montpelier Square	TP / BH No	BH1			
Project / Job Ref: 21/33098	Additional Refs	None Supplied			
Order No: 8138	Depth (m)	0.25			
Reporting Date: 27/01/2021	DETS Sample No	521420			

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected			
pH	pH Units	N/a	MCERTS	11.2			
Total Cyanide	mg/kg	< 2	NONE	< 2			
Complex Cyanide	mg/kg	< 2	NONE	< 2			
Free Cyanide	mg/kg	< 2	NONE	< 2			
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	2275			
Total Sulphate as SO ₄	%	< 0.02	MCERTS	0.23			
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	171			
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.17			
Sulphide	mg/kg	< 5	NONE	< 5			
Organic Matter	%	< 0.1	MCERTS	0.3			
Total Organic Carbon (TOC)	%	< 0.1	MCERTS	0.2			
Arsenic (As)	mg/kg	< 2	MCERTS	12			
W/S Boron	mg/kg	< 1	NONE	< 1			
Cadmium (Cd)	mg/kg	< 0.2	NONE	< 0.2			
Chromium (Cr)	mg/kg	< 2	MCERTS	19			
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	25			
Lead (Pb)	mg/kg	< 3	MCERTS	1230			
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1			
Nickel (Ni)	mg/kg	< 3	MCERTS	11			
Selenium (Se)	mg/kg	< 2	MCERTS	< 3			
Zinc (Zn)	mg/kg	< 3	MCERTS	89			
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-00669	Date Sampled	None Supplied				
Site Analytical Services Ltd	Time Sampled	None Supplied				
Site Reference: 4 Montpelier Square	TP / BH No	BH1				
Project / Job Ref: 21/33098	Additional Refs	None Supplied				
Order No: 8138	Depth (m)	0.25				
Reporting Date: 27/01/2021	DETS Sample No	521420				

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1			
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1			
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluoranthene	mg/kg	< 0.1	MCERTS	0.14			
Pyrene	mg/kg	< 0.1	MCERTS	0.12			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1			
Coronene	mg/kg	< 0.1	NONE	< 0.1			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6			
Total WAC-17 PAHs	mg/kg	< 1.7	NONE	< 1.7			



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-00669	Date Sampled	None Supplied				
Site Analytical Services Ltd	Time Sampled	None Supplied				
Site Reference: 4 Montpelier Square	TP / BH No	BH1				
Project / Job Ref: 21/33098	Additional Refs	None Supplied				
Order No: 8138	Depth (m)	0.25				
Reporting Date: 27/01/2021	DETS Sample No	521420				

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01			
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05			
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3			
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3			
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10			
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21			
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01			
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05			
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2			
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2			
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2			
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3			
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10			
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21			
Total >C5 - C35	mg/kg	< 42	NONE	< 42			



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-00669	Date Sampled	None Supplied				
Site Analytical Services Ltd	Time Sampled	None Supplied				
Site Reference: 4 Montpelier Square	TP / BH No	BH1				
Project / Job Ref: 21/33098	Additional Refs	None Supplied				
Order No: 8138	Depth (m)	0.25				
Reporting Date: 27/01/2021	DETS Sample No	521420				

Determinand	Unit	RL	Accreditation				
Benzene	ug/kg	< 2	MCERTS	< 2			
Toluene	ug/kg	< 5	MCERTS	< 5			
Ethylbenzene	ug/kg	< 2	MCERTS	< 2			
p & m-xylene	ug/kg	< 2	MCERTS	5			
o-xylene	ug/kg	< 2	MCERTS	< 2			
MTBE	ug/kg	< 5	MCERTS	< 5			

Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3									
DETS Report No: 21-00669		Date Sampled	None Supplied			Landfill Waste Acceptance Criteria Limits			
Site Analytical Services Ltd		Time Sampled	None Supplied						
Site Reference: 4 Montpelier Square		TP / BH No	BH1						
Project / Job Ref: 21/33098		Additional Refs	None Supplied						
Order No: 8138		Depth (m)	0.25						
Reporting Date: 27/01/2021		DETS Sample No	521420						
Determinand	Unit	MDL				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
TOC ^{MU}	%	< 0.1	0.2			3%	5%	6%	
Loss on Ignition	%	< 0.01	1.90			--	--	10%	
BTEX ^{MU}	mg/kg	< 0.05	< 0.05			6	--	--	
Sum of PCBs	mg/kg	< 0.1	< 0.1			1	--	--	
Mineral Oil ^{MU}	mg/kg	< 10	< 10			500	--	--	
Total PAH ^{MU}	mg/kg	< 1.7	< 1.7			100	--	--	
pH ^{MU}	pH Units	N/a	11.2			--	>6	--	
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1			--	To be evaluated	To be evaluated	
Eluate Analysis			2:1 mg/l	8:1 mg/l		Cumulative 10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic ^U			< 0.01	< 0.01		< 0.2	0.5	2	25
Barium ^U			< 0.02	< 0.02		< 0.1	20	100	300
Cadmium ^U			< 0.0005	< 0.0005		< 0.02	0.04	1	5
Chromium ^U			0.068	0.014		< 0.20	0.5	10	70
Copper ^U			0.07	0.03		< 0.5	2	50	100
Mercury ^U			< 0.0005	< 0.0005		< 0.005	0.01	0.2	2
Molybdenum ^U			0.050	0.009		0.1	0.5	10	30
Nickel ^U			< 0.007	< 0.007		< 0.2	0.4	10	40
Lead ^U			< 0.005	< 0.005		< 0.2	0.5	10	50
Antimony ^U			< 0.005	< 0.005		< 0.05	0.06	0.7	5
Selenium ^U			< 0.005	< 0.005		< 0.05	0.1	0.5	7
Zinc ^U			< 0.005	< 0.005		< 0.2	4	50	200
Chloride ^U			26	7		90	800	15000	25000
Fluoride ^U			1.6	0.7		7.9	10	150	500
Sulphate ^U			93	17		242	1000	20000	50000
TDS			196	144		1491	4000	60000	100000
Phenol Index			< 0.01	< 0.01		< 0.5	1	-	-
DOC			19	12.2		128	500	800	1000
Leach Test Information									
Sample Mass (kg)			0.19						
Dry Matter (%)			93.3						
Moisture (%)			7.2						
Stage 1									
Volume Eluate L2 (litres)			0.34						
Filtered Eluate VE1 (litres)			0.17						

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion

Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepancies with current legislation

M Denotes MCERTS accredited test

U Denotes ISO17025 accredited test



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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 21-00669	
Site Analytical Services Ltd	
Site Reference: 4 Montpelier Square	
Project / Job Ref: 21/33098	
Order No: 8138	
Reporting Date: 27/01/2021	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
^ 521420	BH1	None Supplied	0.25	6.7	Brown sandy clay with stones and concrete

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{1/S}

Unsuitable Sample ^{U/S}

^ no sampling date provided; unable to confirm if samples are within acceptable holding times

Soil Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No: 21-00669	
Site Analytical Services Ltd	
Site Reference: 4 Montpelier Square	
Project / Job Ref: 21/33098	
Order No: 8138	
Reporting Date: 27/01/2021	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

Parameter	Matrix Type	Suite Reference	Expanded Uncertainty Measurement	Unit
TOC	Soil	BS EN 12457	13.49	%
Loss on Ignition	Soil	BS EN 12457	17	%
BTEX	Soil	BS EN 12457	14	%
Sum of PCBs	Soil	BS EN 12457	23	%
Mineral Oil	Soil	BS EN 12457	9	%
Total PAH	Soil	BS EN 12457	20	%
pH	Soil	BS EN 12457	0.399	Units
Acid Neutralisation Capacity	Soil	BS EN 12457	18	%
Arsenic	Leachate	BS EN 12457	16.63	%
Barium	Leachate	BS EN 12457	14.29	%
Cadmium	Leachate	BS EN 12457	14.44	%
Chromium	Leachate	BS EN 12457	18.06	%
Copper	Leachate	BS EN 12457	21.27	%
Mercury	Leachate	BS EN 12457	24.13	%
Molybdenum	Leachate	BS EN 12457	12.55	%
Nickel	Leachate	BS EN 12457	20.08	%
Lead	Leachate	BS EN 12457	13.43	%
Antimony	Leachate	BS EN 12457	18.85	%
Selenium	Leachate	BS EN 12457	18.91	%
Zinc	Leachate	BS EN 12457	13.71	%
Chloride	Leachate	BS EN 12457	16	%
Fluoride	Leachate	BS EN 12457	19.4	%
Sulphate	Leachate	BS EN 12457	19.63	%
TDS	Leachate	BS EN 12457	12	%
Phenol Index	Leachate	BS EN 12457	14	%
DOC	Leachate	BS EN 12457	10	%
Clay Content	Soil	BS 3882: 2015	15	%
Silt Content	Soil	BS 3882: 2015	14	%
Sand Content	Soil	BS 3882: 2015	13	%
Loss on Ignition	Soil	BS 3882: 2015	17	%
pH	Soil	BS 3882: 2015	0.399	Units
Carbonate	Soil	BS 3882: 2015	16	%
Total Nitrogen	Soil	BS 3882: 2015	12	%
Phosphorus (Extractable)	Soil	BS 3882: 2015	24	%
Potassium (Extractable)	Soil	BS 3882: 2015	20	%
Magnesium (Extractable)	Soil	BS 3882: 2015	26	%
Zinc	Soil	BS 3882: 2015	14.9	%
Copper	Soil	BS 3882: 2015	16	%
Nickel	Soil	BS 3882: 2015	17.7	%
Available Sodium	Soil	BS 3882: 2015	23	%
Available Calcium	Soil	BS 3882: 2015	23	%
Electrical Conductivity	Soil	BS 3882: 2015	10	%

