

Project Title: Queen Street, London				Status: FINAL		Location ID: BH01		 Card Geotechnics Limited, 12 Melcombe Place, London, NW1 6U www.cgl-uk.com	
Client: Verity Trustees Ltd									
Method and Plant Used				Groundwater		Location Type: Cable percussion (shell and sugar)			
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rise to			
0.00	1.20	IF	Hand tools	0.60	20	0.60		Coords: 533227.635E/191686.609N	Level: 17.536m
1.20	25.00	CP	Cable percussion rig	24.90	20	23.70		Ordnance Survey Great Britain National Grid	Final Depth: 25.00 m
				Orientation: 0°		Inclination: 90°			
				Date Start: 12/02/2024		Date End: 14/02/2024		Sheet 1 of 3	
Samples & Tests				Water Level (m)	Legend / Cover	Strata Depth (m)	Level (m)	Strata Description	
Sample Depth (m)	Type/Ref	Tests/Results							Inst/Backfill
0.20 - 0.40	D 1					0.20	17.34	Grey concrete. Aggregate is angular to rounded fine to coarse of flint.	
0.40 - 0.50	D 1					0.40	17.14	[MADE GROUND] Brown gravelly sand. Sand is fine to coarse. Gravel is angular to rounded fine to coarse of flint and concrete.	
0.45 - 0.55	D 2							[MADE GROUND] Orange brown slightly silty sand and gravel. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and concrete.	
0.60 - 0.80	B 3							[MADE GROUND] 0.60m bgl - Rare flint cobbles noted. Becoming slightly clayey.	
1.20 - 1.50	B 4	SPT(C) 1.20m N=60 (3,4/50 for 250mm)				1.20	16.94	Very dense greyish brown slightly sandy gravel. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and rare concrete.	
								[MADE GROUND - POSSIBLE REWORKED UNDIFFERENTIATED THAMES TERRACE DEPOSITS]	
1.80 - 2.00	D 5					2.00	15.54	Very dense orangeish brown sandy GRAVEL. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint.	
2.00 - 2.50	B 6	SPT(C) 2.00m N=60 (3,17/50 for 237mm)						[UNDIFFERENTIATED THAMES TERRACE DEPOSITS]	
3.00	D 7							3.00m bgl - Becoming dense.	
3.00 - 3.50	B 8	SPT(C) 3.00m N=33 (3,4/7,8,8)							
3.70 - 3.80	D 9					3.70	13.84	Soft to firm orangeish brown CLAY.	
3.80 - 3.90	D 10							[WEATHERED LONDON CLAY FORMATION] 3.80m bgl - Becoming brown mottled orangeish brown.	
4.00 - 4.45	D 11	SPT(C) 4.00m N=12 (3,1/2,2,3,5)				4.00	13.54	Firm becoming stiff to very stiff dark brown CLAY.	
4.00 - 4.50	B 12							[LONDON CLAY FORMATION]	
5.00 - 5.45	U 13	Ublow=10 Recovery=70%							
5.45 - 5.55	D 14								
6.50 - 6.95	D 15								
6.95 - 6.95	D 15	SPT(C) 6.50m N=15 (3,2/3,3,5)							
7.40 - 7.50	D 16	HV 7.40m (p) - 130 kPa						7.40m bgl - Rare bioturbation noted.	
8.00 - 8.45	U 17	Ublow=40 Recovery=100%							
8.45 - 8.55	D 18								
8.50 - 8.95	D 19								
8.95 - 8.95	D 19	SPT(C) 8.50m N=22 (2,4/4,5,6,7)						9.50m bgl - Becoming stiff.	
Strata continues onto next page									
Notes:									
1) Borehole terminated at target depth of 25mbgl.									
2) IS - Environmental Sample, D - Disturbed sample, B - Bulk Sample, UT - Undisturbed Sample, SPT - Standard Penetration Test, HV - Hand Shear Vane.									
3) Groundwater encountered at 0.50mbgl with no rise recorded and 24.90mbgl rising to 23.70mbgl after 20 minutes.									
4) Shallow install details: 0.0m to 2.0m plain pipe with bentonite seal; 2.0m to 3.5m slotted pipe with gravel filter; 3.5m to 4.5m bentonite seal.									
Deep install details: 0.0m to 23.5m plain pipe with arisings 4.5m to 23.5m; 23.5m to 24.5m slotted pipe with gravel filter. Fitted with flush cover.									
				Hole Diameter		Casing		Hammer Information	
				Depth (m)	Diam (mm)	Depth (m)	Diam (mm)	Energy Ratio	Serial No.
				25.00	200	3.90	200	68%	BHD003
				Install Response Zones		Section ID		CGL Reference	
				Ref	From (m)	To (m)			
				Pipe1	2.00	3.50			
				Pipe2	23.50	24.50			
				Scale: 1:50		Logged By: MEM		Checked By: JSB/JW	
						Approved By: MFC			
								CGL Reference	
								CGL 10175	

