



FACTUAL REPORT ON GROUND INVESTIGATION AT ROBROYSTON NORTH

1. INTRODUCTION

It is proposed to construct a residential development at Robroyston North.

At the request of Johnson Poole & Bloomer, Consulting Engineers for the project, an investigation was carried out to confirm the ground conditions at the site.

This report presents the information established by observation, boring, sampling and in-situ testing. It should be noted that natural strata vary from point to point and that man-made deposits are subject to an even greater diversity. Groundwater conditions are dependent upon seasonal and other factors. Whilst an attempt is made in reporting to assess the likelihood or extent of such variations at the site, it should be recognised that there may be conditions pertaining which are not disclosed by the investigation.

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

2. SITE WORK

The field works were carried out during the period 21st January to 18th February 2020 and comprised:-

34 No. Terrier Rig Boreholes, including 7 No. re-bores, to a maximum depth of 5.00 metres

Details of the boreholes including daily progress of hole and casing, descriptions of strata encountered, records of sampling and in-situ testing carried out, observations of groundwater conditions while boring, depths to changes in strata and details of standpipe installations are presented in the exploratory hole records in Appendix 1.



3. LABORATORY TESTING

The samples of soil taken during the site works were transported to the laboratory for systematic examination and testing. The characteristics of the soils determined in the laboratory were used to supplement field observations in the preparation of the final exploratory hole records.

Testing was carried out on selected samples to the requirements of the relevant British Standards, or in accordance with current good practice, as appropriate.

The Laboratory Testing References section of Appendix 2 details the tests performed in the laboratory which are UKAS accredited.

Tests marked "Not UKAS Accredited" in this report are not included in the UKAS Accreditation Schedule for our laboratory.

Laboratory Testing Comprised:-

- Classification Tests
- Undrained Triaxial Strength Tests
- Oedometer Consolidation Tests
- California Bearing Ratio Tests

The results are presented in summary and detailed Tables and Figures in Appendix 2.



REFERENCES

1. **BS5930:2015** Code of Practice for "Site Investigation" British Standard Code of Practice, British Standards Institution, London
2. **BS1377:1990** Parts 1 to 9 British Standard "Methods of Test of Soils for civil engineering purposes". British Standards Institution, London.
3. **BS10175:2011** Investigation of potentially contaminated site – Code of Practice.
4. **Building Research Establishment**, Special Digest 2005, Concrete in Aggressive Ground.

Appendix 1



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Site
ROBROYSTON NORTH

Borehole Number
S301

Boring Method TERRIER RIG	Casing Diameter		Ground Level (mOD)	Client	Job Number M505
	Location		Dates 14/02/2020	Engineer JOHNSON POOLE & BLOOMER	Sheet 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	E1					(0.40)	TOPSOIL			
0.50	E2					0.40	High strength stiff consistency mottled brown and grey slightly sandy slightly gravelly CLAY with rootlets. Gravel content is fine to coarse			
1.00	E3					(1.40)				
1.20-2.00	U4					1.80	Stiff consistency grey sandy gravelly CLAY with cobbles. Gravel content is fine to coarse			
2.00-2.45	SPT N=23			5,5/6,6,4,7		(1.70)				
2.00-2.45	B5					3.50	#OBSTRUCTION (Bedrock or boulder)			
3.00-3.50	U6						Complete at 3.50m			
				14/02/2020:DRY						

Remarks A 50mm diameter standpipe was installed at a depth of 3.50m # Denotes driller's description Excavating from 0.00m to 1.20m for 1 hour.	Scale (approx)	Logged By
	1:50	SM
	Figure No. M505.S301	



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Site
ROBROYSTON NORTH

Borehole
Number
S302

Boring Method
TERRIER RIG

Casing Diameter

Ground Level (mOD)