Appendix C – Structural Engineer Loads

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T+44 (0) 207 483 3880

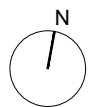
EWP MARK-UP
03/02/21

PAGE 2 OF 2

DRAWINGS STATUS		A3	
PLANNING PERMISSION			
PROJECT TITLE			
HOUSE REFURBISHMENT			
4 Montpelier Square SW7 1JT			
DRAWN	CHECKED		
UG - MF	LM		
DATE	SCALE		
21.09.2020	1:100@A3		
DRAWING TITLE			
PROPOSED LOWER GROUND AND GROUND FLOOR PLAN			
JOB NO	DRAWING NO		
0078	A2002		

GENERAL NOTE
 - This drawing should be removed from currency immediately when a revised version is issued.
 - All dimensions to be checked on site by the contractor. Discrepancies to be reported before proceeding with the works.
 - This drawing is copyrighted.
 - All dimensions in mm's.

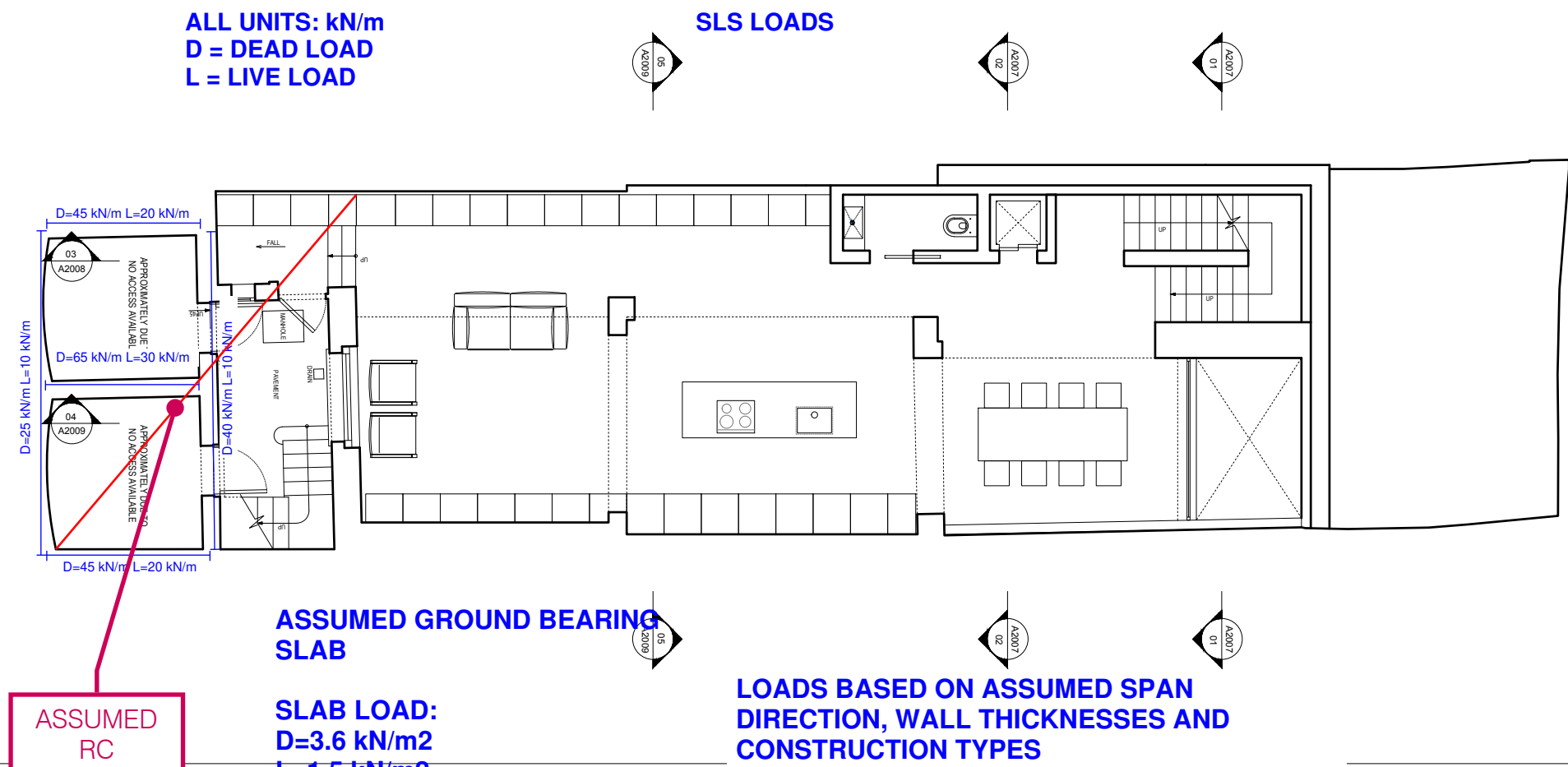
LEGEND	0	1	2 m
1:500	0	1	5 m
1:1000	0	10	20 m
1:1250	0	10	50 m



