



Ground Investigation Factual Report



GEOCORE CONTROL SHEET

Claim Number:

Client: Medow Consultants Ltd

Client Ref: 9440113P

Policy Holder:

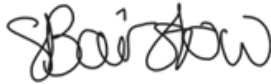


Site Address: 17-20 Meadway Gardens, Ruislip, Middlesex, HA4 7QP

Project No.: HH/24/70996

Issue Date: July 2024

Office: Geocore Site Investigations Ltd, (Part of RSK Environment Limited), Tralee Close, Kirkleatham Business Park, Redcar, TS10 5SG

Version: FAC-01

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VERSION CONTROL SHEET

Reference	Date	Status	Amended by	Approved by
FAC-01	31/07/2024	Final	n/a	n/a

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1 INTRODUCTION

1.1 Commissioning

Geocore Site Investigations Ltd (Geocore) was instructed by Meadow Consultants Ltd to undertake the intrusive ground investigation and a CCTV survey of the drainage. Geocore was commissioned to provide the following for the project:

- Factual report
- Site Plan highlighting exploratory hole locations and location of the drainage
- Exploratory bore hole logs and diagrams
- Laboratory Testing Results including root analysis and a heave analysis
- Drainage recommendations if any repairs deemed appropriate

1.2 Scope of works

The scope instructed by Meadow Consultants Ltd included:

- 2 trial pits and 2 boreholes
- A CCTV survey of the drainage
- Insitu testing
- Root analysis

1.3 Limitations

This report presents a description of the site at the time of the investigation, results of the investigation, in-situ testing undertaken, strata encountered and geotechnical test results

There may be other conditions prevailing at the site which have not been disclosed by this investigation and which have not been considered by this report. Responsibility cannot be accepted for conditions at the site not revealed by the investigation and confirmation of intermediate ground conditions between exploratory holes should be considered if deemed necessary.

Unless instructed by the Client, Geocore is not obliged to and disclaims any obligation to update the report for events taking place after the date on which this investigation was undertaken.

2 SITE DETAILS

2.1 Site location

A site plan of the area is presented in **Figure 1**

Table 1 - Site Location

Site name	17-20 Meadway Gardens, Ruislip,
Full site address and postcode	Middlesex, HA4 7QP
Site Team	P. Chapman / C. Hall
Site Date	17/06/2024

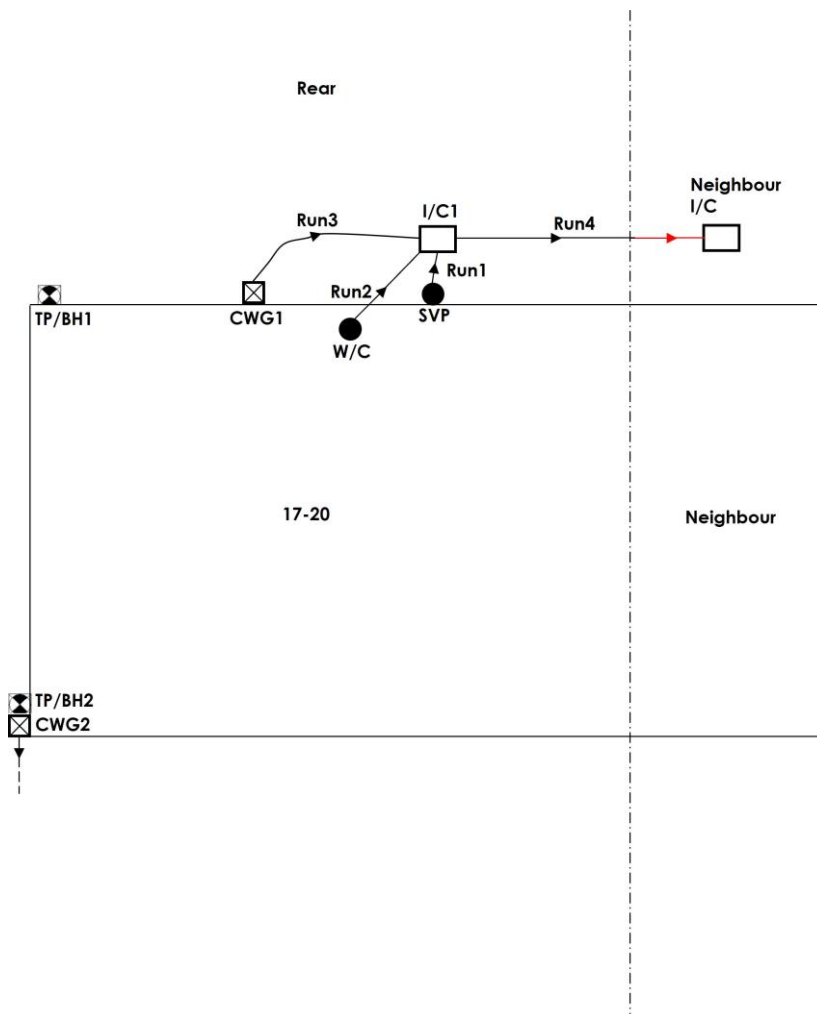
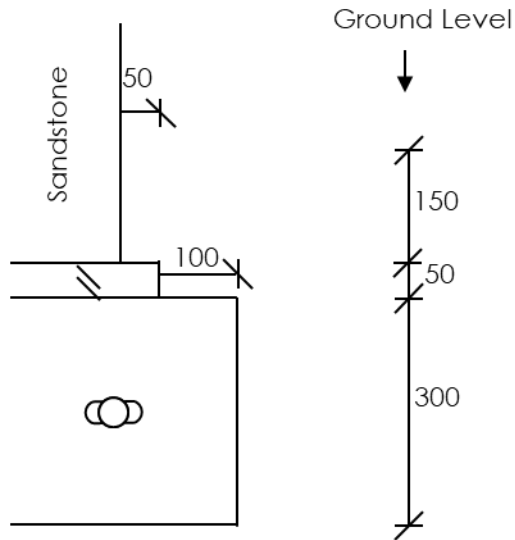


