IVY HOUSE environmental

Scotland Farm, Ockbrook, Derby, DE72 3RX

rps@ivyhousenv.co.uk • www.ivyhousenv.co.uk • 01332 661 987

IV.79.20.R1
Date: 22nd April 2020

Dice Consulting Engineers Ltd
Desai House
9-13 Holbrook Lane
COVENTRY
CV6 4AD

Dear Sirs,

Re: Phase II Geotechnical investigation report, Pinner Park School, Harrow.

Introduction
Ivy House Environmental were instructed by Dice Consulting to undertake a ground investigation and provide a pre development geotechnical assessment of the above site. It is proposed to develop the site by joining the two, currently separate, buildings in order to provide an internal corridor and re-designed reception/office layout.

Fieldwork
Ivy House Environmental attended site on 26 March in order to drill two window sample boreholes under the supervision of a suitably qualified engineer and in general accordance with the Code of Practice for Site Investigations BS5930: 2015. In addition to this, a hand pit was excavated adjacent to the southern building to assess the depth and design of the current foundation footings. A hand pit was not excavated adjacent to the northern building due to the probable presence of the building's storm drainage.

The two window sample boreholes were advanced to a maximum depth of 4.0mbgl and five samples of clay were sent to a UKAS accredited laboratory for geotechnical design criteria testing, including plasticity index (PI), water soluble sulphate and pH, the results of which are enclosed.

Ground Conditions
The investigation found deep Made Ground at WS2, comprising of asphalt, brick and concrete, extending to a maximum depth of 1.0mbgl, with only shallow Made Ground at WS1 (block paving), which in turn was underlain by soft clays. The clay was found to become firmer with increasing depth.

In addition, the hand excavated pit found the footings to extend to a total depth of 1.15mbgl, comprising brickwork to 0.60mbgl and a concrete foundation protruding by 0.10m and extending to 1.15mbgl. Exploratory logs are enclosed.

No groundwater was encountered during the investigation.

Geotechnical Analysis
The results enclosed illustrate PI values of between 34% and 53% and moisture contents between 24% and 38%, indicating the clay to be of high plasticity and high shrinkage potential.

Water Soluble Sulphate and pH analysis revealed results of 0.09 - 0.11g/lSO4 and 7.7 - 8.0 respectively.

Given the presence of high shrinkage clays beneath the site it is recommended that a minimum foundation depth of 1.00m be adopted where outside the zone of influence of trees, but deepening of this within the zone of influence will be required in accordance with NHBC Standards Chapter 4.2:2017 'Building near trees'.

As a guide, for 1.00m wide strip/trench fill footings, founding on the underlying natural soft clays at a minimum depth of 1.00m below ground level, an allowable net bearing pressure of 50 - 75kN/m^2 is considered appropriate. If a greater bearing capacity is required, deepening of foundations to within the firm clay could achieve an allowable net bearing pressure of 75 - 100kN/m^2.

Due to the low moisture contents and high shrinkage potentials observed, foundations should incorporate heave protection measures and a suspended floor slab (beam and block) is recommended for all structures due to the potential of the soils to heave and therefore cause subsidence.

The above assessment should also be reviewed by the appointed structural engineer for confirmation.

Based on the recorded water-soluble sulphate concentrations and pH value it is considered appropriate to adopt a basic Design Sulphate Class of DS-1, together with an Aggressive Chemical Environment of Concrete (ACEC) AC-1s for any concrete to be used below the ground surface.

Conclusions
The geotechnical assessment for the above site indicates that the foundations for the proposed development should be founded at a minimum depth of 1.00mbgl and incorporate heave protection measures; a net allowable bearing pressure has been estimated at 50-75kN/m^2 but could be improved by deepening of foundations to within firm clays; a concrete classification of DS-1, AC-1s is considered appropriate.

I trust this is sufficient for your approval, if you have any questions or queries, please do not hesitated to contact us.

Yours Sincerely

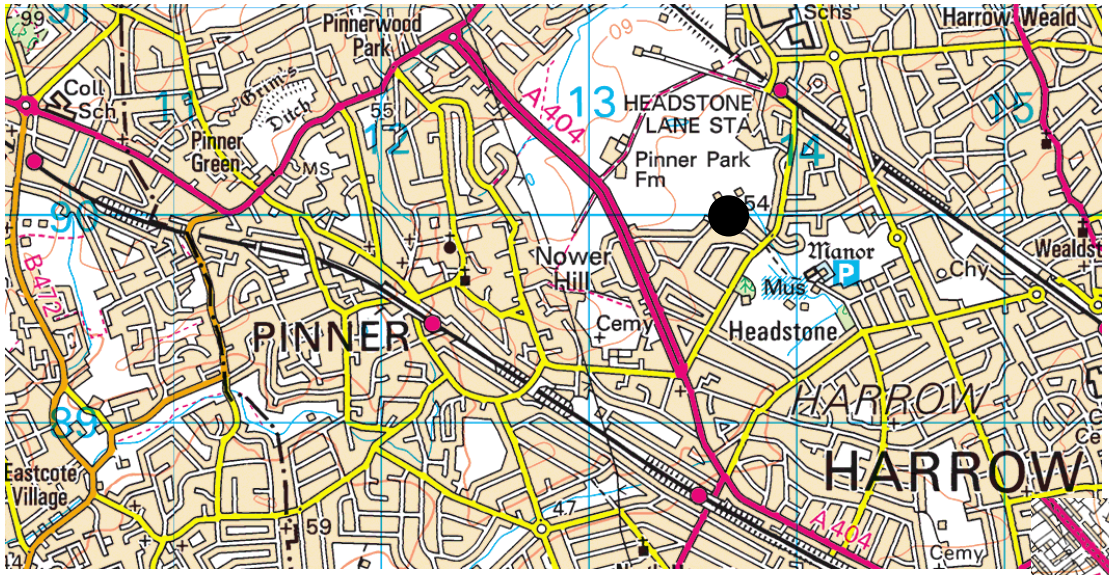
Author:

