

SITE INVESTIGATION FACTUAL REPORT

Report No: 616887
Client: Crawford Claims Management
Site: 22 Russet Glade

Client Ref: SU1901097
Date of Visit: 13/06/2019



Home Emergency Response - Subsidence Investigation - Drainage Services – Crack & Level Monitoring – Property Video Surveys

Unit E2 First Floor Suite, Boundary Court
Willow Farm Business Park, Castle Donington
Leicestershire, DE74 2NN

☎ 0843 2272362
✉ enquiries@cet-uk.com
💻 www.cet-uk.com

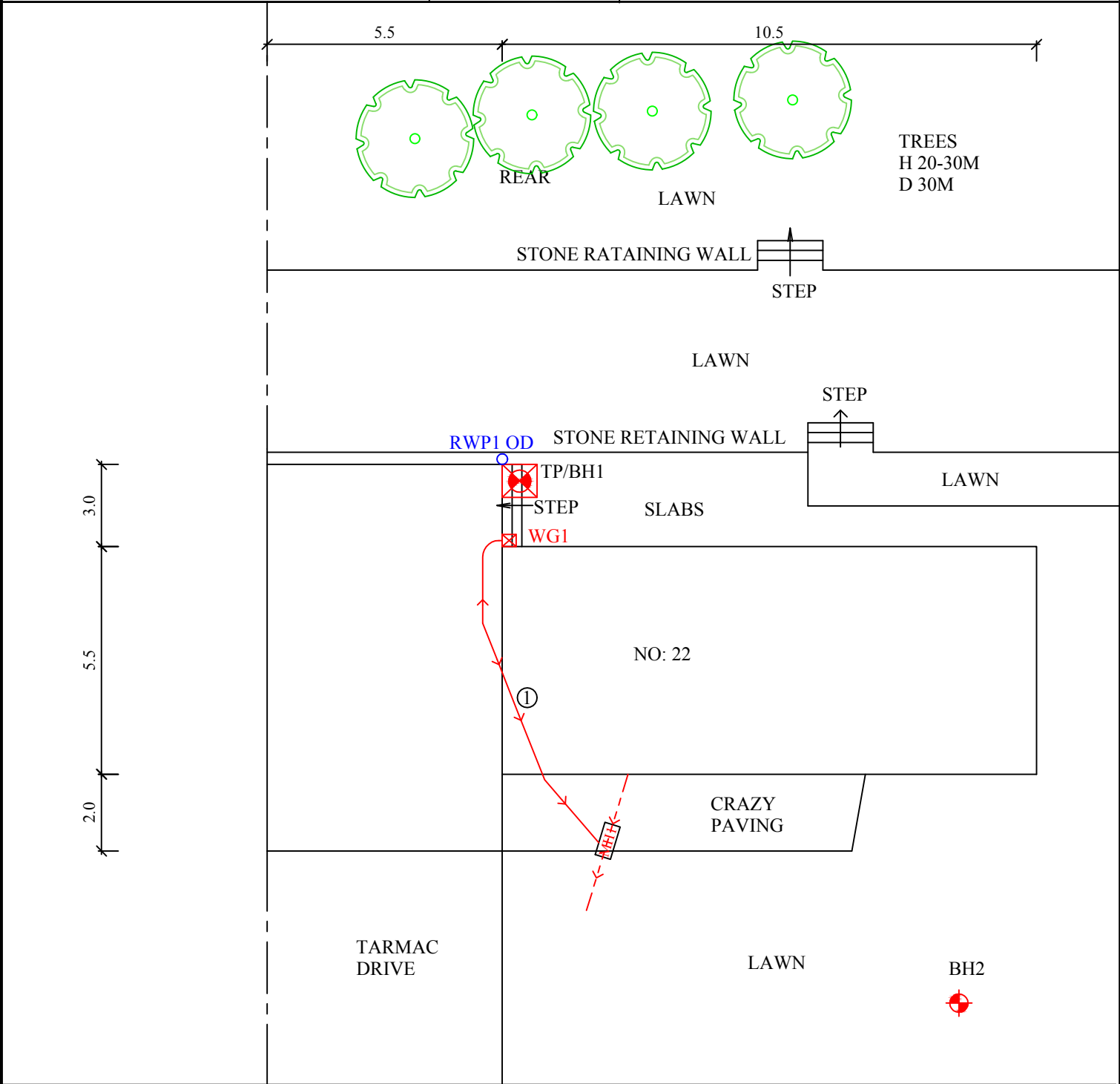
CET is the trading name of CET Structures Ltd
Registered in England No. 02527130

Drainage
Layout Plan

Sheet: 1 of 1
Job No: 616887
Date: 13/06/2019

Site: 22 Russet Glade Reading
Work carried out for: Crawford Claims MGMT SUS

SA (SI)	CFT (Checked)	Weather: RAIN
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DRAIN REPAIR RECOMMENDATIONS

Mh 1 upstream to Wg 1 - Run 1 From Mh 1 Hpwj to clear and line upstream to Wg 1 with super flex liner.