Figure 1: Site plan

Appendix A

TP/BH1 Foundation Detail





For strata information, please refer to borehole log TPBH1.

Appendix A

Borehole Record

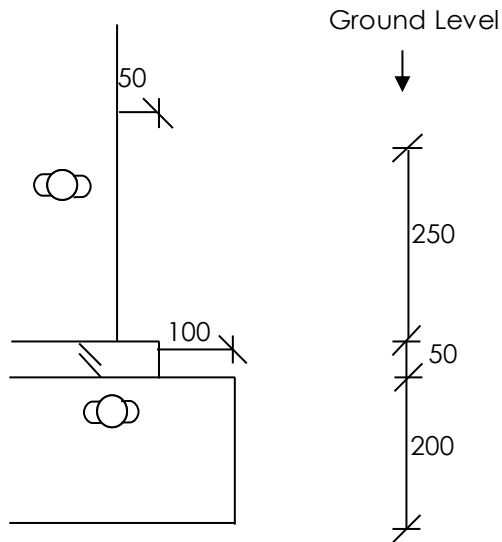
Borehole Number 1

 BOREHOLE LOG  Geocore										
Location 17-20 Meadway Gardens, Ruislip, Middlesex, HA4 7QP								BOREHOLE No TP/BH1		
Job No HH/24/70996		Date 17-06-24		Ground Level (m)		Co-Ordinates (I)		Sheet 1 of 1		
Client Meadow										
SAMPLES & TESTS			STRATA							
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION			
0.50-2.40	ROOTS					(0.20) 0.20	MADE GROUND Grass/topsoil.			
0.60	HV B1	64kpa@0.6m				(0.30) 0.50	MADE GROUND Dark brown slightly sandy very gravelly clay. Gravel is fine to coarse sub angular brick, concrete, flint, sandstone, coal.			
1.60	HV B2	78kpa@1.6m				(1.90)	BASE OF FOUNDATION AT 0.5m. Firm becoming stiff with depth light brown slightly sandy slightly gravelly CLAY, with some cobbles. Gravel is fine to coarse sub angular coal, sandstone and fine to coarse sub rounded flint. Cobbles are of flint with many roots.			
2.40	HV B3	102kpa@2.4m				2.40 2.45	Possible flint cobbles.			
Boring Progress and Water Observations			Chiselling			Water Added		GENERAL REMARKS		
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To
All dimensions in metres Scale 1:21.5625			Client Engineer Ben John			Method/ Plant Used HH Window Sampler		Logged By P. Chapman		

GEOCORE BH 70996 GPJ AUGUST 788 GPJ 28/06/24

Appendix A

TP/BH2 Foundation Detail




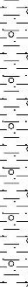



For strata information, please refer to borehole log TPBH2.