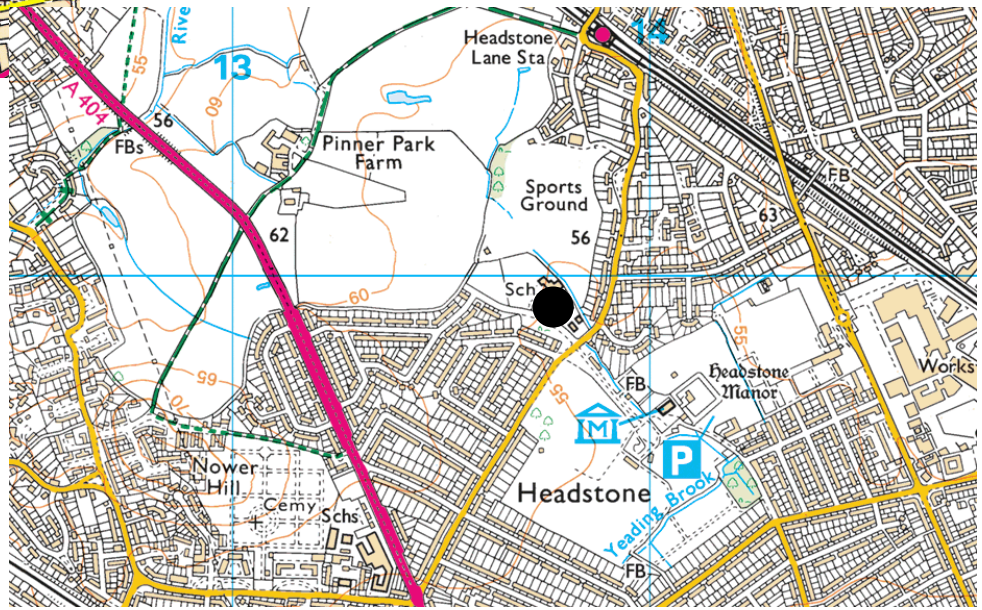
Joshua Hagger BSc (Hons)
Geo-Environmental Engineer

Approved by:

Richard Sutton MRICS
Director

Enclosed:
Figures
Window Sample Logs
Geotechnical Lab Results





Approximate Postcode: HA5 5TJ

KEY:

● Approximate Site Location

DO NOT SCALE

IVY HOUSE environmental

Scotland Farm, Ockbrook, Derby, DE72 3RX

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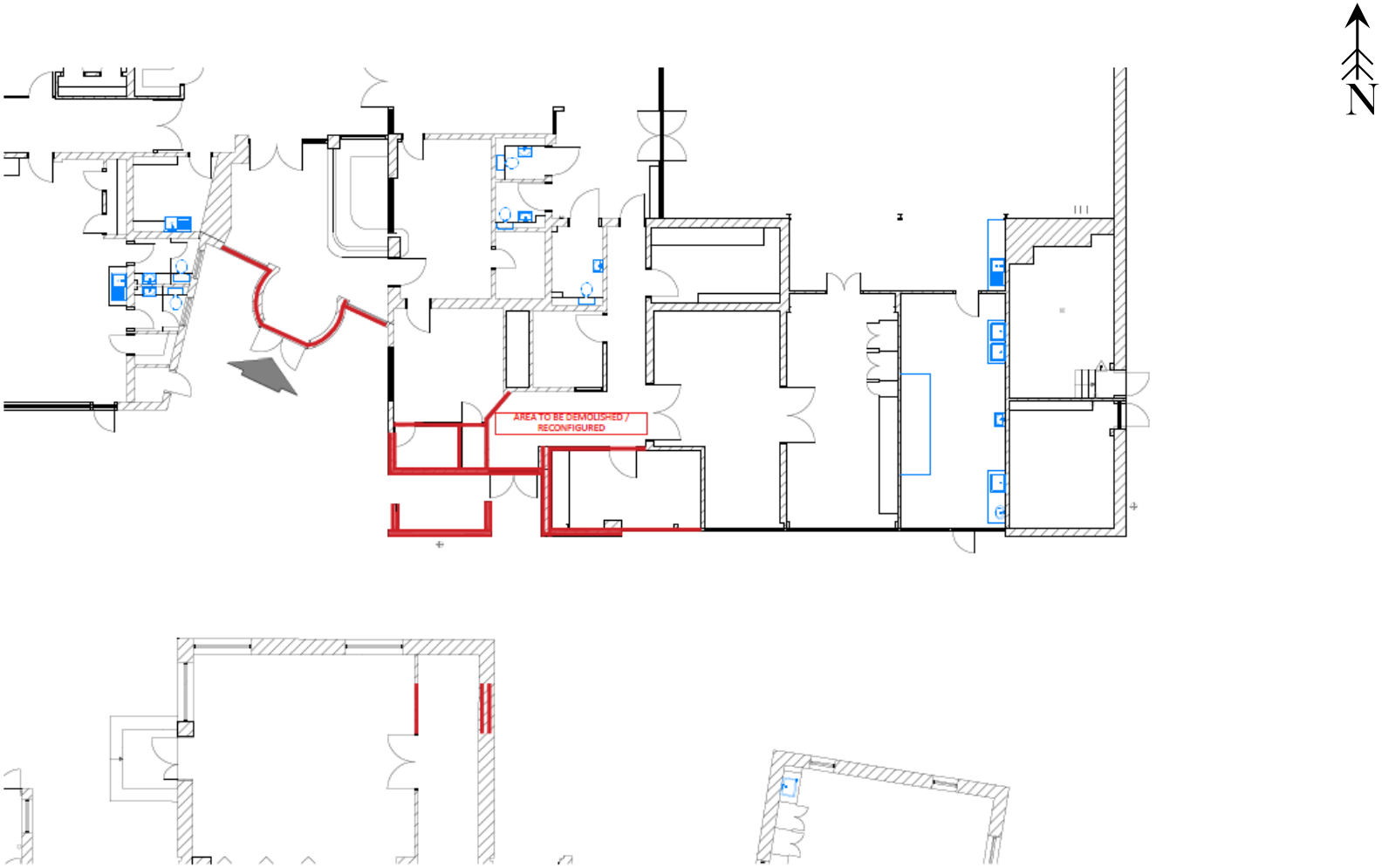
TITLE:	Site Location Plan
PROJECT:	Pinner Park School, Harrow
PROJECT No:	IV.79.20
DATE:	03/2020
SCALE :	NTS
DRAWN :	JH
DWG No:	Figure 1



