



Site Investigation Report

Location

The Lodge
77 Chazey Road
Caversham
Reading
Berkshire

Client: Crawford & Company

Client Reference: SU1901098

Optera Reference: 4146

Compiled by: T Coates

Site Visit Date: 17/07/2019

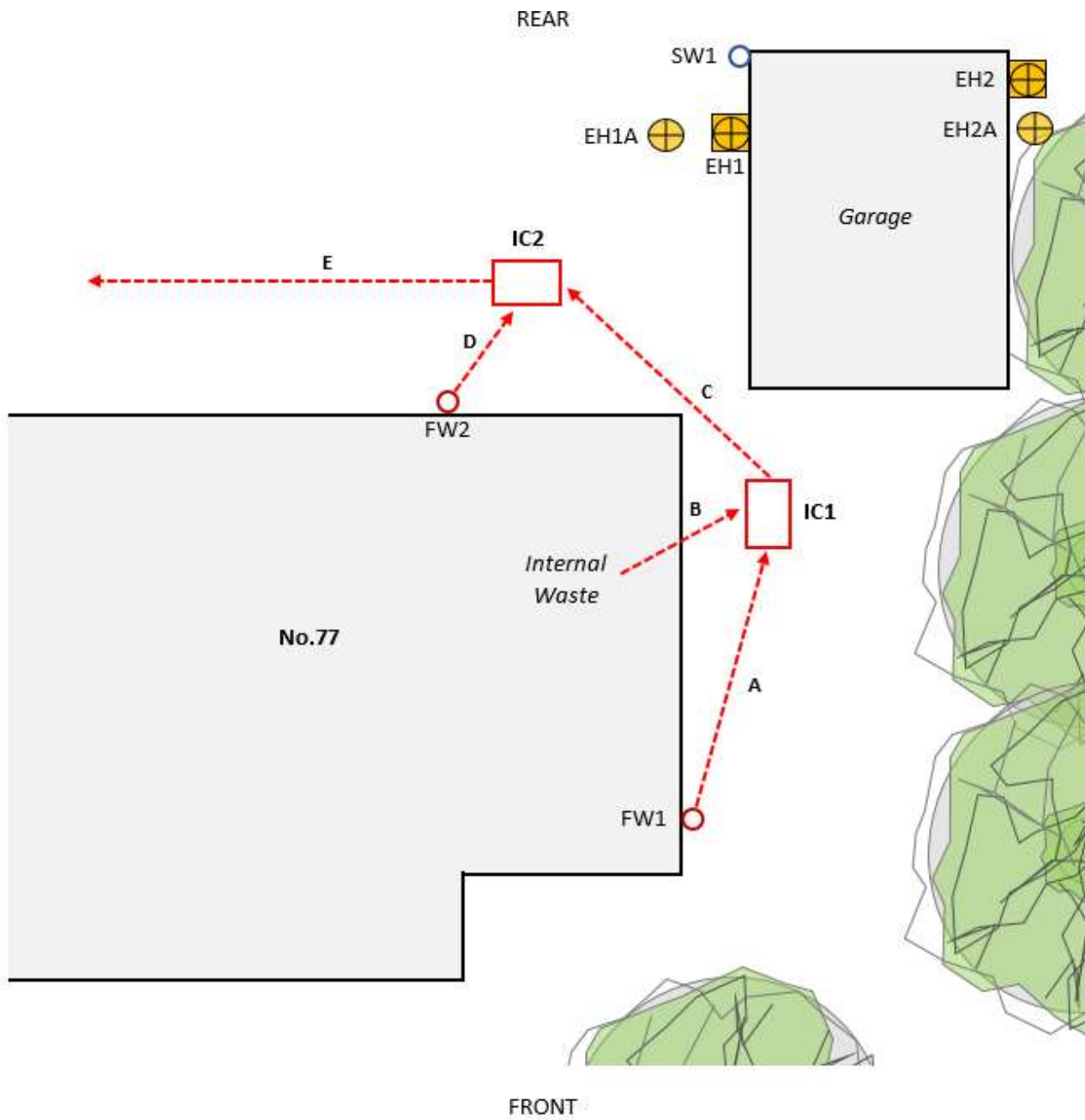


Figure 1 – Site Plan

(Not to Scale)