Appendix A

Borehole Record

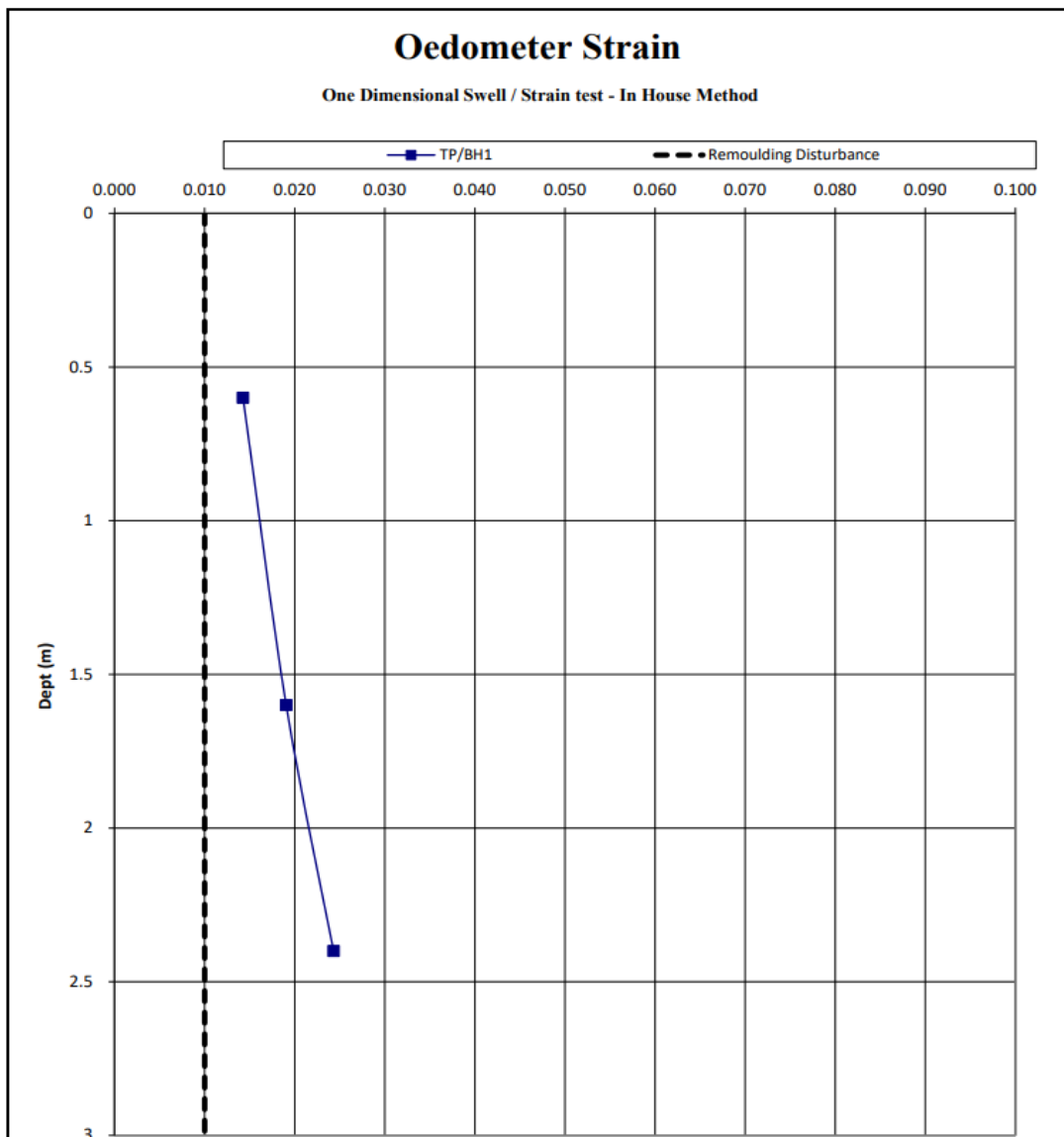
Borehole Number 2

 BOREHOLE LOG Geocore												
Location 17-20 Meadway Gardens, Ruislip, Middlesex, HA4 7QP									BOREHOLE No TP/BH2			
Job No HH/24/70996			Date 17-06-24		Ground Level (m)		Co-Ordinates (l)			Sheet 1 of 1		
Client Meadow												
SAMPLES & TESTS				STRATA								
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION					Instrument/ Backfill
						(0.20) 0.20	MADE GROUND Concrete.					
						(0.30) 0.50	MADE GROUND Dark brown slightly sandy slightly gravelly clay. Gravel is fine to coarse sub angular concrete, brick, flint.					
0.60 0.60	HV B1	76kpa@0.6m				(1.00)	BASE OF FOUNDATION AT 0.5m. Firm becoming stiff with depth light brown slightly sandy very gravelly CLAY. Gravel is fine to coarse sub angular sandstone coal and medium to fine sub rounded flint.					