EXISTING GROUND FLOOR LAYOUT: Scale 1:100

KEY:

DO NOT SCALE

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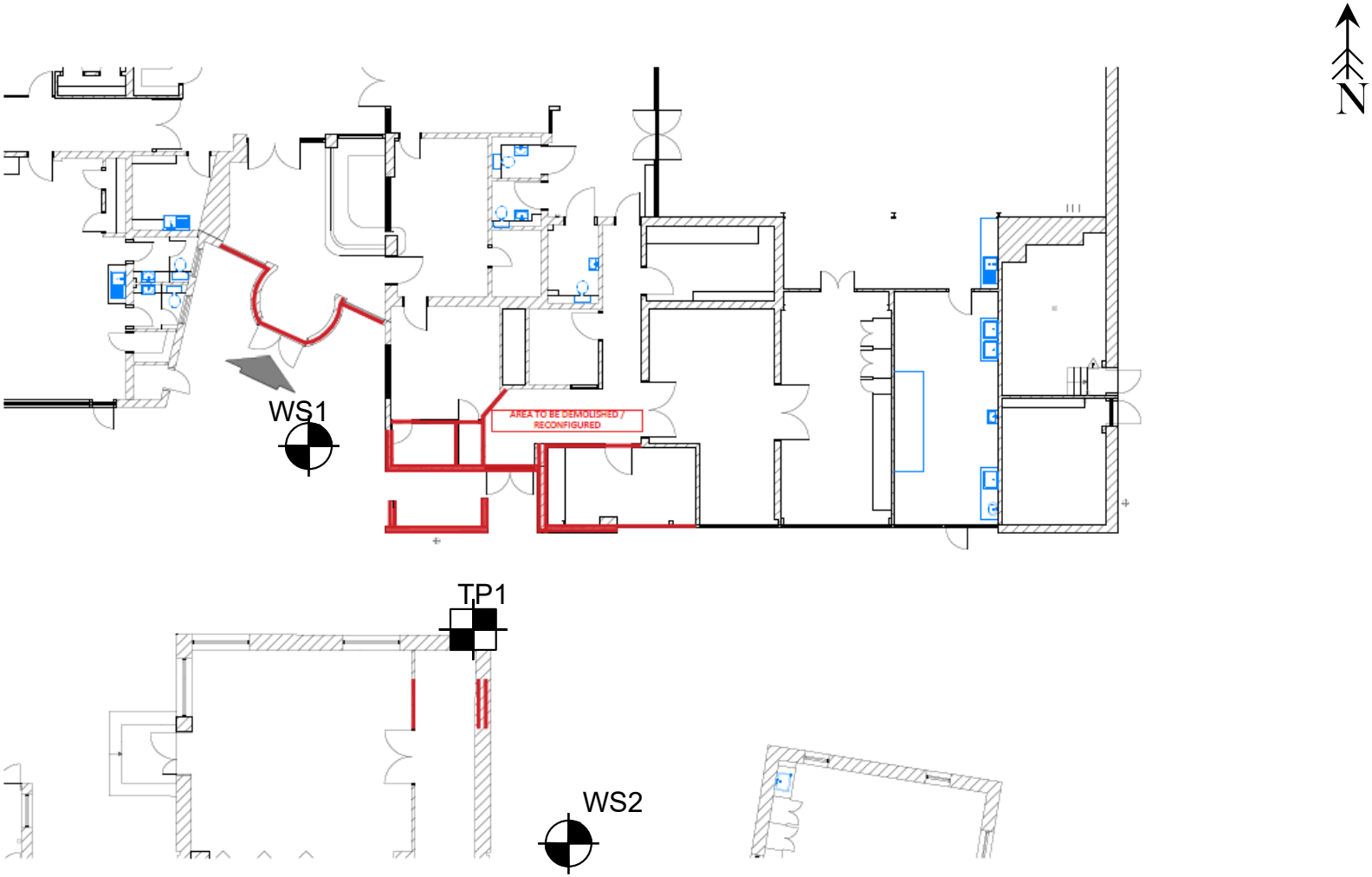
TITLE:	Site Layout
PROJECT:	Pinner Park School, Harrow
PROJECT No:	IV.79.20
DATE:	03/2020
SCALE :	NTS
DRAWN :	JH
DWG No:	Figure 2