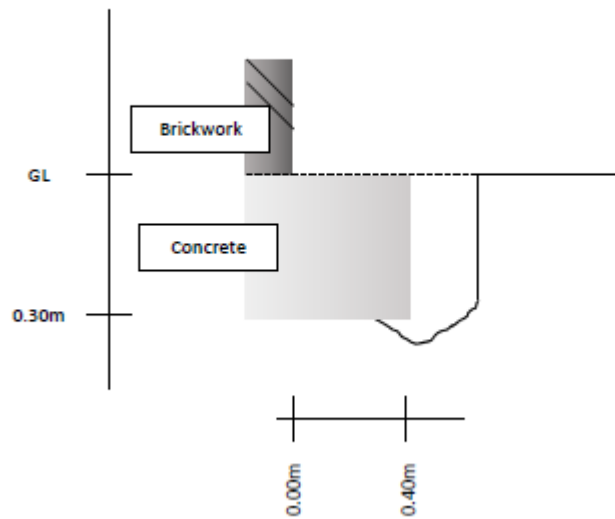


Figure 2 – EH1 cross-section

(Not to Scale)

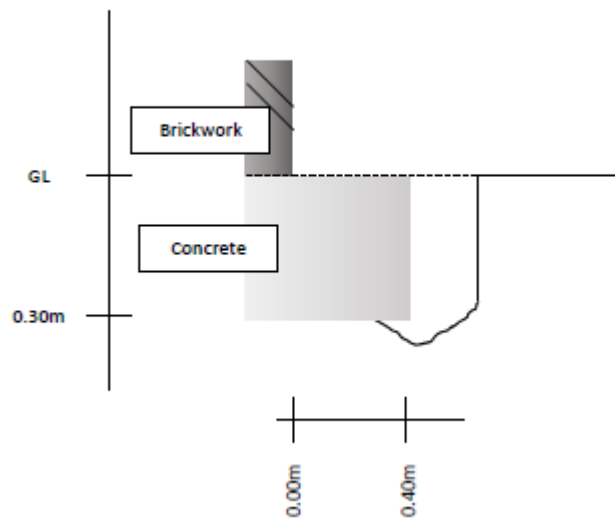


Figure 3 – EH2 cross-section

		Hand Auger Log									
Project Name: Chazey Road				Client: Crawford & Company				Date:			
Location: The Lodge 77 Chazey Road Caversham Reading Berkshire				Contractor: Optera				Drilling Equipment:			
Project No. : 4146				Crew Name: PC							
Borehole Number EH1		Hole Type HA				Logged By PC		Scale 1:50		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Legend	Stratum Description				
		Depth (m)	Type	Results							
					0.30		MADE GROUND: Dark brown gravelly clayey sand with occasional roots and rare brick fragments. Brown gravelly clayey SAND.		1		
				1.20	End of Borehole at 1.200m						
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									10		
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks Terminated at 1.20m due to constant pit collapse. Roots visible to 0.30m.											

optera STRUCTURAL SOLUTIONS		Hand Auger Log									
Project Name: Chazey Road				Client: Crawford & Company				Date:			
Location: The Lodge 77 Chazey Road Caversham Reading Berkshire				Contractor: Optera				Drilling Equipment:			
Project No. : 4146				Crew Name: AW/TC							
Borehole Number EH1A		Hole Type HA				Logged By TC		Scale 1:50		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Legend	Stratum Description				
		Depth (m)	Type	Results							
		0.50 0.50 - 1.00	D RS	HVP=122	0.50		Dark brown gravelly very clayey sand. Gravel is subangular to subrounded fine to coarse flint and brick.				
		1.00 1.00 - 1.50 1.00	D RS				Stiff brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is subangular to subrounded fine to coarse flint.	1			
		1.50 1.50 - 1.80	D RS		1.80		End of Borehole at 1.800m	2			
								3			
								4			
								5			
								6			
								7			
								8			
								9			
								10			
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks Terminated a 1.80m due to gravelly clay.											

		Hand Auger Log									
Project Name: Chazey Road				Client: Crawford & Company				Date:			
Location: The Lodge 77 Chazey Road Caversham Reading Berkshire				Contractor: Optera				Drilling Equipment:			
Project No.: 4146				Crew Name: PC							
Borehole Number EH2		Hole Type HA				Logged By PC		Scale 1:50		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Legend	Stratum Description				
		Depth (m)	Type	Results							
					0.30		MADE GROUND: Dark brown gravelly clayey sand with occasional roots and rare brick fragments.				
					0.70		Brown gravelly clayey SAND.				
							End of Borehole at 0.700m				
								1			
								2			
								3			
								4			
								5			
								6			
								7			
								8			
								9			
								10			
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks Terminated at 0.70m due to constant pit collapse. Roots visible to 0.30m.											