1.50 1.50	HV B2	98kpa@1.5m				1.50 1.55	Flint cobbles.					
Boring Progress and Water Observations				Chiselling			Water Added		GENERAL REMARKS			
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours				From
											Borehole terminated at 1.55 due to flint cobbles. Excavation remained open and dry on completion.	
All dimensions in metres Scale 1:15.9375			Client Engineer Ben John			Method/ Plant Used		HH Window Sampler		Logged By P. Chapman		

Appendix B

Laboratory Testing Results

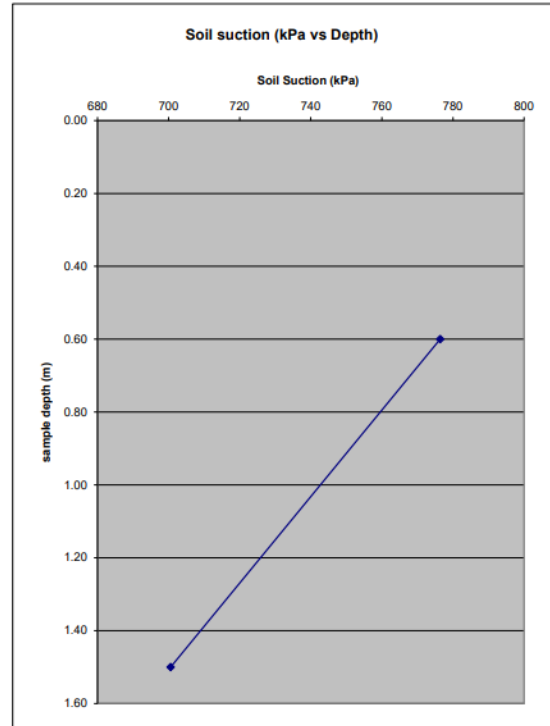
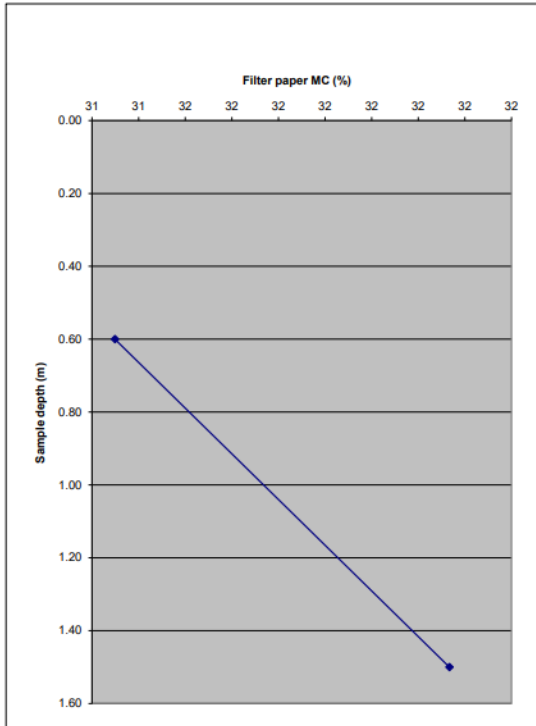
Summary of results							
One Dimensional Swell / Strain test - In House Method							
Hole Number	Sample Number	Sample Type	Depth m	Strain	Dd (mm)	Moisture Content (%)	Remarks
TP/BH1	1		0.60	0.0143	4.3	30	
TP/BH1	2		1.60	0.0191	9.5	27	
TP/BH1	3		2.40	0.0243	9.7	28	