EXISTING GROUND FLOOR LAYOUT: Scale 1:100

KEY:

WS Borehole

Hand Dug Pit

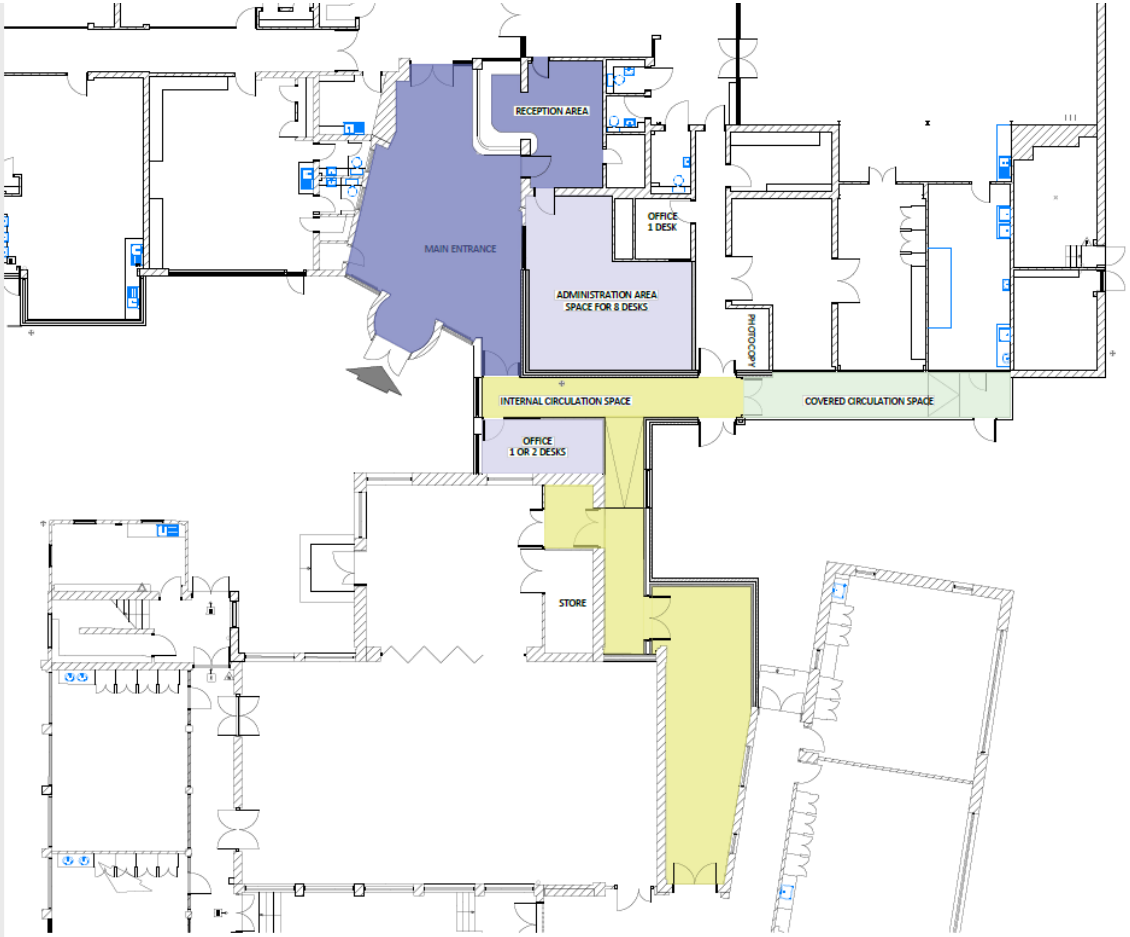
DO NOT SCALE

IVY HOUSE environmental

Scotland Farm, Ockbrook, Derby, DE72 3RX

rps@ivyhousenv.co.uk • www.ivyhousenv.co.uk • 01332 661 987

TITLE:	Exploratory Hole Location Plan
PROJECT:	Pinner Park School, Harrow
PROJECT No:	IV.79.20
DATE:	03/2020
SCALE :	NTS
DRAWN :	JH
DWG No:	Figure 3



GROUND FLOOR LAYOUT: Scale 1:100

KEY

RECEPTION

ADMINISTR

INTERNAL C

COVERED C

N

KEY:

DO NOT SCALE

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Scotland Farm, Ockbrook, Derby, DE72 3RX

rps@ivyhousenv.co.uk • www.ivyhousenv.co.uk • 01332 661 987

TITLE:	Development Proposal
PROJECT:	Pinner Park School, Harrow
PROJECT No:	IV.79.20
DATE:	03/2020
SCALE :	NTS
DRAWN :	JH
DWG No:	Figure 4

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CLIENT

Dice Consulting

SITE LOCATION

Pinner Park School, Harrow

Date: 26/03/2020

Ground Level:

Orientation:

Coordinates:

Plant: Tracked Window Sample Rig

Dimensions:

Window Sample NO.

WS1

Sheet No. 1 of 1

Job No.