REV	DESCRIPTION	DATE	NAME
00			

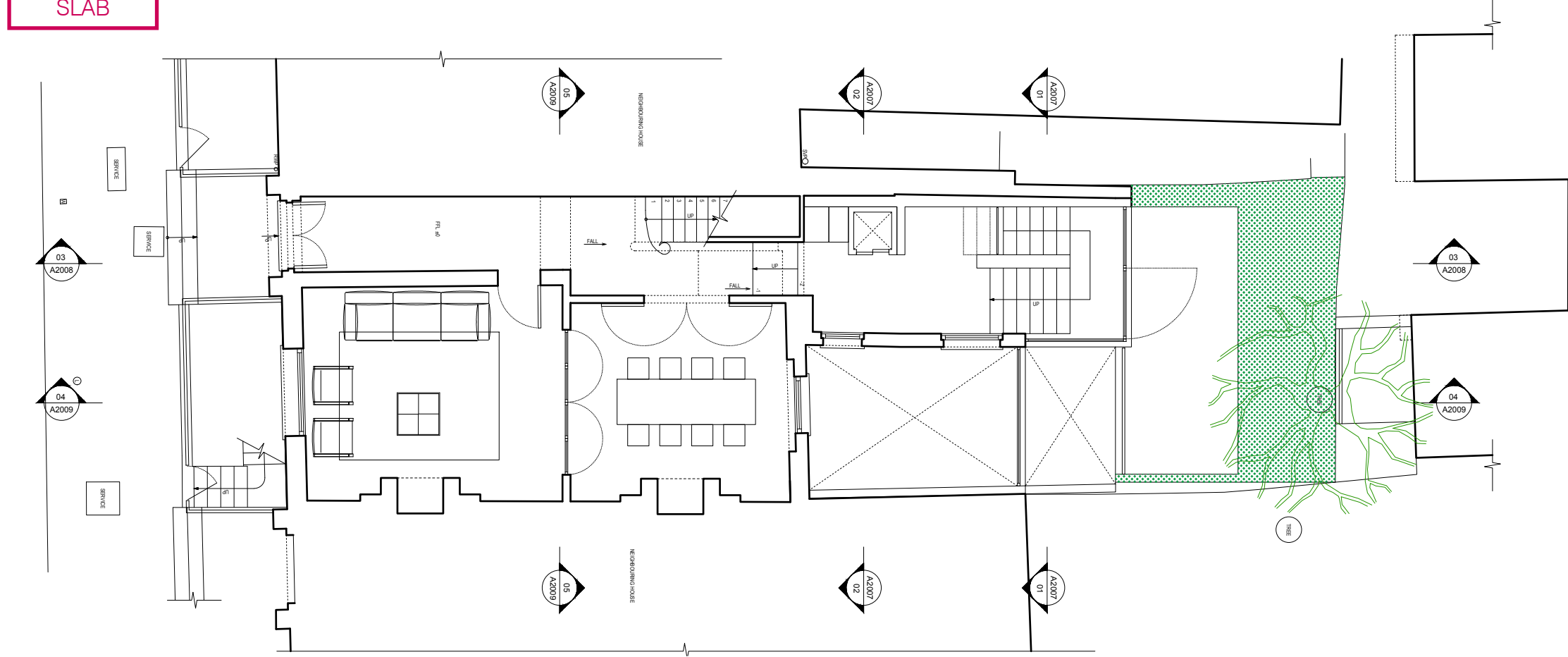
PROPOSED LOWER GROUND FLOOR PLAN

SCALE 1:100



PROPOSED GROUND FLOOR PLAN

SCALE 1:100



LBMV architects

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EWP MARK-UP
03/02/21

DRAWINGS STATUS
PLANNING PERMISSION A3

PROJECT TITLE
HOUSE REFURBISHMENT

4 Montpelier Square
SW7 1JT

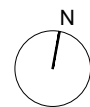
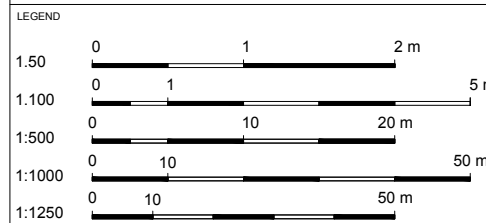
DRAWN UG - MF
CHECKED LM

DATE 21.09.2020
SCALE 1:100@A3

DRAWING TITLE
EXISTING LOWER GROUND AND GROUND FLOOR PLAN

JOB NO 0078
DRAWING NO A1002

GENERAL NOTE
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- This drawing is copyrighted.
- All dimensions in mm's.