Appendix B

Laboratory Testing Results

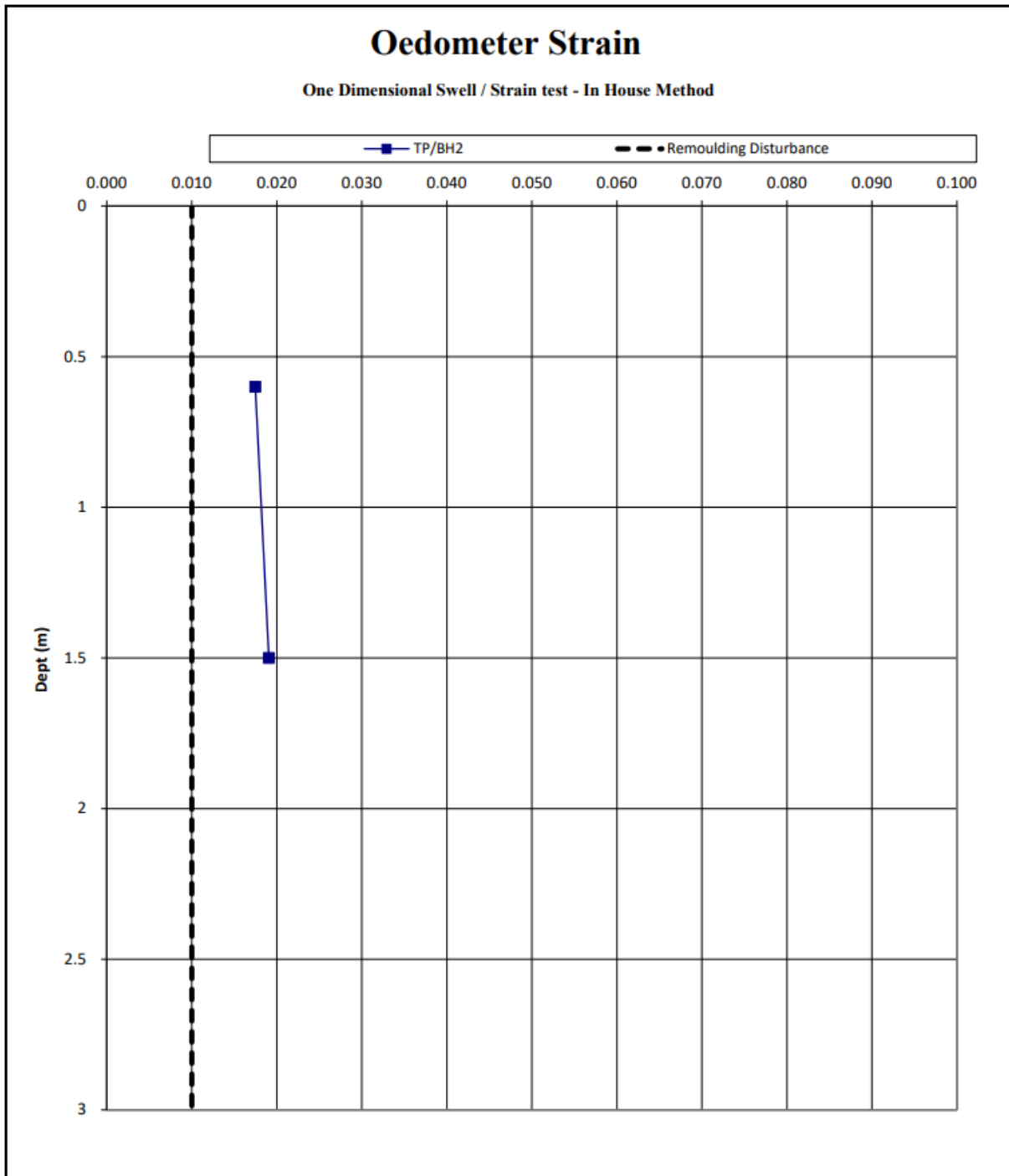
Soil Suction Test - Graphical data
BRE Information Paper IP 4/93 February 1993 (CI/SfB p1)