IV.79.20

Description of Strata	Reduced level (m)	Legend	Depth (Thickness) m	SAMPLES/TESTS Depth	No	Type	SPT Results Seating 75mm	Seating 75mm	Test Drive 75mm	Test Drive 75mm	Test Drive 75mm	Test Drive 75mm	N' Value	Installation	Test Sample Details
MADE GROUND: Block paving with orange sand base layer.	0.05														
	0.10		**0.15 (0.15)**	0.10	1	ES									
	0.15														
Soft greyish black slightly gravelly CLAY. Gravel is coarse subangular flint.	0.20														
	0.25														
	0.30														
	0.35														
	0.40														
	0.45														
Becoming orangish brown from 0.50mbgl	**0.50**														
	0.55														
	0.60														
	0.65														
	0.70														
	0.75			0.75	2	ES									
Becoming firm from 0.80mbgl	0.80			0.80	1	D									
	0.85														
	0.90														
	0.95														
	1.00						1	1	1	1	2	2	6		
	1.05														
	1.10														
	1.15														
	1.20														
	1.25														
	1.30														
	1.35														
	1.40														
	1.45														
	1.50														
	1.55														
	1.60														
Becoming grey mottled orange from 1.65mbgl	1.65														
	1.70														
	1.75														
Becoming stiff from 1.80mbgl	1.80			1.80	2	D									
	1.85														
	1.90														
	1.95														
Becoming very stiff from 2.00mbgl	**2.00**						2	3	5	5	5	7	22		
	2.05														
	2.10		**4.00 (3.85)**												
	2.15														
	2.20														
	2.25														
	2.30														
	2.35														
	2.40														
	2.45														
	2.50														
	2.55														
	2.60			2.50 - 2.70	3	D									
	2.65														
	2.70														
	2.75														
	2.80														
	2.85														
	2.90														
	2.95														
	3.00						4	5	6	7	8	9	30		
	3.05														
	3.10														
	3.15														
	3.20														
	3.25														
	3.30														
	3.35														
	3.40														
	3.45														
	3.50														
Becoming lithified from 3.55mbgl	3.55														
	3.60														
	3.65			3.55 - 3.70	4	D									
	3.70														
	3.75														
	3.80														
	3.85														
	3.90														
	3.95														
	4.00						7	10	11	13	14	12/70mm			
Refusal at 4.00mbgl.	4.10														

Casing record			Chiselling records								
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks

Remarks:
1. Borehole reinstated with arisings upon completion.
2. Borehole remained stable during drilling excavation.
3. Groundwater not encountered.

Logged By:	Checked By:	Date	Scale
JH			NTS

IVY HOUSE environmental
Scotland Farm, Far Lane, Ockbrook, DE72 3RX
rps@ivyhouseenv.co.uk • www.ivyhouseenv.co.uk • 01332 820 488

CLIENT

Dice Consulting

SITE LOCATION

Pinner Park School, Harrow

Date: 26/03/2020

Ground Level:

Orientation:

Coordinates:

Plant: Tracked Window Sample Rig

Dimensions:

Window Sample NO.

WS2

Sheet No. 1 of 1

Job No.

IV.79.20

Description of Strata	Reduced level (m)	Legend	Depth (Thickness) m	SAMPLES/TESTS Depth	No	Type	SPT Results Seating 75mm	Seating 75mm	Test Drive 75mm	Test Drive 75mm	Test Drive 75mm	Test Drive 75mm	N' Value	Installation	Test Sample Details
MADE GROUND: Multi-coloured cobbly coarse sand and gravel of mixed lithologies including asphalt, brick and concrete.	0.05														
	0.10														
	0.15														
	0.20														
	0.25														
	0.30														
	0.35			0.35	1	ES									
	0.40														
	0.45														
	0.50		**1.00 (1.00)**												
	0.55														
	0.60														
	0.65														
	0.70														
	0.75														
	0.80														
	0.85														
	0.90														
	0.95														
	1.00						1	1	1	1	2	3	7		
Soft dark grey slightly gravelly CLAY. Gravel is coarse subangular flint.	1.05														
	1.10														
	1.15														
	1.20														
Becoming orangish brown from 1.25mbgl	1.25														
	1.30														
	1.35			1.35	2	ES									
	1.40														
	1.45			1.40 - 1.50	1	D									
	1.50														
	1.55														
	1.60														
	1.65														
	1.70														
	1.75														
	1.80														
	1.85														
	1.90														
	1.95														
	2.00						2	2	3	5	5	6	19		
	2.05														
	2.10														
	2.15														
Becoming firm from 2.20mbgl	2.20														
	2.25														
	2.30														
	2.35														
	2.40														
	2.45														
	2.50		**4.00 (3.00)**												
	2.55			2.50 - 2.65	2	D									
Becoming grey mottled orange and stiff from 2.60mbgl	2.60														
	2.65														
	2.70														
	2.75														
	2.80														
	2.85														
Becoming very stiff from 2.90mgbl	2.90														
	2.95														
	3.00						3	5	8	9	9	10	36		
	3.05														
	3.10														
	3.15														
	3.20														
	3.25														
Becoming lithified from 3.30mbgl	3.30														
	3.35														
	3.40														
	3.45														
	3.50														
	3.55														
	3.60														
	3.65														
	3.70			3.50 - 3.80	3	D									
	3.75														
	3.80														
	3.85														
	3.90														
	3.95												13/		
	4.00						6	7	11	12	14	70mm			
Refusal at 4.00mbgl.	4.10														

Casing record			Chiselling records								
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks

Remarks:

1. Borehole reinstated with arisings upon completion.
2. Borehole remained stable during drilling excavation.
3. Groundwater not encountered.

Logged By:	Checked By:	Date	Scale
JH			NTS

IVY HOUSE environmental

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26/03/2020

Window Sample NO.

TP1

Sheet No. 1 of 1

Dice Consulting

SITE LOCATION

Pinner Park School, Harrow

Coordinates:

Plant:

Dimensions:

Job No.