		Window Less Sampler Log									
Project Name: Chazey Road				Client: Crawford & Company				Date:			
Location: The Lodge 77 Chazey Road Caversham Reading Berkshire				Contractor: Optera				Drilling Equipment: Premier 110			
Project No. : 4146				Crew Name: AW/TC							
Borehole Number EH2A		Hole Type WS				Logged By TC		Scale 1:50		Page Number Sheet 1 of 1	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Legend	Stratum Description				
		Depth (m)	Type	Results							
					0.30						
					0.70						
					1.30						
		1.50	D	HVP=144	1.50						
		2.00	D	HVP=163	2.00						
		2.50	D		2.50						
					2.60						

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks Terminated at 2.60m due to dense gravels										
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Summary of Geotechnical Testing

Sample details					Classification Tests				
Borehole / Trial Pit	Depth (m)	Sample Ref	Type	Description	WC (%)	LL (%)	PL (%)	PI (%)	<425 µm (%)
EH1A	0.50	1	D	Brown sandy very gravelly CLAY. Gravel is fine to coarse.	6.4	39	19	20	46
EH1A	1.00	2	D	Brown sandy very gravelly CLAY. Gravel is fine to coarse.	9.9	39	19	20	68
EH1A	1.50	3	D	Brown sandy very gravelly CLAY. Gravel is fine to coarse.	9.6	37	18	19	68
EH2A	1.50	1	D	Brown greyish brown and white mottled sandy CLAY with some fine to medium gravel.	9.5	47	17	30	73
EH2A	2.00	2	D	Yellowish brown mottled white sandy CLAY with some fine to medium gravel.	11.9	44	17	27	97
EH2A	2.50	3	D	Yellowish brown mottled brown sandy CLAY with some fine to coarse gravel.	14.4	49	20	29	95

Laboratory ID	BH / TP No.	Sample Ref.	Depth (m)		Type	Test(s) Scheduled			Reason for Restriction
216919	EH1A	1	0.50		D	FP Suction			High gravel content. Sample unsuitable for test
216920	EH1A	2	1.00		D	FP Suction			High gravel content. Sample unsuitable for test
216921	EH1A	3	1.50		D	FP Suction			High gravel content. Sample unsuitable for test
216922	EH2A	1	1.50		D	FP Suction			High gravel content. Sample unsuitable for test
216923	EH2A	2	2.00		D	FP Suction			High gravel content. Sample unsuitable for test
216924	EH2A	3	2.50		D	FP Suction			High gravel content. Sample unsuitable for test
Comments / remarks									

4146 - Chazey Road

The samples you sent in relation to the above have been examined. Their structures were referable as follows:

EH1A, 0.5-1.0m	
1 no.	Examined root: the family Rosaceae, subfamily POMOIDEAE (a group of closely related trees: Malus (Apple), Pyrus (Pear), Crataegus (Hawthorn), Sorbus (Rowan, Whitebeam, Service tree), Mespilus (Medlar), and some shrubs (Pyracantha (Firethorn), Chaenomeles (Japonica), Cydonia (Quince), Amelanchier, Cotoneaster)).
4 no.	Examined root: AESCULUS (Horse Chestnut and related Buckeyes).
2 no.	Both samples revealed too few cells for microscopic identification.
EH1A, 1.0-1.5m	
2 no.	Examined root: TILIA (Lime).
2 no.	Examined root: AESCULUS (Horse Chestnut and related Buckeyes).
EH1A, 1.5-1.8m	
2 no.	Examined root: TILIA (Lime).
2 no.	Examined root: most referable to AESCULUS (Horse Chestnut and related Buckeyes). This was a very IMMATURE sample.
EH2A, 0.5-0.7m	
2 no.	Examined root: TILIA (Lime).
1 no.	Microscopic examination showed insufficient cells for recognition.
EH2A, 0.7-1.3m	
4 no.	Examined root: TILIA (Lime).
1 no.	Microscopic examination showed insufficient cells for recognition.
EH2A, 1.3-2.0m	
2 no.	Examined root: could well be TILIA (Lime). Less than 0.2mm in diameter.
1 no.	Microscopic examination showed insufficient cells for recognition.
EH2A, 2.0-2.5m	
2 no.	Examined root: also most referable to TILIA (Lime). Again, under 0.2mm in diameter.