<p style="text-align: center;">Summary of results</p> <p style="text-align: center;">One Dimensional Swell / Strain test - In House Method</p>							
Hole Number	Sample Number	Sample Type	Depth m	Strain	Dd (mm)	Moisture Content (%)	Remarks
TP/BH2	1		0.60	0.0175	5.2	28	
TP/BH2	2		1.50	0.0191	8.6	29	

Appendix B

Laboratory Testing Results



Appendix C

Root Analysis

ROOT IDENTIFICATION

17-20 Meadway Gardens,

Client Reference: 70996
 Report Date: 26 June 2024
 Our Ref: R58111

Sub Sample	Species Identified		Root Diameter	Starch
TP/BH1:				
USF to 2.4m	<i>Quercus</i> spp.	1	5 mm	Abundant
USF to 2.4m	too decayed for identification	2	20 mm	Absent

Comments:

- 1 - Plus 4 others also identified as *Quercus* spp.
- 2 - Fragment of bark only.

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

Appendix D

CCTV Survey Notes

The property is served by a combined foul and surface water system. The operatives on site undertook a CCTV survey of all the drainage on the rear of the property.

Run 1: I/C 1 upstream to the SVP.

The drain is made of V/C. Defects were identified within the drain run. Please refer to photo 1 within the report.

Run 2: I/C 1 upstream to the W/C.

The drain is made of V/C. Defects were identified within the drain run. Please refer to photos 2 and 3 within the report.

Run 3: I/C 1 upstream to the CWG 1.

The drain is made of V/C. Defects were identified within the drain run which include root infiltration. Please refer to photos 4 and 5 within the report.

Run 4: I/C 1 downstream to I/C 2 located on the neighbours.

The drain is made of V/C. Defects were identified throughout the length of the drain run. The last metre of the drain run should be deemed a local water authority asset as this section of the drain run is beyond the boundary and within the rear garden of the neighbour. Please refer to photos 6 to 9 within the report.

Run 5: CWG 2 downstream.

The operatives tried to thread the gully camera around the outlet of the gully but were unable to keep a picture as of the debris and silt within the drain run. There is no indication that the gully has been leaking.