IV.79.20

Description of Strata	Reduced level (m)	Legend	Depth (Thickness) m	SAMPLES/TESTS Depth	No	Type	SPT Results Seating 75mm	Seating 75mm	Test Drive 75mm	Test Drive 75mm	Test Drive 75mm	Test Drive 75mm	N' Value	Installation	Test Sample Details
Brickwork to 0.6m	0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 **0.50** 0.55 0.60		**0.6m**												
Concrete foundation to 1.15mbgl - protruding from brickwork by 0.1m	0.65 0.70 0.75 0.80 0.85 0.90 0.95 **1.00** 1.05 1.10 1.15		**1.15m**												
Maximum Depth of Foundations 1.15mbgl	1.20 1.25 1.30 1.35 1.40 1.45 **1.50** 1.55 1.60 1.65 1.70 1.75 1.80 1.85 1.90 1.95 **2.00** 2.05 2.10 2.15 2.20 2.25 2.30 2.35 2.40 2.45 **2.50** 2.55 2.60 2.65 2.70 2.75 2.80 2.85 2.90 2.95 **3.00** 3.05 3.10 3.15 3.20 3.25 3.30 3.35 3.40 3.45 **3.50** 3.55 3.60 3.65 3.70 3.75 3.80 3.85 3.90 3.95 **4.00**													
Refusal at 4.00mbgl.	4.10														

Casing record			Chiselling records									
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks

Remarks:

1. Trial pit reinstated with arisings upon completion.
2. Trial pit remained stable during excavation.
3. Groundwater not encountered.

Logged By:	Checked By:	Date	Scale
JH			NTS

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

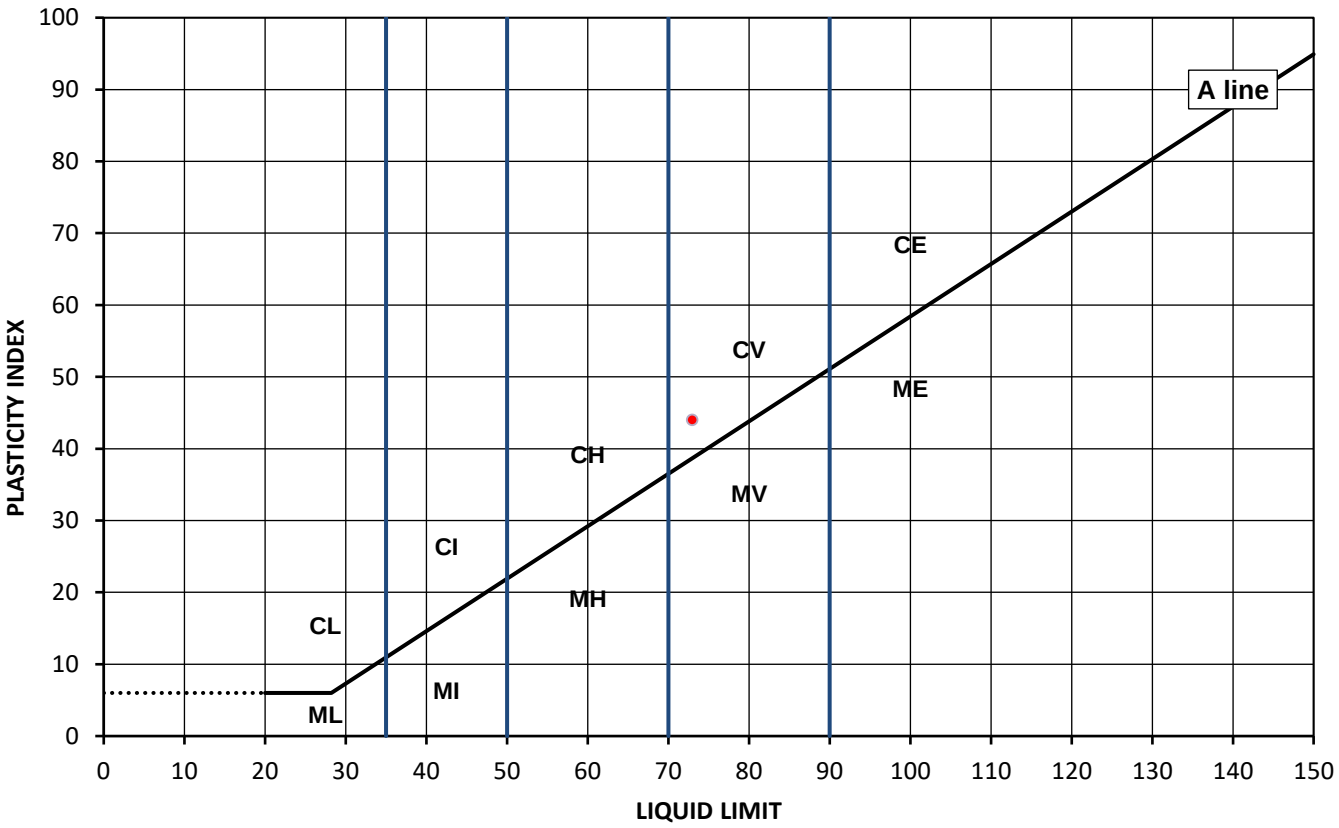
Client:	Ivy House Environmental Ltd	Client Reference:	IV-79-20
Client Address:	Scotland Farm, Ockbrook, Derby, DE72 3RX	Job Number:	20-95280
		Date Sampled:	26/03/2020
		Date Received:	31/03/2020
Contact:	Josh Hagger	Date Tested:	06/04/2020
Site Address:	Pinner Park School, Harrow	Sampled By:	JH

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1487115	Depth Top [m]:	0.80
Hole No.:	WS1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Light brown CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
38	73	29	44	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report are representative of the samples submitted for analysis.