Scale: N.T.S.	Parking:	Power:	Water:	Approx age:
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Surface Water Drain --->---
Foul Water Drain ->->-

TEST REPORT: Trial Pit

REPORT NUMBER: C1028998 / 74051.1.1.1

TRIAL PIT REF: Tp 1

DATE: 13/06/2019

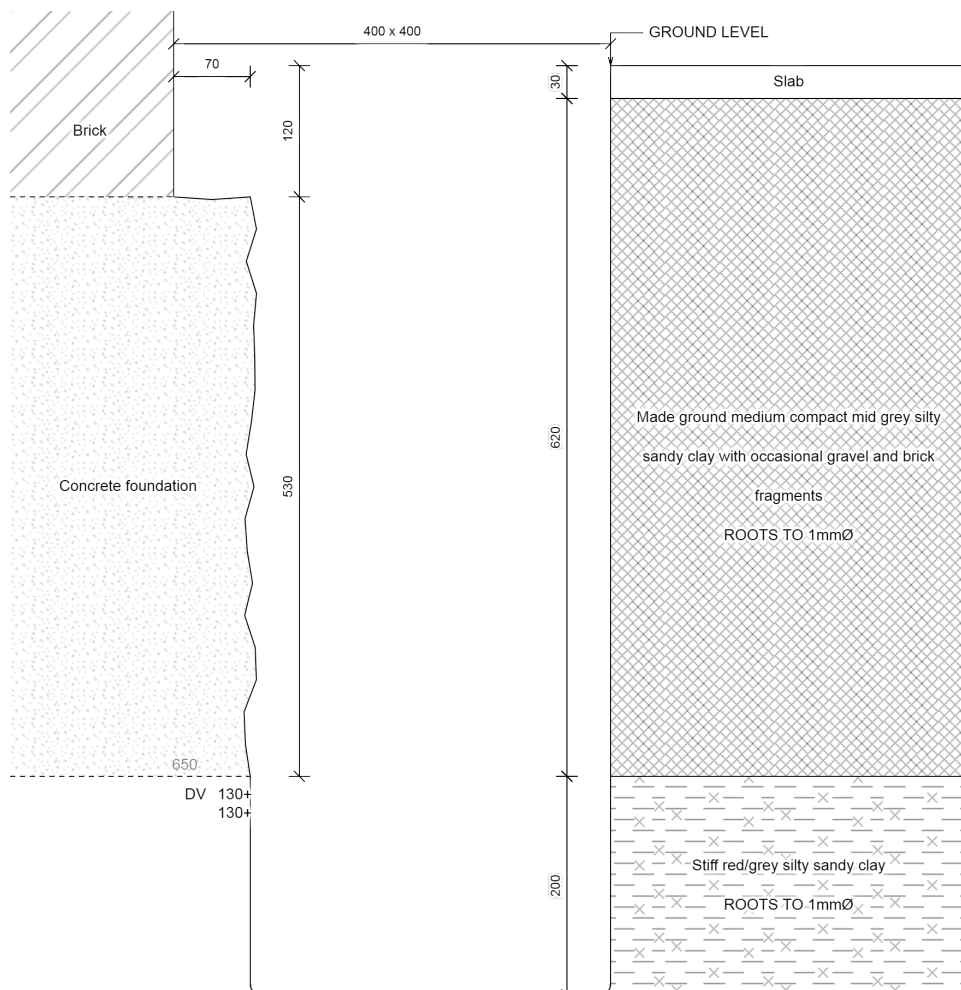
CLIENT: Crawford & Co

SITE: 22 Russet Glade

JOB NO: 616887

WEATHER: Wet

EXCAVATION METHOD: Hand tools



Key:

D Small disturbed sample J Jar sample
B Bulk disturbed sample V Pilcon vane (kPa)
W Water sample M Mackintosh probe
TDTD Too dense to drive