Client

Job
Number
M505

Location

Dates
14/02/2020

Engineer

JOHNSON POOLE & BLOOMER

Sheet
1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	E1					(0.40)	TOPSOIL			
0.50	E2					0.40 (0.40)	Firm consistency mottled brown sandy slightly gravelly CLAY. Gravel content is fine and medium (Possible Made Ground)			
1.00	E3					0.80	Firm consistency greyish brown sandy slightly gravelly CLAY. Gravel content is fine and medium			
1.20-2.00 1.20-2.00	B4 U			UNSUCCESSFUL U100		(1.10)				
2.00-2.45 2.00-2.45	SPT N=22 B5			20,9/6,5,5,6		1.90	Stiff consistency grey sandy gravelly CLAY with cobbles. Gravel content is fine to coarse			
3.00-4.00	U6					(2.30)				
4.00-4.20 4.00-4.20	SPT 50/50 B7			6,6/50 14/02/2020: DRY		4.20	#OBSTRUCTION (Bedrock or boulder) Complete at 4.20m			

Remarks

Denotes driller's description
A 50mm diameter standpipe was installed at a depth of 4.00m
Excavating from 0.00m to 1.20m for 1 hour.

Scale (approx)

1:50

Logged By

SM

Figure No.

M505.S302



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Site
ROBROYSTON NORTH

Borehole Number
S303

Boring Method TERRIER RIG	Casing Diameter		Ground Level (mOD)	Client	Job Number M505
	Location		Dates 14/02/2020	Engineer JOHNSON POOLE & BLOOMER	Sheet 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	E1					0.40	TOPSOIL			
0.50	E2					0.40	Soft consistency brown sandy slightly gravelly CLAY. Gravel content is fine and medium			
1.00	E3					0.80	Firm consistency mottled greyish brown sandy slightly gravelly CLAY. Gravel content is fine to coarse			
1.20-2.00 1.20-2.00	B4 U			UNSUCCESSFUL U100		(1.10)				
2.00-2.45 2.00-2.45	SPT N=21 B5			5,6/5,4,7,5		1.90	Very high strength stiff consistency grey sandy gravelly CLAY with cobbles. Gravel content is fine to coarse			
3.00-4.00	U6					(2.50)				
4.00-4.40 4.00-4.40	SPT 60/250 B7			5,4/5,5,50 14/02/2020:DRY		4.40	#OBSTRUCTION (Bedrock or boulder) Complete at 4.40m			

Remarks
A 50mm diameter standpipe was installed at a depth of 4.00m
Denotes driller's description
Excavating from 0.00m to 1.20m for 1 hour.

Scale (approx)	Logged By
1:50	SM
Figure No. M505.S303	



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Site
ROBROYSTON NORTH

Borehole
Number
S304

Boring Method
TERRIER RIG

Casing Diameter

Ground Level (mOD)

Client

Job
Number
M505

Location

Dates
13/02/2020

Engineer
JOHNSON POOLE & BLOOMER

Sheet
1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	E1					(0.40)	TOPSOIL			
0.50	E2					0.40 (0.30) 0.70	Firm consistency mottled brown and grey sandy slightly gravelly CLAY. Gravel content is fine and medium			
1.00	E3					(1.20)	Medium strength firm consistency greyish brown sandy slightly gravelly CLAY. Gravel content is fine and medium			
1.20-2.00	U4									
2.00-2.45	SPT N=20 B5			4,4/5,5,4,6		1.90	Stiff consistency dark grey sandy gravelly CLAY with cobbles. Gravel content is fine to coarse			
3.00-4.00	U6					(3.10)				
4.00-4.45	SPT N=19 B7			6,4/5,4,5,5		5.00	Complete at 5.00m			
4.00-4.45										

13/02/2020:DRY

Remarks
A 50mm diameter standpipe was installed at a depth of 5.00m
Denotes driller's description
Excavating from 0.00m to 1.20m for 1.00 hour.

