
Appendix A Site Testing

Excavation Method

The boreholes were drilled using hydraulic percussion window-sampling equipment.

Sampling

1. Disturbed Samples

Representative samples of the different strata encountered are taken from the hand auger holes and placed in jars with tight-fitting lids. These samples are examined for soil description.

2. Undisturbed Core Samples

Samples of cohesive soils are taken in 38mm diameter sample tubes driven into the ground by hand. The samples are thus obtained in a relatively undisturbed condition. The sample tubes are sealed with wax and capped to minimise moisture content changes prior to testing in the laboratory.

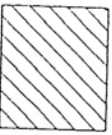
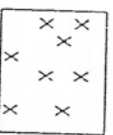
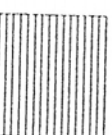
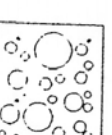
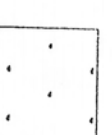
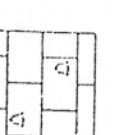
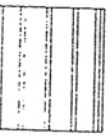
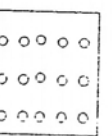
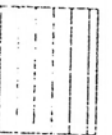
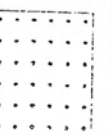
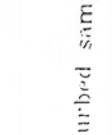
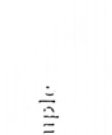
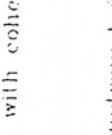
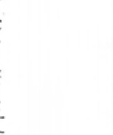
3. Bulk Samples

Bulk samples of cohesionless soils are taken, the amount being dependent on the grading of the soil. The samples are placed in stout plastic bags to prevent loss of the fine fraction.

The following plates are attached and complete this Appendix:

Key to Logs
Borehole Logs

Key to Legends on Logs
Composite soil types e.g. silty clay
shown as combined legend

C		Made Ground
S		Silt
100 200		Clay
U		Sand
J		Gravel
B		Peat
W		Chalk
V 240		Void
H 120		Shale
Cone Penetration Test Blows per 75mm inc		Conglomerate
Standard Penetration Test Blows per 75mm inc		Breccia
Partial penetration Total Blow Counts over achieved penetration		Siltstone
100mm thick-walled driven sampler. Blow counts shown under 'U'.		Mudstone
Small disturbed sample		Sandstone
Bulk disturbed sample		Coal seam
Water sample		Void
Vane Test with cohesion (kPa)		Shale
Forked penetrometer Reading approx cu/2		Conglomerate
Standard Penetration Test Blows per 75mm inc		Breccia

Dwg Details

Borehole & Trial Pit Key

Date As report
By Chk App
AY

Site General

Dwg Ref Gen/SK1

SAMPLING/IN-SITU TESTING						
Depth (m)	Type	Penetration Blows				
						N
.5	B					
1	D					
1.5	D					
2	B					
2.5	D	P	2	2	3	5
3	D					12
3.5	D					
4	D					
4.5	D					
5	D					
5.5	D	P	3	3	4	3
6	D					13
6.5	D					
7	D					
7.5	D					
8	D					
8.5	D	P	3	4	5	6
9	D					18
9.5	D					
10	D					
10.5	D					
11	D					
11.5	D	P	4	5	6	8
12	D					23
12.5	D					
13	D					
13.5	D					
14	D					
14.5	D	P	6	6	6	7
15	D					25

DESCRIPTION OF STRATA
Brown sandy clay with brick and concrete fragments. (MADE GROUND)
Soft brown silty sandy clay with brick fragments. (MADE GROUND)
Firm, becoming stiff light brown, becoming brown grey mottled fissured silty CLAY with selenite. (LONDON CLAY)
Stiff to very stiff dark grey fissured silty CLAY. Occasional claystones. Occasional thin laminations of silty fine sand and occasional selenite. (LONDON CLAY) Claystone at 7.7m

STRATA			
Legend	Reduced Level	Depth m	Thickness m
		.4	.4
		.8	.4
			10
		10.8	

Ground Water Record

Date	Time	B-Hole (m)	Casing (m)	Strike (m)	Stand (m)	Time

Chiselling Record

T (hrs)	From (m)	To (m)

Casing

Diam.	Depth (m)

PROJECT

258-262 Bellsizes Road, London NW6.