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 16/04/2020

GF 232.8

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

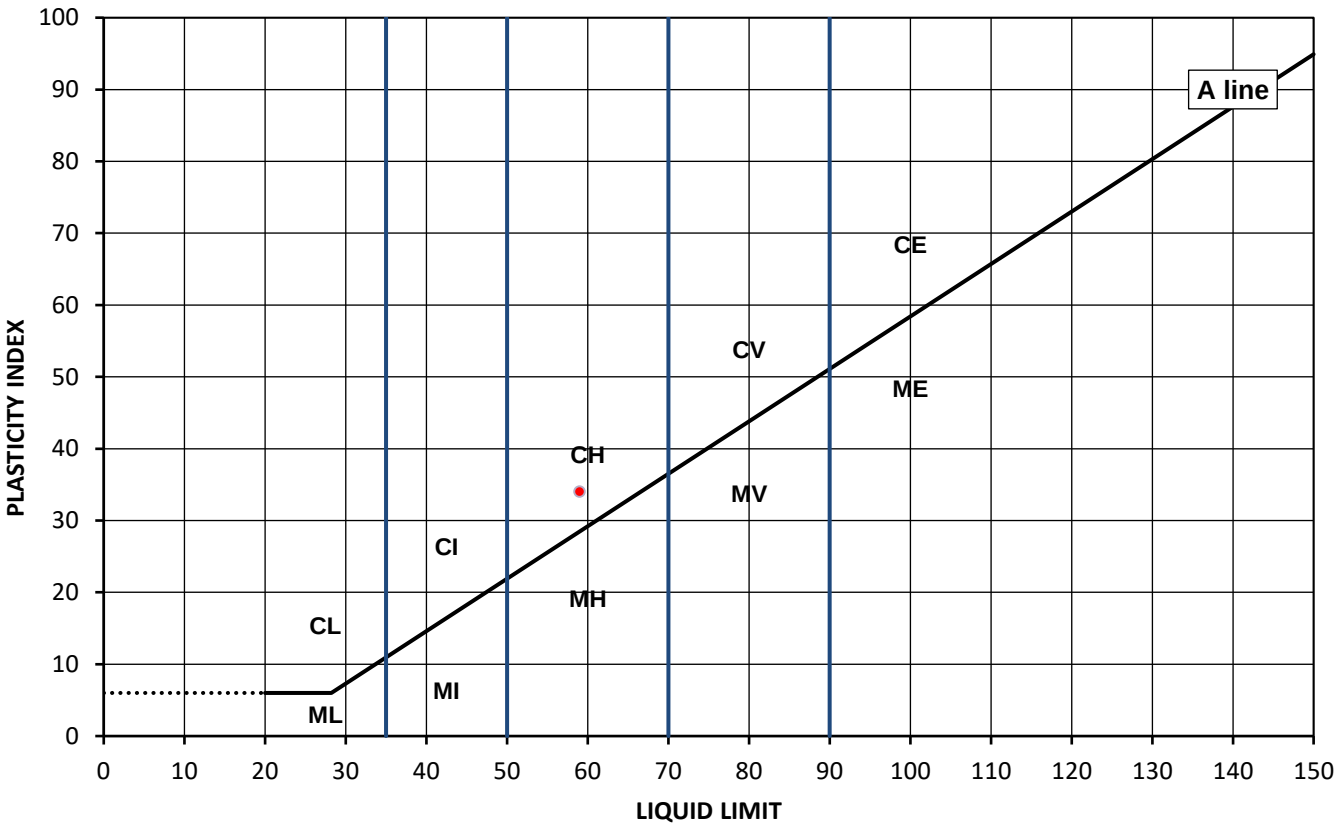
Client:	Ivy House Environmental Ltd	Client Reference:	IV-79-20
Client Address:	Scotland Farm, Ockbrook, Derby, DE72 3RX	Job Number:	20-95280
		Date Sampled:	26/03/2020
		Date Received:	31/03/2020
Contact:	Josh Hagger	Date Tested:	06/04/2020
Site Address:	Pinner Park School, Harrow	Sampled By:	JH

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1487116	Depth Top [m]:	1.80
Hole No.:	WS1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Orangish brown to grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
24	59	25	34	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report are representative of the samples submitted for analysis.