EH1 - MACPROBE RESULTS

Blows	Intervals	Total Penetration	Depth From(m)	Depth To(m)
33	75mm	75	1.000	1.075
140	75mm	150	1.075	1.150
100	75mm	175	1.150	1.175

EH2 - MACPROBE RESULTS

Blows	Intervals	Total Penetration	Depth From(m)	Depth To(m)
40	75mm	75	0.500	0.575
140	75mm	150	0.575	0.650
100	75mm	172	0.650	0.675

 CCTV Survey  optera INFRASTRUCTURE SOLUTIONS						
RUN	Start From :	IC1	Finish at :	FW1	Pipe Ø:	100mm
A	Invert Level (m):	1.10	Invert Level (m):	N/A	Material:	Liner
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner
Distance	Code	Remarks				
0.00	SN	Start Node from IC1				
1.80	WL	Water Level 30%				
1.90	FN	Finish Node at FW1				
RUN	Start From :	IC1	Finish at :	Internal Waste	Pipe Ø:	100mm
B	Invert Level (m):	1.10	Invert Level (m):	N/A	Material:	Liner
FOUL	Condition grade:	B	Direction:	Upstream	Responsibility:	Home Owner
Distance	Code	Remarks				
0.00	SN	Start Node from IC1				
1.00	RM	Root Mass 50% from 9 to 4 o'clock				
1.10	FN	Finish Node at Internal Waste				
RUN	Start From :	IC1	Finish at :	IC2	Pipe Ø:	100mm
C	Invert Level (m):	1.10	Invert Level (m):	1.10	Material:	Plastic
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner
Distance	Code	Remarks				
0.00	SN	Start Node from IC1				
4.30	LL	Line of drain deviates left °45				
4.40	FN	Finish Node at IC2				
RUN	Start From :	IC2	Finish at :	FW2	Pipe Ø:	100mm
D	Invert Level (m):	0.40	Invert Level (m):	N/A	Material:	Plastic
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner
Distance	Code	Remarks				
0.00	SN	Start Node from IC1				
1.20	FN	Finish Node at FW2				
RUN	Start From :	IC2	Finish at :	Outside Property	Pipe Ø:	100mm
E	Invert Level (m):	1.10	Invert Level (m):	N/A	Material:	Plastic
FOUL	Condition grade:	B	Direction:	Upstream	Responsibility:	Home Owner
Distance	Code	Remarks				
0.00	SN	Start Node from IC1				
0.90	RM	Root Mass 20% from 9 to 3 o'clock				
1.20	RM	Root Mass 30% from 9 to 3 o'clock				
3.00	RM	Root Mass 20% from 9 to 3 o'clock				
4.00	SA	Survey Abandoned - Outside of Property				

Summary

GENERAL:

Site works consisted of two trial-pits, each extended by hand-auger to form a borehole. Two additional boreholes were also completed to reach completion depth.

A CCTV survey of the drains within 3m of the area of concern was also attempted, for full details see drainage comments below.

BOREHOLE:

EH1 was formed using a hand-auger and taken to 1.20mbgl, where it was terminated due to constant pit collapse.

EH1A was formed using a hand auger – access restrictions prevented the premier 110 from reaching position. The auger was taken to 1.80mbgl, where it was terminated due to gravel preventing the auger from turning.

EH2 was formed using a hand-auger and taken to 0.70mbgl, where it was terminated due to constant pit collapse.

EH2 A was formed using a premier 110 windowless sampling rig and was taken to 2.60mbgl, where it was terminated due to refusal in dense gravels.

ROOTS:

Roots of live appearance were encountered in EH1 to a depth of approx. 0.30mbgl.

Roots of live appearance were encountered in EH1A to a depth of approximately 1.80mbgl.

Roots of live appearance were encountered in EH2 to a depth of approx. 0.30mbgl.

Roots of live appearance were encountered in EH2A to a depth of approximately 2.50mbgl.

WATER STRIKES:

No water strikes were encountered, the holes were partially closed due to collapse in sands and gravels and all were dry on completion.

DRAINAGE:

The inspection chamber, all observed runs, and the surface gully were all in good working condition with no sign of displacement however there was notable root ingress in Run B and Run E.

It was not possible to survey SW1 due to the gully being fully blocked. An attempt was made to clear the gulley by hand and with water but was still inaccessible to the camera.

PHOTOGRAPHS:



Photo 1 – Side elevation of garage



Photo 2 – EH1 Foundation Pit



Photo 3 – EH2 Foundation Pit



Photo 4 – IC1



Photo 5 – IC2



Photo 6 – Blocked SW1