CLIENT

R.T James and Partners

DATE

Sept 1993

DIAM

150mm

REF

J3306

BH 1

SHEET 1 OF 2

Cable Percussion BH Log

Engineer

Checked

SAMPLING/IN-SITU TESTING							DESCRIPTION OF STRATA		STRATA			
Depth (m)	Type	Penetration Blows				Legend			Reduced Level	Depth m	Thickness m	
15.5	D							14.2	25			
16	D											
16.5	D											
17	D P	9	9	10	11	39						
17.5	D											
18	D											
18.5	D											
19	D											
19.5	D											
20	D											
20.5	D P	10	13	17	19	59						
21	D											
21.5	D											
22	D											
22.5	D											
23	D											
23.5	D P	12	15	20	28	83						
24	D											
24.5	D											
25	D											
Borehole terminated at 25m.bgl												

Notes: Water strikes localised from claystone.

Ground Water Record							Chiselling Record			Casing	
Date	Time	B-Hole (m)	Casing (m)	Strikes (m)	Stand (m)	Time	T (hrs)	From (m)	To (m)	Diam.	Depth (m)
02.09	pm	7.7	3.0	7.7	7.6	0.5hr				150mm	3.0

PROJECT 258-262 Bellsizes Road, London NW6.		DATE Sept 1993	DIAM 150mm
CLIENT R.T James and Partners		REF J3306	BH 1 SHEET 2 OF 2
Cable Percussion BH Log		47J: 2B: 9U100: 8SPT	Engineer Checked

SAMPLING/IN-SITU TESTING							STRATA			
Depth (m)	Type	Penetration Blows					Legend	Reduced Level	Depth m	Thickness m
.5	B									
1	B P	16	8	9	11	44			.7	.7
1.5	D									
2	B C	4	3	3	3	18				2.9
2.5	D									
3	B P	2	2	3	1	8			3.6	
3.5	D									
4	B U ₁₈									
4.5	D									
5	D									
5.5	D P	3	3	5	5	16				
6	D									
6.5	D									
7	D U ₂₄									7.2
7.5	D									
8	D									
8.5	D P	3	4	6	7	20				
9	D									
9.5	D									
10	D U ₃₁									
10.5	D									
11	D								10.8	
11.5	D P	4	5	6	8	23				
12	D									
12.5	D									
13	D U ₃₁									
13.5	D									
14	D									
14.5	D P	5	7	7	9	28				
15	D									

DESCRIPTION OF STRATA
Brick, concrete rubble.
Brown and dark grey silty sandy ash and gravel, with brick and timber fragments. (MADE GROUND)
Firm mid to light brown, becoming grey mottled fissured silty CLAY with occasional selenite. Becoming stiff with depth. (LONDON CLAY)
Stiff dark grey fissured silty CLAY, with occasional thin silty partings and selenite. (LONDON CLAY)

Ground Water Record

Date	Time	B-Hole (m)	Casing (m)	Strike (m)	Stand (m)	Time

Chiselling Record

T (hrs)	From (m)	To (m)

Casing

Diam.	Depth (m)

PROJECT
258-262 Bellisize Road, London NW6.