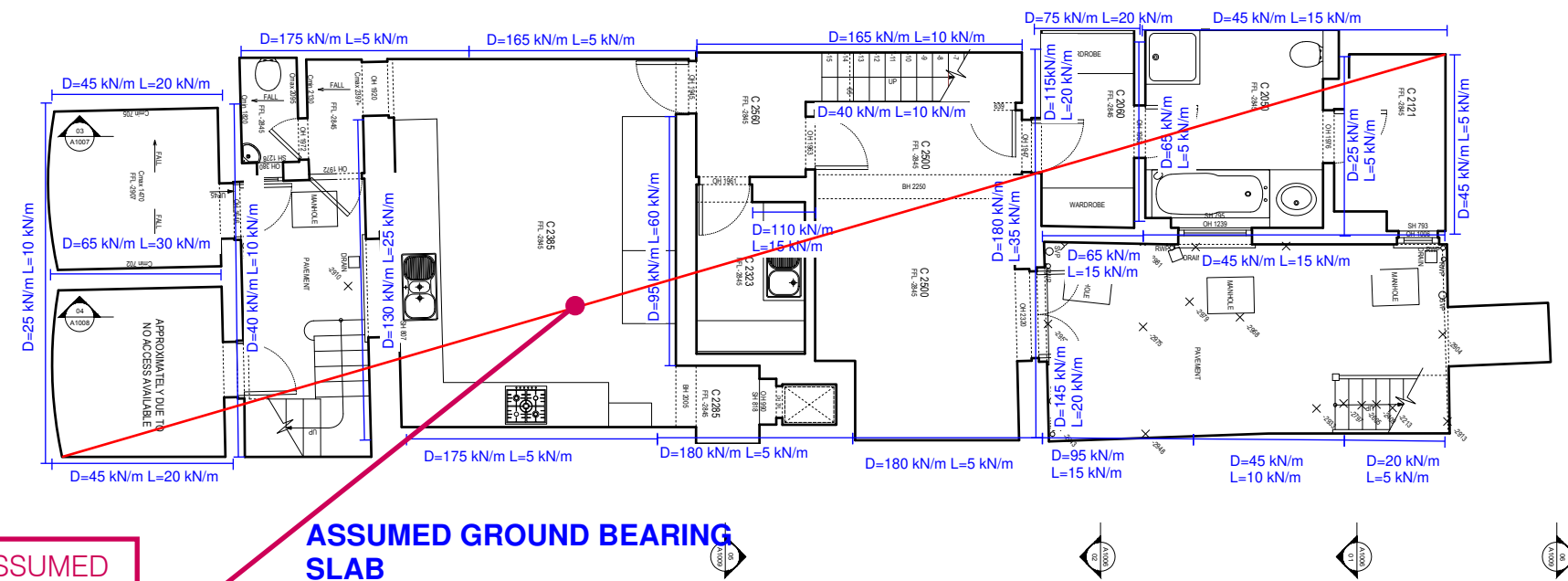


REV	DESCRIPTION	DATE	NAME

EXISTING LOWER GROUND FLOOR PLAN

SCALE 1:100

ALL UNITS: kN/m
D = DEAD LOAD
L = LIVE LOAD



ASSUMED RC GROUND BEARING SLAB

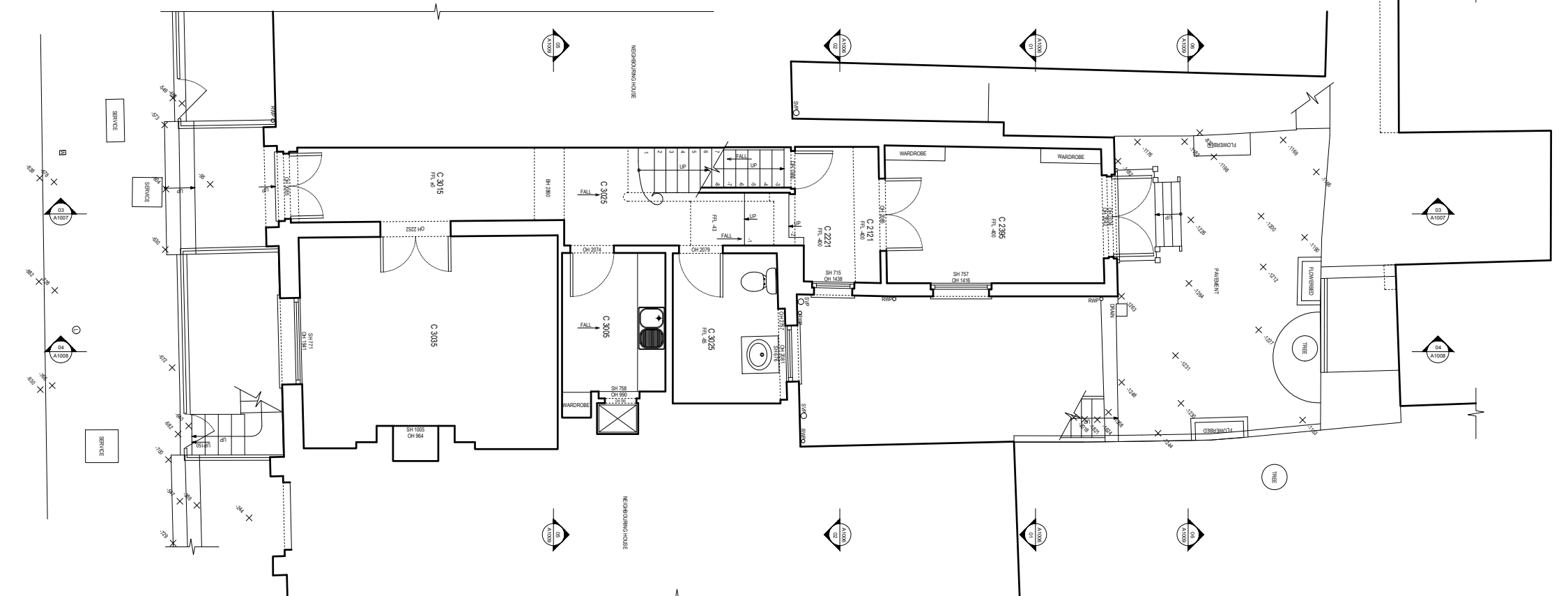
ASSUMED GROUND BEARING SLAB