Scale (approx)
1:50
Logged By
SM

Figure No.
M505.S304



AITKEN LABORATORIES LTD

Site
ROBROYSTON NORTH

Borehole Number
S305

Boring Method
TERRIER RIG

Casing Diameter

Ground Level (mOD)

Client

Location

Dates
13/02/2020

Engineer
JOHNSON POOLE & BLOOMER

Job Number
M505

Sheet
1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	E1					(0.40)	TOPSOIL			
0.50	E2					0.40	Firm consistency mottled brown and grey sandy slightly gravelly CLAY. Gravel content is fine and medium (Possible Made Ground)			
						(0.50)				
1.00	E3					0.90	Medium strength firm consistency mottled brown and grey sandy CLAY			
1.20-2.00	U4					(0.60)				
2.00-2.45	SPT N=20			4,4/5,5,4,6		1.50	Stiff consistency dark grey sandy gravelly CLAY with cobbles. Gravel content is fine to coarse			
2.00-2.45	B5									
3.00-4.00	U6					(3.50)	...at 3.00m, medium strength			
4.00-4.45	SPT N=22			6,4/5,5,6,6		5.00	Complete at 5.00m			
4.00-4.45	B7									
				13/02/2020:DRY						

Remarks
Denotes drillers description
A 50mm diameter standpipe was installed at a depth of 5.00m
Excavating from 0.00m to 1.20m for 1.00 hour.

Scale (approx) 1:50

Logged By SM

Figure No. M505.S305



AITKEN LABORATORIES LTD

Site
ROBROYSTON NORTH

Borehole
Number
S306

Boring Method
TERRIER RIG

Casing Diameter

Ground Level (mOD)

Client

Job
Number
M505

Location

Dates
13/02/2020

Engineer

JOHNSON POOLE & BLOOMER

Sheet
1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	E1					(0.40)	TOPSOIL			
0.50	E2					0.40 (0.30) 0.70	Soft consistency mottled brown sandy slightly gravelly CLAY. Gravel content is fine and medium			
1.00	E3					(0.70)	Low strength soft consistency greyish brown slightly sandy slightly gravelly CLAY. Gravel content is fine and medium			
1.20-2.00	U4					1.40	Stiff consistency grey sandy gravelly CLAY with cobbles. Gravel content is fine to coarse			
2.00-2.45	SPT N=21 B5			5,5/4,6,4,7						
3.00-4.00	U6					(3.60)				
4.00-4.45	SPT N=19 B7			6,6/5,4,4,6						
				13/02/2020: DRY		5.00	Complete at 5.00m			

Remarks
A 50mm diameter standpipe was installed at a depth of 5.00m
Denotes driller's description
Excavating from 0.00m to 1.20m for 1.00 hour.

Scale
(approx)

1:50

Logged
By

SM

Figure No.
M505.S306



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Site
ROBROYSTON NORTH

Borehole Number
S307

Boring Method TERRIER RIG	Casing Diameter		Ground Level (mOD)	Client	Job Number M505
	Location		Dates 12/02/2020	Engineer JOHNSON POOLE & BLOOMER	Sheet 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	E1					(0.40)	TOPSOIL			
0.50	E2					0.40 (0.30) 0.70	Soft consistency mottled brown and grey sandy slightly gravelly CLAY. Gravel content is fine and medium			
1.00	E3					(0.70)	Medium strength firm consistency brownish grey sandy slightly gravelly CLAY. Gravel content is fine and medium			
1.20-2.00	U4					1.40	Stiff consistency grey sandy gravelly CLAY with cobbles. Gravel content is fine to coarse			
2.00-2.45 2.00-2.45	SPT N=18 B5			4,5/4,4,5,5		(2.10)				
3.00-3.50	U6									
3.50	B7			12/02/2020:DRY		3.50	#OBSTRUCTION (Bedrock or boulder)			
3.50-3.50	SPT(C) 50*/0			50/			Complete at 3.50m			

Remarks # Denotes driller's description A 50mm diameter standpipe was installed at a depth of 3.50m Excavating from 0.00m to 1.20m for 1.00 hour.	Scale (approx)	Logged By
	1:50	SM
	Figure No. M505.S307	