DATE
Sept 1993

DIAM
150mm

CLIENT
R.T James and Partners

REF
J3306

BH 2
SHEET 1 OF 2

Cable Percussion BH Log

Engineer
Checked

SAMPLING/IN-SITU TESTING							DESCRIPTION OF STRATA	STRATA			
Depth (m)	Type	Penetration Blows						N	Legend	Reduced Level	Depth m
15.5	D										14.2
16	D										
16.5	D										
17	D										
17.5	D P	5	7	8	7	27					
18	D										
18.5	D										
19	D										
19.5	D										
20	D										
20.5	D P	9	11	18	23	61					
21	D										
21.5	D										
22	D										
22.5	D										
23	D										
23.5	D P	10	13	20	33	76					
24	D										
24.5	D										
25	D										
							Borehole terminated at 25m.bgl			25	

Note: Water strike slow and localised

Ground Water Record

Date	Time	B-Hole (m)	Casing (m)	Strike (m)	Stand (m)	Time
07.09	am	22.7	3.0	22.7	22.5	0.5hr

Chiselling Record

T (hrs)	From (m)	To (m)

Casing

Diam.	Depth (m)
150mm	3.0

PROJECT
258-262 Bellsize Road, London NW6.

DATE
Sept 1993

DIAM
150mm

CLIENT
R.T James and Partners

REF
J3306

BH 2
SHEET 2 OF 2

Cable Percussion BH Log

45J: 5B: BU100: 10SPT

Engineer

Checked

APPENDIX B

LABORATORY TESTING

Sample Preparation

Samples for laboratory testing were prepared to the requirements of B.S. 1377:Part 1:1990.

Triaxial Compression Tests

The test were quick undrained tests in accordance with B.S. 1377:Part 7:1990 Test 8.

The samples used were either 38 millimetres or 100 millimetres in diameter and 76 or 200 millimetres in length. The sample was sealed in a rubber membrane to prevent changes in moisture content during testing and compressed at a constant rate of strain (2% per minute) whilst being subjected to a constant lateral pressure. Loading was continued until the sample fails. The compressive stress is the axial load at failure divided by the cross-sectional area of the sample.

Sulphate Test

The sulphates present in the soil or ground water are determined in accordance with B.S. 1377:Part 3 Test 5. Where high total sulphate concentrations are measured the soluble sulphate concentrations is determined using a 2:1 water:soil extract.

The pH values of the soil or ground water are determined in accordance with B.S. 1377:Part 3:1990 Test 9.

Plasticity Indices

The plasticity indices was obtained in accordance with Test 4 and Test 5: BS 1377:Part 2:1990. A representative sample of cohesive soil is tested at three different moisture contents using a cone penetrometer and the liquid limit established, which is defined as the point at which the soil changes from a plastic solid to a fluid. The plastic limit which is defined as the point at which the soil changes from a plastic to a brittle solid is also determined. The results are presented as the natural moisture content the liquid limit, the plastic limit and the plasticity index.

Grading Analyses

The test were carried out in accordance with Test 8: BS1377:Part 2:1990. The bulk sample is sub-divided by riffing to attain a suitable representative sample. If the sample contains little or no fines, it is dried and passed through a series of sieves of succeeding finer mesh in order to obtain the proportion of different sized particles. If fines are present within the sample, these are removed by washing through a 63 micron sieve and the remaining soil dried and sieved as described previously.

The following plates are attached and complete this Appendix:

Laboratory Test Results

TEST RESULTS

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		1.0	
Description			
Light brown mottled fissured silty CLAY.			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
20	112	1.93	34
Undrained Cohesion 56 kN/m ²		ϕ	degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		4.0	
Description			
Red brown mottled fissured silty CLAY with occasional selenite			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
80	165	1.92	31
Undrained Cohesion	82	kN/m ²	ϕ degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		7.0	
Description			
Brown fissured silty CLAY with occasional selenite			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
140	275	1.90	31
Undrained Cohesion 137 kN/m ²		φ	degrees

TEST RESULTS

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		10.0	
Description			
Brown orange mottled fissured silty CLAY with abundant silt pockets and partings and occasional selenite			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
200	272	1.92	30
Undrained Cohesion 136 kN/m ²		φ	degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		13.0	
Description			
Dark brown fissured very silty CLAY			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
260	294	1.93	30
Undrained Cohesion 147 kN/m ²		φ	degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		16.0	
Description			
Dark brown fissured very silty CLAY			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
320	289	1.98	26
Undrained Cohesion 144 kN/m ²		φ	degrees