SLAB LOAD:
D=3.6 kN/m²
L=1.5 kN/m²

LOADS BASED ON ASSUMED SPAN DIRECTION, WALL THICKNESSES AND CONSTRUCTION TYPES

EXISTING GROUND FLOOR PLAN

SCALE 1:100

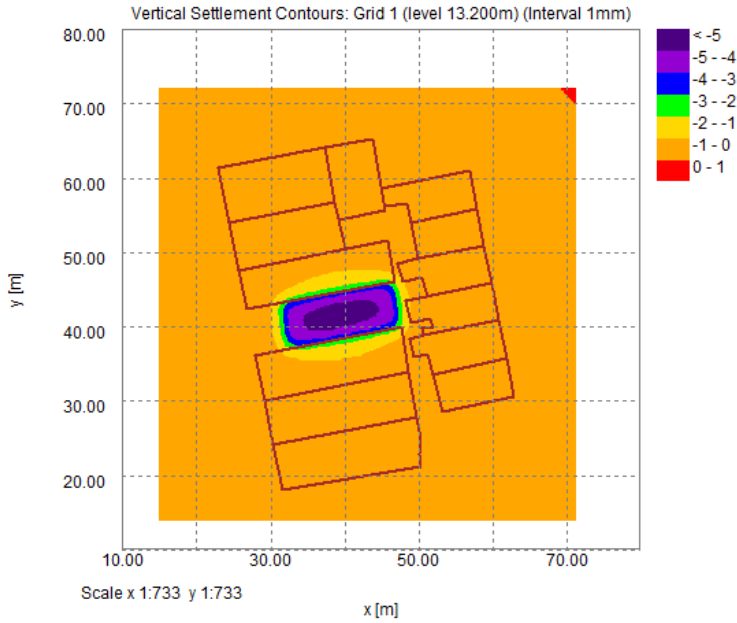


Appendix D – Ground Movement Contour Plots

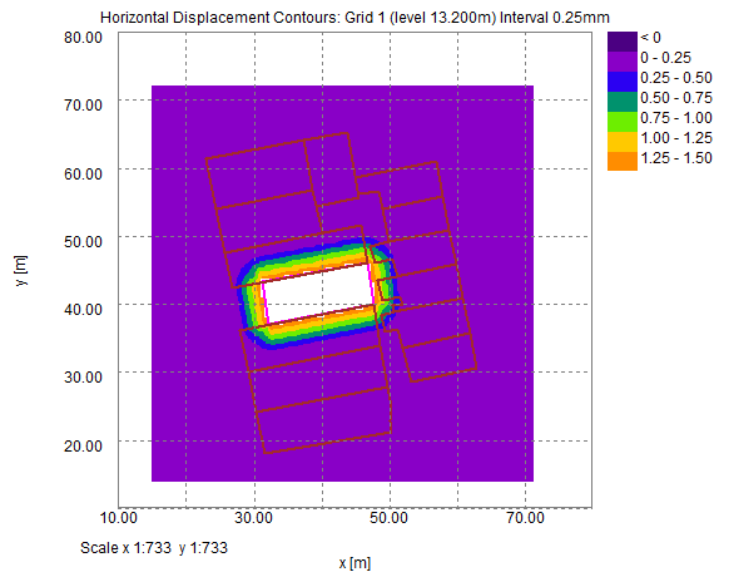