Remarks:

For and on behalf of CET
Scott Alger - Lab

Report Format:

Approved Signatory
21-Jun-19

DE74 2UD

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Report version 1

Page 1 of 1

Borehole		1		Sheet:	1 of 1	Site:	22 Russet Glade				
				Job No:	616887						
				Date:	13/06/2019						
Boring Method:		Hand Auger		Ground Level:		Client:	Crawford Claims Management				
Diameter (mm):		75	Weather:		rain						
Depth	Soil Description					Thickness	Legend	Samples and Tests			
(m)								Depth	Type	Result	
0.00	See Trial Pit					0.80					
0.80	Stiff red grey silty sandy CLAY					2.20					
								1.00	DV	130+	
										130+	
								1.50	DV	130+	
										130+	
								2.00	DV	130+	
										130+	
								3.00	End of BH		
		130+									
Remarks: BH ends at 3.0m.BH dry and open on completion,roots observed below 2.6m					Key:	To	Max				
								Depth	Dia		
								(m)	(mm)		
								2.60	2		
Logged:					AN	SA	Checked:	Approved:	Version	V1.0 28/01/16	N.T.S.

Borehole		2			Sheet:	1 of 1	Site:	22 Russet Glade						
					Job No:	616887								
					Date:	13/06/2019								
Boring Method:		Hand Auger			Ground Level:			Client:	Crawford Claims Management					
Diameter (mm):		75		Weather:		rain								
Depth	Soil Description							Samples and Tests						
(m)								Thickness	Legend	Depth	Type	Result		
0.00	MADEGROUND medium compact brown silty sandy clay with gravel							0.70						
0.70	Stiff brown-grey silty sandy CLAY							2.30						
										1.00	DV	90		
												90		
										1.50	DV	90		
												96		
										2.00	DV	110		
												106		
										2.50	DV	100		
												100		
3.00	End of BH									3.00	DV	96		
												102		
Remarks: BH ends at 3.0m.BH dry and open on completion,no roots observed below 1.4m					Key:					To	Max			
					D - Disturbed Sample					Depth	Dia			
					B - Bulk Sample					(m)	(mm)			
					W - Water Sample Roots					1.40	Fibrous			
					J - Jar Sample Roots									
					V - Pilcon Shear Vane (kPa) Roots									
					M - Mackintosh Probe Depth to Water (m)									
					TDTD - Too Dense To Drive									
Logged:	AH	SA	Checked:	Approved:	Version	V1.0 28/01/16	N.T.S.							

Laboratory Summary Results

Our Ref : 616887
 Location : 22 Russet Glade, Reading
 Client: Crawford Claims Management
 Address: Cartwright House, Tottle Road, Riverside Business Park, NG2 1RU

Date Sampled: 13/06/2019
 Date Received : 21/06/2019
 Date Tested : 24/06/2019
 Date of Report : 01/07/2019

Sample Ref		Type	Moisture Content (%) [1]	Soil Fraction > 0.425mm (%) [2]	Liquid Limit (%) [3]	Plastic Limit (%) [4]	Plasticity Index (%) [5]	Liquidity * Index [5]	Modified * Plasticity Index (%) [6]	Soil * Class [7]	Filter Paper Contact Time (h)	Soil Sample Suction (kPa) [8]	Oedometer Strain [9]	Estimated Heave Potential (Dd) (mm)[10]	In situ * Shear Vane Strength (kPa) [11]	Organic * Content (%) [12]	pH * Value [13]	Sulphate Content * (g/l)		* Class [16]
TP/BH No	Depth (m)																	SO ₃ [14]	SO ₄ [15]	
1	U/S 0.65	D	25	<5	69	24	45	0.03	45	CH	168	995			> 130					
	1.0	D	24	<5	66	28	38	-0.11	38	CH	168	1110			> 130					
	1.5	D	23	<5							168	1360			> 130					
	2.0	D	21	<5	65	20	45	0.03	45	CH	168	1420			> 130					
	2.5	D	21	<5							168	1270			> 130					
	3.0	D	19	<5	61	17	44	0.05	44	CH	168	1440			> 130					

Test Methods / Notes

[1] BS 1377 : Part 2 : 1990, Test No 3.2
 [2] Estimated if <5%, otherwise measured
 [3] BS 1377 : Part 2 : 1990, Test No 4.4
 [4] BS 1377 : Part 2 : 1990, Test No 5.3
 [5] BS 1377 : Part 2 : 1990, Test No 5.4
 [6] BRE Digest 240 : 1993
 [7] BS 5930 : 2018 : Figure 8 - Plasticity Chart for the classification of fine soils