Project Title: Queen Street, London							Status: FINAL		Location ID BH01		 Card Geotechnics Limited, 12 Melcombe Place, London, NW1 6J www.cgl-uk.com	
Client: Verity Trustees Ltd												
Method and Plant Used				Groundwater			Location Type: Cable percussion (shell and auger)					
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rise To	Coords: 533227.635E/191686.609N Level: 17.536m					
0.00	1.20	IP	Hand tools	0.60	20	0.60	Ordnance Survey Great Britain					
1.20	25.00	CP	Cable percussion rig	24.90	20	23.70	National Grid					
							Final Depth: 25.00 m					
							Orientation: 0°		Inclination: 90°			
							Date Start: 12/02/2024		Date End: 14/02/2024		Sheet 2 of 3	
Samples & Tests				Water Level (m)	Legend / Cover	Strata Depth (m)	Level (m)	Strata Description				Inst / Backfill
Sample Depth (m)	Type / Ref	Tests/Results										Depth (m)
10.50	0 30	HGV 10.50m (p) = 130 kPa						Firm becoming stiff to very stiff dark brown CLAY. [LONDON CLAY FORMATION]				
11.00 - 11.45	U 21	Ublown=60 Recovery=100%										11
11.45 - 11.55	0 22							11.45m bgl - Becoming fissured. Fissures are subhorizontal very closely spaced.				
12.50 - 12.95	05 23	SPT(R) 12.50m N=25 (3A/5.6, 7.8)						12.50m bgl - Becoming slightly sandy. Sand is fine. Rare pockets of light brown silty fine sand noted (<20mm).				12
13.50	0 24											13
14.00 - 14.45	U 25	Ublown=65 Recovery=100%										14
14.45 - 14.55	0 26											15
15.50 - 15.95	05 26	SPT(R) 15.50m N=35 (3A/5.6, 7.8)						15.95m bgl - Becoming slightly sandy. Sand is fine.				16
16.50	0 28											17
17.00 - 17.45	0 29											18
17.00 - 17.45	U 29	Ublown=60 Recovery=100%										19
18.50 - 18.95	05 31	SPT(R) 18.50m N=35 (3A/5.6, 7.8)						18.50m bgl - Becoming very stiff.				20
19.50	0 32							19.50m bgl - Becoming sandy. Sand is fine. Frequent pockets of light brown silty fine sand (<30mm) noted.				21
20.00 - 20.45	U 31	Ublown=60 Recovery=100%						Strata continues onto next page				22

Notes:				Hole Diameter		Casing		Hammer Information		Scale: 1:50	
1) Borehole terminated at target depth of 25mbgl.				Depth (m)	Diam (mm)	Depth (m)	Diam (mm)	Energy Ratio	Serial No.	Logged By:	MEM
2) ES - Environmental Sample, D - Disturbed Sample, B - Bulk Sample, UT - Undisturbed Sample, SPT - Standard Penetration Test, HGV - Hard Shear Vane.				25.00	200	3.90	200	68%	BHC603	Checked By:	JSB/JW
3) Groundwater encountered at 0.60mbgl with no rise recorded and 24.90mbgl rising to 23.70mbgl after 20 minutes.										Approved By:	MPC
4) Shallow install details: 0.0m to 2.0m plain pipe with bentonite seal; 2.0m to 3.5m slotted pipe with gravel filter; 3.5m to 4.5m bentonite seal.				Install Response Zones		Section ID:					
Deep install details: 0.0m to 23.5m plain pipe; with risings 4.5m to 23.5m; 23.5m to 24.5m slotted pipe with gravel filter. Filled with flush cover.				Ref		From (m)		To (m)		CGL Reference	
							CGL 10175				

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				Location Type: Cable percussion (shell and auger)							
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rise (m)	Coords: 533227.635E/191686.609N Level: 17.536m		Sheet 3 of 3		
0.00	1.20	IP	Hand tools	0.60	20	0.60	Ordnance Survey Great Britain National Grid Final Depth: 25.00 m				
1.20	25.00	CP	Cable percussion rig	24.90	20	23.70	Orientation: 0° Inclination: 90°				
				Date Start: 12/02/2024		Date End: 14/02/2024					
Samples & Tests				Water Level (m)	Legend / Cover	Strata Depth (m)	Level (m)		Strata Description	Inst / Backfill (m)	Depth (m)
Sample Depth (m)	Type / Ref	Tests/Results									
20.45 - 20.55	D 34							Firm becoming stiff to very stiff dark brown CLAY (LONDON CLAY FORMATION)			21
21.50 - 21.95	D5 35	SPT(S) 21.50m N=39 (L5/7,35,1,1,1)						21.50m bgl - Rare lignite (<15x15mm) noted.			22
22.40 - 22.90	D 36							22.40m bgl - Rare pockets of light brown silty fine sand (<30mm) noted.			23
23.00 - 23.45	U 37	Unknown Recovery=100%									24
23.45 - 23.55	D 38										25
24.50 - 24.90	D5 39	SPT(S) 24.50m N=50 (L6/50 for 2.30min)				24.50	-5.96	Very stiff dark brown slightly sandy silty CLAY. Sand is fine to medium. Rare pockets of glauconitic fine to medium sand (<35mm) noted. Rare gravel of medium rounded flint noted. (LAMBETH GROUP)			26
24.90 - 25.00	D 40					25.00	-7.46	BOM at 25.00m - Achieved target depth.			27
											28
											29
											30

Notes:	Hole Diameter		Casing		Hammer Information		Scale: 1:50		
	Depth (m)	Diam (mm)	Depth (m)	Diam (mm)	Energy Ratio	Serial No.	Logged By: MEM		
	25.00	200	3.90	200	68%	BH0503	Checked By: ISB/JW		
	Install Response Zones						Approved By: MPC		
	Ref						Section ID:		
	From (m)						To (m)		
1) Borehole terminated at target depth of 25mbgl.		2) IS - Environmental Sample, D - Disturbed sample, B - Bulk Sample, UT - Undisturbed Sample, SPT - Standard Penetration Test, HSV - Hand Shear Vane.						3) Groundwater encountered at 0.60mbgl with no rise recorded and 24.90mbgl rising to 23.70mbgl after 20 minutes.	
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								CGL 10175	