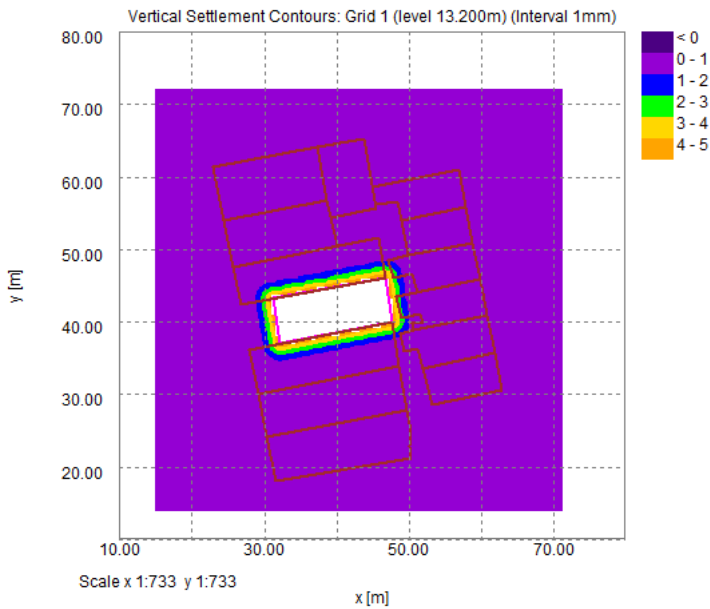
Positive displacement values refer to settlements.

Negative displacement values refer to heave.

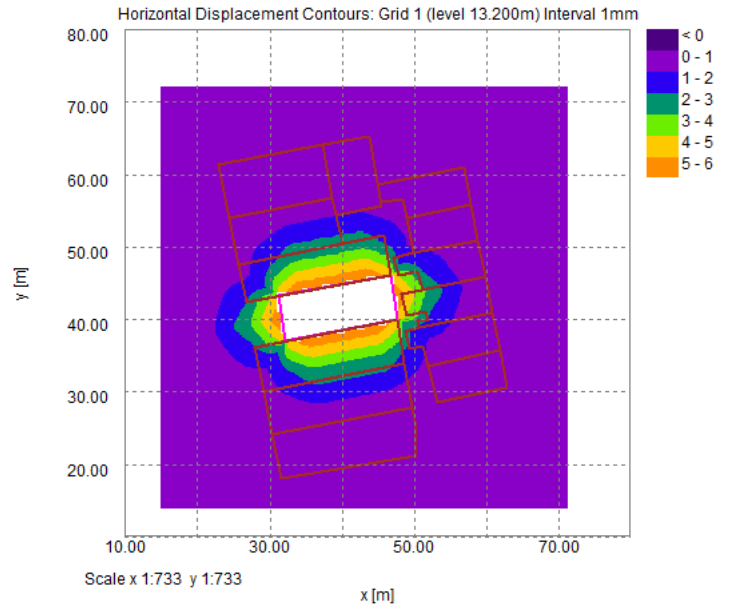
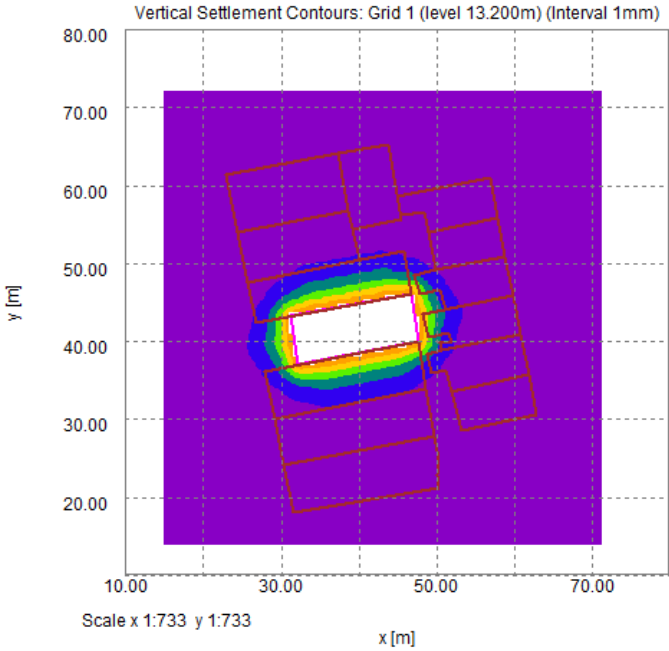
Excavation Unloading