[8] In-house method S9a adapted from BRE IP 4/93
 [9] In-house Test Procedure S17a: One Dimensional Swell/Strain Test
 [10] Estimated Heave Potential (Dd)
 [11] Values of shear strength were determined in situ by CET using a Pilcon hand vane or Geonor vane (GV).
 [12] BS 1377 : Part 3 : 1990, Test No 4
 [13] BS 1377 : Part 2 : 1990, Test No 9
 [14] BS 1377 : Part 3 : 1990, Test No 5.6
 [15] SO₄ = 1.2 x SO₃

[16] BRE Special Digest One (Concrete in Aggressive Ground) August 2005
 Note that if the SO₄ content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4M or DS-5M class respectively unless water soluble magnesium testing is undertaken to prove otherwise.

* These tests are not UKAS accredited
 Full reports can be provided upon request.

Key

D Disturbed sample (small)
 B Disturbed sample (bulk)
 U Undisturbed sample
 W Groundwater sample
 ENP Essentially Non-Plastic by inspection
 U/S Underside of Foundation



Our Ref : 616887

Location : 22 Russet Glade, Reading

Client: Crawford Claims Management

Address: Cartwright House, Tottle Road, Riverside Business Park, NG2 1RU

Laboratory Testing Results

Date Sampled : 13/06/2019

Date Received : 21/06/2019

Date Tested : 24/06/2019

Date of Report : 01/07/2019

Sample Ref.		Type	Moisture Content (%) [1]	Soil Fraction > 0.425mm (%) [2]	Liquid Limit (%) [3]	Plastic Limit (%) [4]	Plasticity Index (%) [5]	Liquidity * Index [5]	Modified * Plasticity Index (%) [6]	Soil * Class [7]	Filter Paper Contact Time (h)	Soil Sample Suction (kPa) [8]	Oedometer Strain [9]	Estimated Heave Potential (Dd) (mm)[10]	In situ * Shear Vane Strength (kPa) [11]	Organic * Content (%) [12]	pH * Value [13]	Sulphate Content * (g / l)		* Class [16]
TP/BH No.	Depth (m)																	SO3 [14]	SO4 [15]	
BH2	1.0	D	28	<5	60	25	35	0.09	35	CH					90					
	1.5	D	29	<5											93					
	2.0	D	25	<5	53	23	30	0.07	30	CH					103					
	2.5	D	29	<5											100					
	3.0	D	30	<5	59	26	33	0.12	33	CH					99					

Test Methods / Notes

[1] BS 1377 : Part 2 : 1990, Test No 3.2

[2] Estimated if <5%, otherwise measured

[3] BS 1377 : Part 2 : 1990, Test No 4.4

[4] BS 1377 : Part 2 : 1990, Test No 5.3

[5] BS 1377 : Part 2 : 1990, Test No 5.4

[6] BRE Digest 240 : 1993

[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils

[8] In-house method S9a adapted from BRE TP 493

[9] In-house Test Procedure S17a: One Dimensional Swell/Strain Test

[10] Estimated Heave Potential (Dd)

[11] Values of shear strength were determined in situ by CET using a Pilcon hand vane or Geonor vane (GV).

[12] BS 1377 : Part 3 : 1990, Test No 4

[13] BS 1377 : Part 2 : 1990, Test No 9

[14] BS 1377 : Part 3 : 1990, Test No 5.6

[15] SO₄ = 1.2 x SO₃

[16] BRE Special Digest One (Concrete in Aggressive Ground) August 2005

Note that if the SO₄ content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4M or DS-5M class respectively unless water soluble magnesium testing is undertaken to prove otherwise.