TEST RESULTS

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		19.0	
Description			
Dark brown fissured silty CLAY with silt pockets and partings			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
380	369	1.97	27
Undrained Cohesion		184 kN/m ²	ϕ degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		22.0	
Description			
Dark brown fissured silty CLAY			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
440	410	1.99	25
Undrained Cohesion 205 kN/m ²		φ	degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		24.5	
Description			
Dark brown fissured silty CLAY			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
490	427	1.99	25
Undrained Cohesion 213 kN/m ²		ϕ	degrees

TEST RESULTS

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
2		7.0	
Description			
Brown fissured silty CLAY with orange staining on fissure faces and occasional selenite and shell fragments			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
200	243	1.89	21
Undrained Cohesion		121 kN/m ²	ϕ degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
2		10.0	
Description			
Brown fissured silty CLAY with orange staining on fissure faces and occasional selenite and shell fragments			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
200	280	1.89	21
Undrained Cohesion		140 kN/m ²	ϕ degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
2		13.0	
Description			
Dark brown fissured very silty CLAY			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
260	302	1.96	27
Undrained Cohesion 151 kN/m ²		φ degrees	

TEST RESULTS

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
2		16.0	
Description			
Dark gre brown fissured silty CLAY with silt pockets			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
360	101	1.90	27
Undrained Cohesion 50 kN/m ²		φ	degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
2		19.0	
Description			
Dark grey brown fissured silty CLAY			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
380	330	1.98	25
Undrained Cohesion 165 kN/m ²		φ	degrees

TRIAXIAL TEST RESULTS			
BOREHOLE		DEPTH (m)	
2		24.5	
Description			
Dark brown fissured silty CLAY			
Test Type: U100 Single stage			
Cell kN/m ²	Compressive kN/m ²	Density Mg/m ³	M/C %
490	348	1.90	26
Undrained Cohesion 174 kN/m ²		φ	degrees

TEST RESULTS

ATTERBERG LIMIT TEST RESULTS				
BOREHOLE		DEPTH (m)		
1		4.0		
Description				
Red brown mottled silty CLAY with occasional selenite				
LL %	PL %	PI %	M/C %	CLASS
75	29	46	31	CV

ATTERBERG LIMIT TEST RESULTS				
BOREHOLE		DEPTH (m)		
1		19.0		
Description				
Dark brown silty CLAY with silt pockets				
LL %	PL %	PI %	M/C %	CLASS
71	29	42	27	CV

ATTERBERG LIMIT TEST RESULTS				
BOREHOLE		DEPTH (m)		
2		16.0		
Description				
Dark brown silty CLAY with silt pockets				
LL %	PL %	PI %	M/C %	CLASS
72	30	42	27	CV

TEST RESULTS

SULPHATE TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		4.0	
Description			
Soil			
TOTAL CONCENTRATION	SOLUBLE CONCENTRATION	DESIGN CLASS	pH
2.056%	0.528g/l	1	6.60

SULPHATE TEST RESULTS			
BOREHOLE		DEPTH (m)	
1		19.0	
Description			
Soil			
TOTAL CONCENTRATION	SOLUBLE CONCENTRATION	DESIGN CLASS	pH
0.239%	0.178g/l	1	7.27

SULPHATE TEST RESULTS			
BOREHOLE		DEPTH (m)	
2		13.0	
Description			
Soil			
TOTAL CONCENTRATION	SOLUBLE CONCENTRATION	DESIGN CLASS	pH
0.239%	0.192g/l	1	7.17

SULPHATE TEST RESULTS			
BOREHOLE		DEPTH (m)	
2		16.0	
Description			
Soil			
TOTAL CONCENTRATION	SOLUBLE CONCENTRATION	DESIGN CLASS	pH
0.239%	0.178g/l		