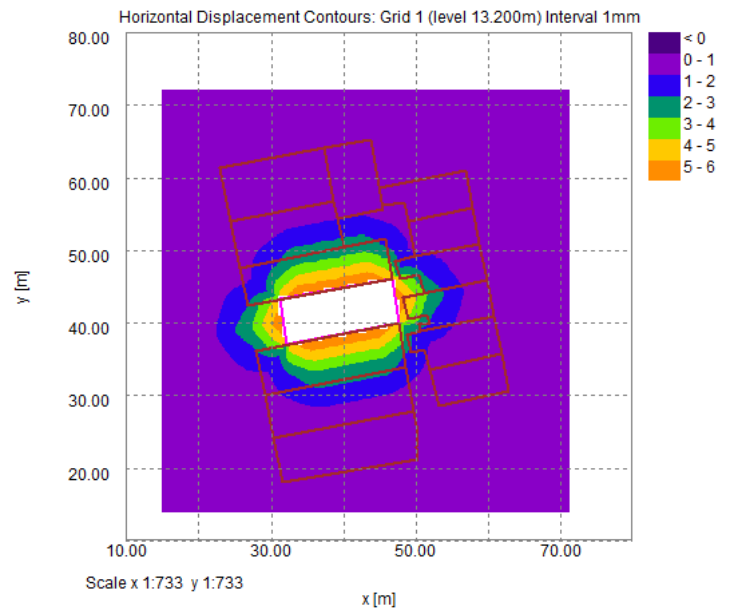
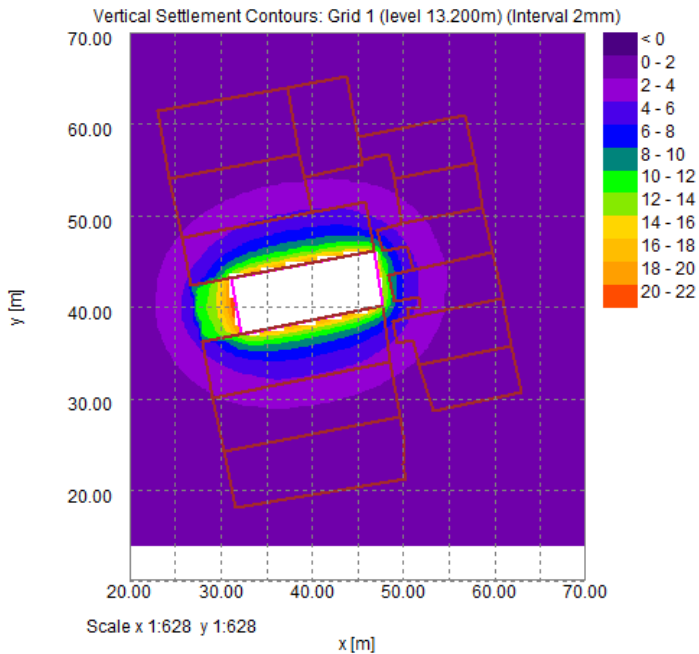
Underpinning (Vertical, Horizontal)



Underpinning and Excavation (Vertical, Horizontal)



Underpinning and Excavation and Building loading (Vertical, Horizontal)



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