* These tests are not UKAS accredited

Full reports can be provided upon request

Key

D Disturbed sample (small)
B Disturbed sample (bulk)
U Undisturbed sample
W Groundwater sample
ENP Essentially Non-Plastic by inspection
U/S Underside of Foundation

Version: 5BH V1.5 - 26.06.18

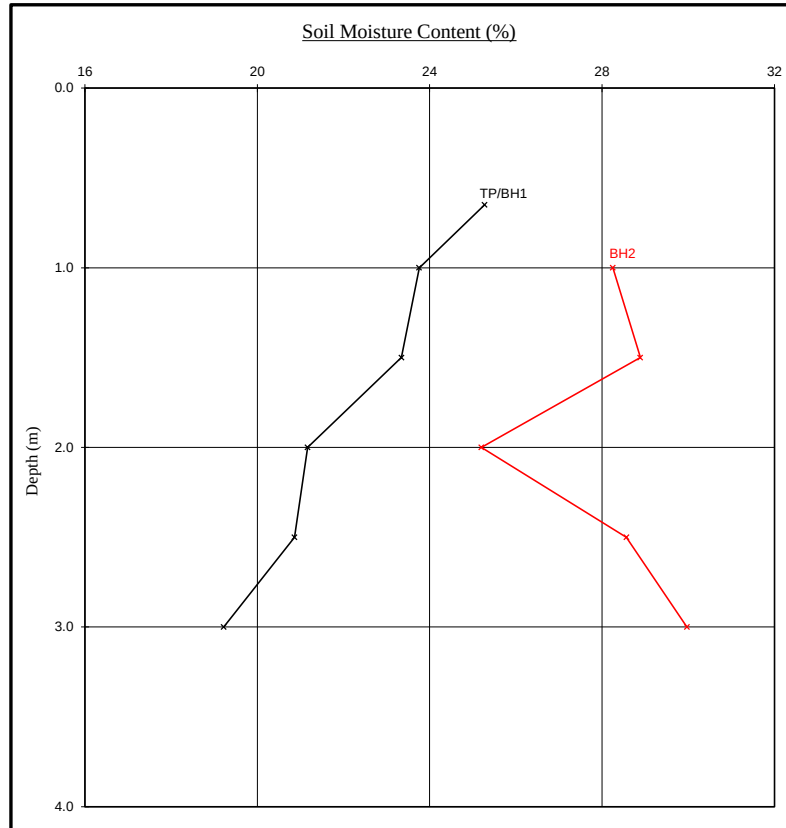
CET Structures Ltd – CET Property Assurance Division - Lawness Barns, Mountnessing Road, Billericay, Essex CM12 0TS



8618

Moisture Content Profiles

Our Ref : 616887
 Location : 22 Russet Glade, Reading
 Work carried out for: Crawford Claims Management

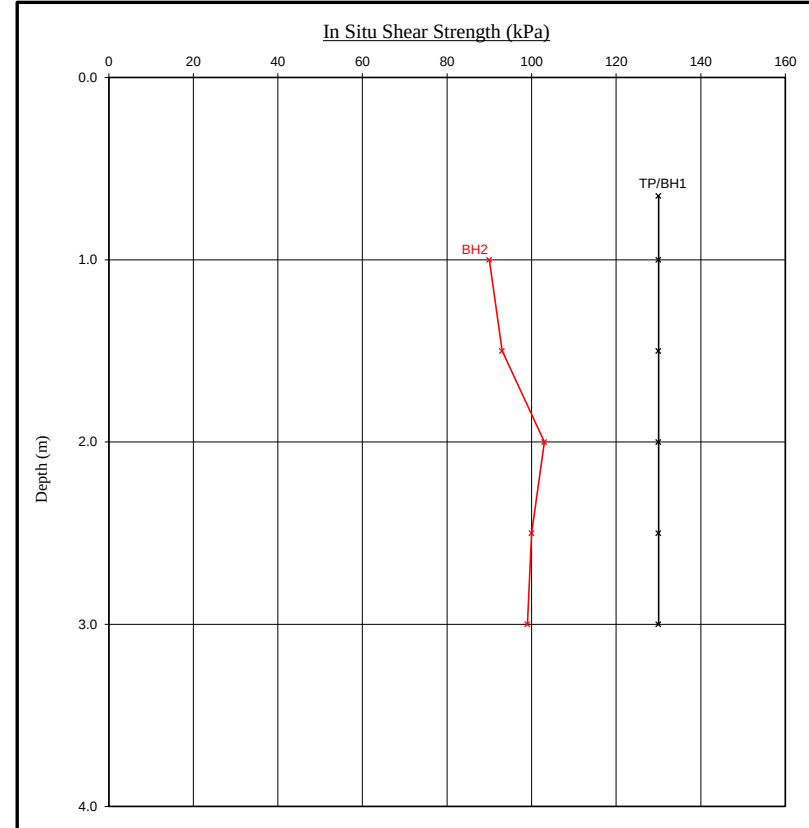


Notes

1. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly overconsolidated clay) at shallow depths.
2. Unless specifically noted the profiles have not been related to a site datum.