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 16/04/2020

GF 232.8

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

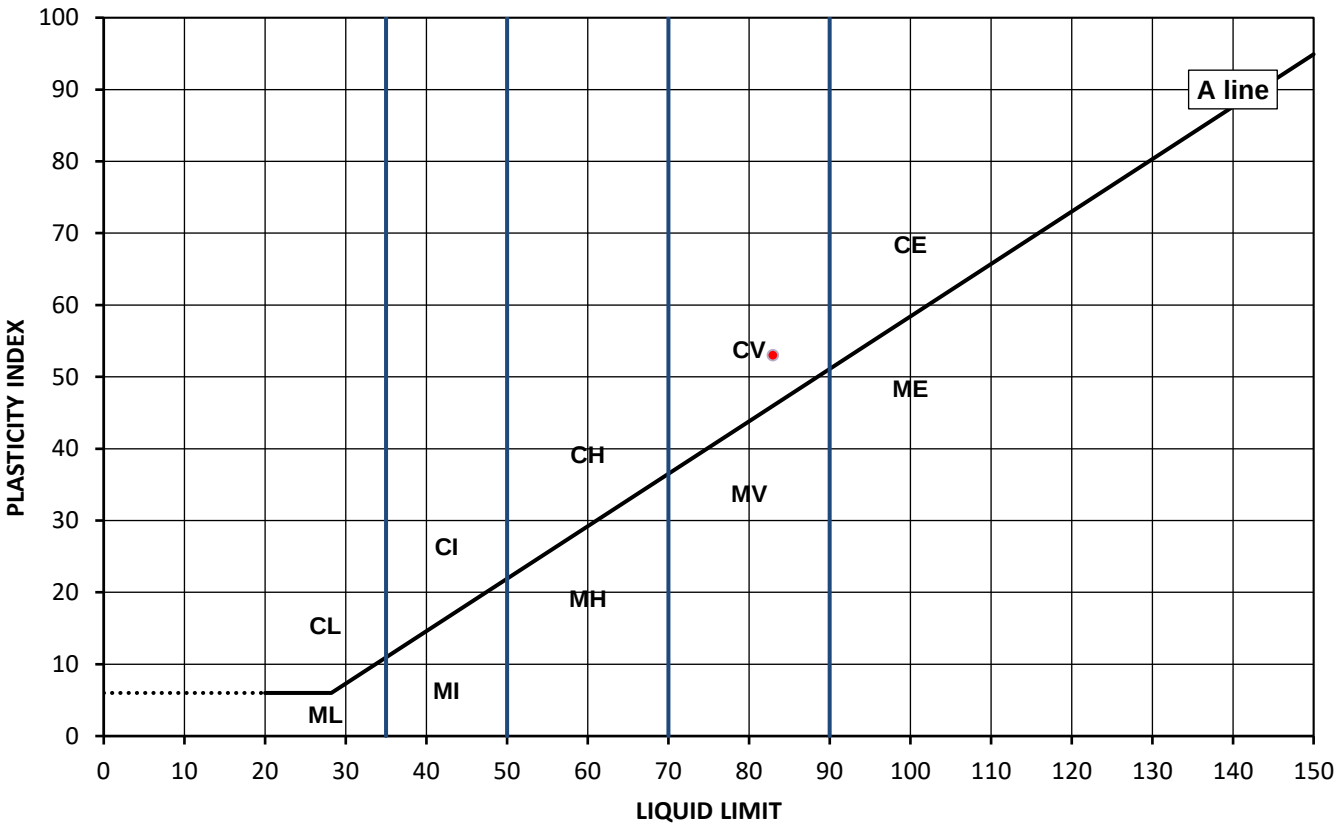
Client:	Ivy House Environmental Ltd	Client Reference:	IV-79-20
Client Address:	Scotland Farm, Ockbrook, Derby, DE72 3RX	Job Number:	20-95280
		Date Sampled:	26/03/2020
		Date Received:	31/03/2020
Contact:	Josh Hagger	Date Tested:	06/04/2020
Site Address:	Pinner Park School, Harrow	Sampled By:	JH

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1487117	Depth Top [m]:	1.40
Hole No.:	WS2	Depth Base [m]:	1.50
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Light brown CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
35	83	30	53	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report are representative of the samples submitted for analysis.

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 16/04/2020

GF 232.8

SUMMARY REPORT

Summary of Classification Test Results

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

4041

Tested in Accordance with:

MC by BS 1377-2: 1990: Clause 3.2; WC by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Ivy House Environmental Ltd

Client Address: Scotland Farm, Ockbrook, Derby, DE72 3RX

Contact: Josh Hagger

Site Address: Pinner Park School, Harrow

Client Reference: IV-79-20
Job Number: 20-95280
Date Sampled: 26/03/2020
Date Received: 31/03/2020
Date Tested: 06/04/2020
Sampled By: JH

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	MC	WC	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	LL	PL	PI	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
1487115	WS1	Not Given	0.80	Not Given	D	Light brown CLAY	Atterberg 1 Point	38		100	73	29	44						
1487116	WS1	Not Given	1.80	Not Given	D	Orangish brown to grey slightly sandy CLAY	Atterberg 1 Point	24		100	59	25	34						
1487117	WS2	Not Given	1.40	1.50	D	Light brown CLAY	Atterberg 1 Point	35		100	83	30	53						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report are representative of the samples submitted for analysis.

Date Reported: 16/04/2020

GF 234.10

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Analytical Report Number : 20-95281

Project / Site name:	Pinner Park School, Harrow	**Samples received on:**	31/03/2020
Your job number:	IV-79-20	**Samples instructed on:**	31/03/2020
Your order number:		**Analysis completed by:**	09/04/2020
Report Issue Number:	1	**Report issued on:**	14/04/2020
Samples Analysed:	3 soil samples		

Signed: A. Czerwińska

Agnieszka Czerwińska

Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

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Analytical Report Number: 20-95281

Project / Site name: Pinner Park School, Harrow

Lab Sample Number				1487118	1487119	1487120		
Sample Reference				WS1	WS1	WS2		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				1.80	0.75	1.35		
Date Sampled				26/03/2020	26/03/2020	26/03/2020		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	19	24	25		
Total mass of sample received	kg	0.001	NONE	0.40	0.40	0.40		

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.7	7.7	8.0		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.090	0.084	0.11		

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Analytical Report Number : 20-95281

Project / Site name: Pinner Park School, Harrow

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1487118	WS1	None Supplied	1.80	Light brown clay and sand.
1487119	WS1	None Supplied	0.75	Light brown clay.
1487120	WS2	None Supplied	1.35	Light brown clay.

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Analytical Report Number : 20-95281

Project / Site name: Pinner Park School, Harrow

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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