Shear Strength Profiles

Date Sampled : 13/06/2019
 Date Received : 21/06/2019
 Date Tested : 24/06/2019
 Date of Report : 01/07/2019

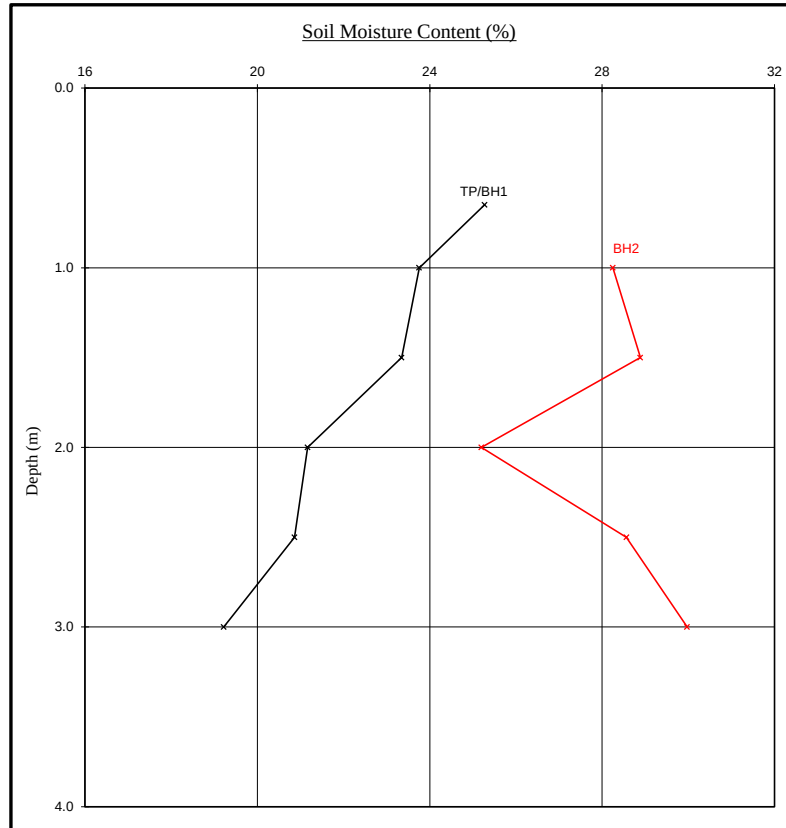


Note

1. Unless otherwise stated, values of Shear Strength were determined in situ by CET using a Pilcon Hand Vane the calibration of which is limited to a maximum reading of 130 kPa.
2. Unless specifically noted the profiles have not been related to a site datum.

Moisture Content Profiles

Our Ref : 616887
 Location : 22 Russet Glade, Reading
 Work carried out for: Crawford Claims Management

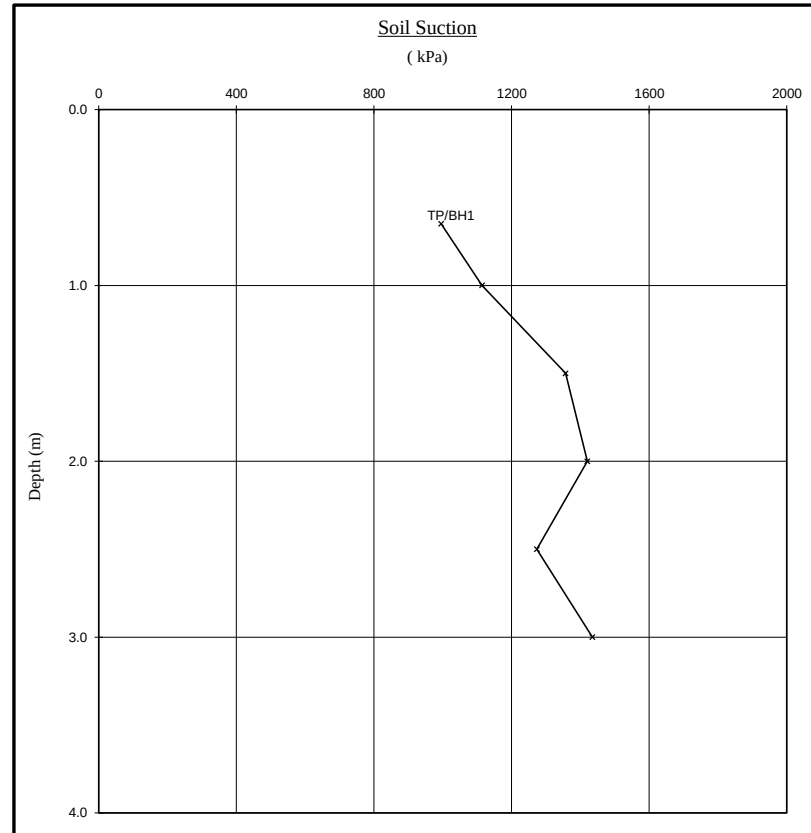


Notes

1. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly overconsolidated clay) at shallow depths.
2. Unless specifically noted the profiles have not been related to a site datum.

Soil Suction Profiles

Date Sampled : 13/06/2019
 Date Received : 21/06/2019
 Date Tested : 24/06/2019
 Date of Report : 01/07/2019



Note

When shown, the theoretical equilibrium suction profiles are based on conventional assumptions associated with London Clay (and similarly overconsolidated clays) at shallow depths. Note that the sample disturbance component is dependant on the method of sampling and any subsequent recompaction. The above plots show this to be 100kPa which is the value suggested by the BRE on the basis of their limited number of tests on recompacted samples. This may or may not be appropriate in this instance and judgement should be exercised.

EPSL European Plant Science Laboratory	Sheet: 1 of 1	Site: 22 Russett Glade,
	Job No: 616887	Work carried
	Date: 10/07/2019	out for: Crawford Claims MGMT SUS
	Order No: 1396044	
EPSL Ref: R31713		

Certificate of Analysis

The following work was commissioned by CET on behalf of their client. Root samples were obtained in sealed packets from the above site with no reference given as to the types of tree or shrub from which they may have originated.

The results were as follows -

<u>Trial pit/ Borehole number</u>	<u>Root diameter (mm)</u>	<u>Tree, shrub or climber from which root originates</u>	<u>Result of starch test</u>
TP1 (USF)	1.5 mm	Quercus spp. 2 roots	Positive
BH1 (to 2.6m)	1.5 mm	Quercus spp. 3 roots	Positive

Quercus spp. are oaks (both deciduous and evergreen).



MDM

Address for correspondence: EPSL, Intec, Parc Menai, Bangor, Gwynedd, North Wales, LL57 4FG

Telephone: 01248 672 652

e-mail: lab@innovation-environmental.co.uk

Head of Laboratory Services : M D Mitchell B.Sc. (Hons), M.Phil.

Plant Anatomist : Dr G S Turner B.Sc. (Hons), M.Sc., Ph.D

Plant Anatomist : Dr R J Shaw B.Sc. (Hons), Ph.D

Consultant: Dr M P Denne B.Sc. (Hons), M.Sc., Ph.D

Registered in England. No 3256771, Registered Office: Yarmouth House, 1300 Parkway, Solent Business Park, Hampshire, PO15 7AE

To:
Ftao: Howard Nash
Site:

Crawford Claims Management

22 Russet Glade

Client Ref: SU1901097
Job No: 616887
Claim No:
Date: 17-Jun-19

ESTIMATE

Item	Amount
1.0 Location Shared System Condition Grade Drain Serviceability Work Spec	Mh 1 upstream to Wg 1 - Run 1 No B Unserviceable From Mh 1 Hpwj to clear and line upstream to Wg 1 with super flex liner. £997.78

Notes

Repairs to shared runs and off boundary pipe-work may be the responsibility of the water authority.

Total £997.78

Condition Grade

A - Structurally sound with no leakage evident.
B - Cracks and fractures observed.
C - Structurally unsound

plus VAT @20% £199.56

Total + VAT £1,197.34

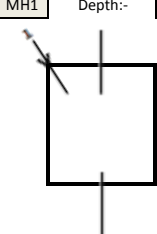
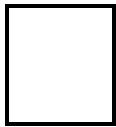
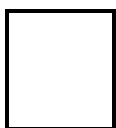
Quotation is binding only if accepted within 28 days from date of issue and is subject to our Standard Terms and Conditions
The price qualification notes, stated on the drainage solutions schedule of rates, apply to this quotation.
CET Structures Ltd undertakes to return to site free of charge to carry out remedial work to the drainage repairs set out above for a period of 2 months from the date of this invoice. The company standard charge rates will apply to the visit should the work requested be unrelated to the said repairs.

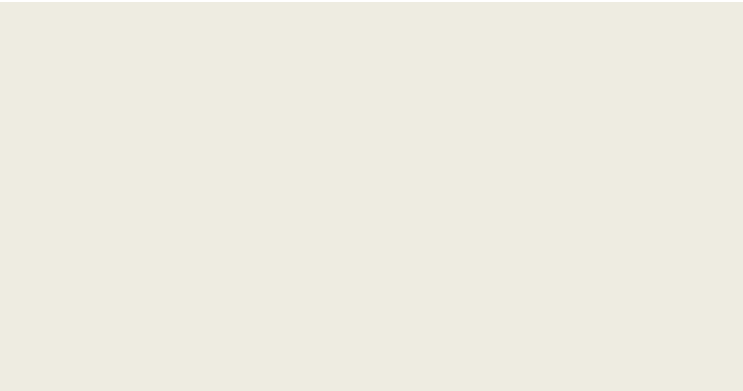
ESTIMATING & COSTING SHEET - DOMESTIC DRAINAGE		Client Ref	SU1901097		
Site:-	22 Russet Glade	Job No.	616887		
Client :-	Crawford Claims Management	Claim No			
		Date			
		Recommendation	1		
	Description				
Rate Code	Mh 1 upstream to Wg 1 - Run 1	Unit	Qty	Rate	Amount
TITLE	Drain Lining				
SN1133	Van pack HPWJ & CCTV in preparation of lining	nr	1	£133.05	£133.05
SN1135	Drain Lining - Initial Set-Up Fee (0-3.0m)	nr	1	£302.73	£302.73
	Drain Lining - 100mm. Install Super Flex Liner Into Existing 100mm underground drain. 2-4.5mm thickness.	m	6	£90.00	£540.00
	Epoxy resin	nr	1	£22.00	£22.00
Total subject to VAT @ 20%					£997.78
Note: Subject to the attached Terms and Conditions Depths are taken to the base of excavations. Every effort will be made to match existing surfaces where disturbed although this cannot be guaranteed. All rates exclude VAT. Depths are taken to the base of excavations. The above rates are subject to re-measurement. Daywork rates do not include for materials that are charged at cost plus KEY: ne = not exceeding, eo = extra over rate, m = linear metre, nr = number, hr = hour					

Coding Sheet				Sheet:		Site:	22 Russet Glade		
				Job No.:	616887				
				Date:	#####	Client:	Crawford Claims Management		

Run:	1								
From:	MH1	Invert Level:	1100	Direction:	U/S				
To:	Wg 1	Invert Level:		Function:	F/W				
Pipe Material:	VC	Pipe Dia:	100						
Water/Pressure Test:		Drain Break-In:	No	Gully Condition:	As Built				
Distance (m)	Code	Clock Ref at to	Dia mm	Intrusion % mm	Shared Run:	No			
					If Shared How:				
0.00	ST				Remarks	Surface Material	Length (m)		
0.30	OJM				Open joint medium	crazy paving	2		
1.40	LR				Line deviates right	under x2			
1.80	JDM				Joint displaced medium				
5.20	CC	12	12		Crack circumferential				
7.70	JDM				Joint displaced medium				
8.20	LR				Line deviates right				
8.40	OJM				Open joint medium				
9.10	FH				at wg 1				
Comments:									

Manhole Details	Sheet:	1 of 1	Site:	22 Russet Glade
	Job No.:	616887		
	Date:	13/06/19	Client:	Crawford Claims Management

MH:-	MH1	Depth:-	1100	(mm)	Depths of run if different to invert level:-	Manhole Condition:-	Good															
					<table><thead><tr><th>Run</th><th>Depth (mm)</th></tr></thead><tbody><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table>	Run	Depth (mm)															Reasons for poor condition.
Run	Depth (mm)																					
Chamber Dimension:-	600	/	450	(mm)																		
MH:-		Depth:-		(mm)	Depths of run if different to invert level:-	Manhole Condition:-																
					<table><thead><tr><th>Run</th><th>Depth (mm)</th></tr></thead><tbody><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table>	Run	Depth (mm)															Reasons for poor condition.
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Chamber Dimension:-		/		(mm)																		
MH:-		Depth:-		(mm)	Depths of run if different to invert level:-	Manhole Condition:-																
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Run	Depth (mm)																					
Chamber Dimension:-		/		(mm)																		

<u>Key</u>  Interceptor  Internal Back Drop.  External Back Drop.	<u>Additional Comments for Poor Condition</u> 
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