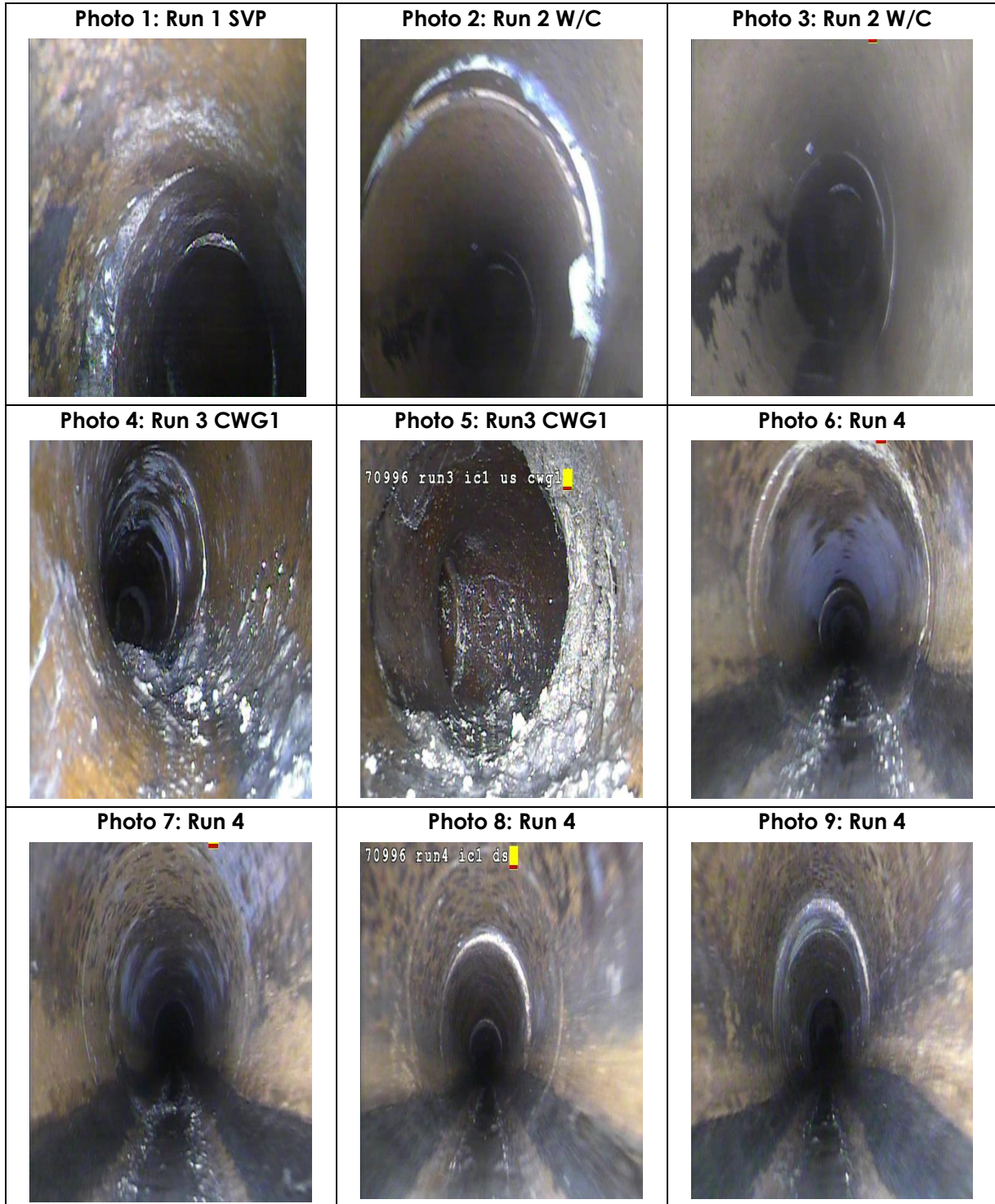
Appendix E

CCTV Survey Grading Sheet

CCTV SURVEY DETAILS							
Run: 1	Dir: U/S	Pipe Dia(mm):	100	System:	F/W	Made Of:	V/C
From:	I/C 1	Inv(m):	0.5	To:	SVP	Inv(m):	0.3
Metres	Faults/Defects				Internal Condition Grading	Remarks	
0	ST:						
0	WL: 0%						
0.1	JDM:				Grade 2	Photo 1	
0.3	LU: 90°					Rest Bend	
0.3	FH:						
Run: 2	Dir: U/S	Pipe Dia(mm):	100	System:	F/W	Made Of:	V/C
From:	I/C 1	Inv(m):	0.5	To:	W/C	Inv(m):	Internal
Metres	Faults/Defects				Internal Condition Grading	Remarks	
0	ST:						
0	WL: 0%						
0	LL: Slow 15° Bend						
0.48	FC: 11 o'clock to 5 o'clock				Grade 3	Photo 2	
0.75	FC: 11 o'clock to 5 o'clock				Grade 3	Photo 3	
1.18	LU: 90°					Rest Bend	
1.5	FH:					Top of the Rest Bend	
Run: 3	Dir: U/S	Pipe Dia(mm):	100	System:	C/W	Made Of:	V/C
From:	I/C 1	Inv(m):	0.5	To:	CWG 1	Inv(m):	0.3
Metres	Faults/Defects				Internal Condition Grading	Remarks	
0	ST:						
0	WL: 0%						
0.2	FC: 12 o'clock to 4 o'clock				Grade 3	Photo 4	
0.9	RM: 20%					Photo 5	
1.1	LL: 45°						
1.4	FH:					CWG 1	
Run: 4	Dir: D/S	Pipe Dia(mm):	100	System:	C/W	Made Of:	V/C
From:	I/C 1	Inv(m):	0.5	To:	I/C 2	Inv(m):	Neighbour's land. Unable to confirm invert depth
Metres	Faults/Defects				Internal Condition Grading	Remarks	
0	ST:						
0	WL: 0%						
1.35	CC: 9 o'clock to 4 o'clock				Grade 2	Photo 6	
2.87	CC: 7 o'clock to 4 o'clock				Grade 2	Photo 7	
4.65	CC: 7 o'clock to 4 o'clock				Grade 2	Photo 8	
5.5	CC: 7 o'clock to 2 o'clock				Grade 2	Photo 9	
6.22	FH:					I/C 2 Neighbour	

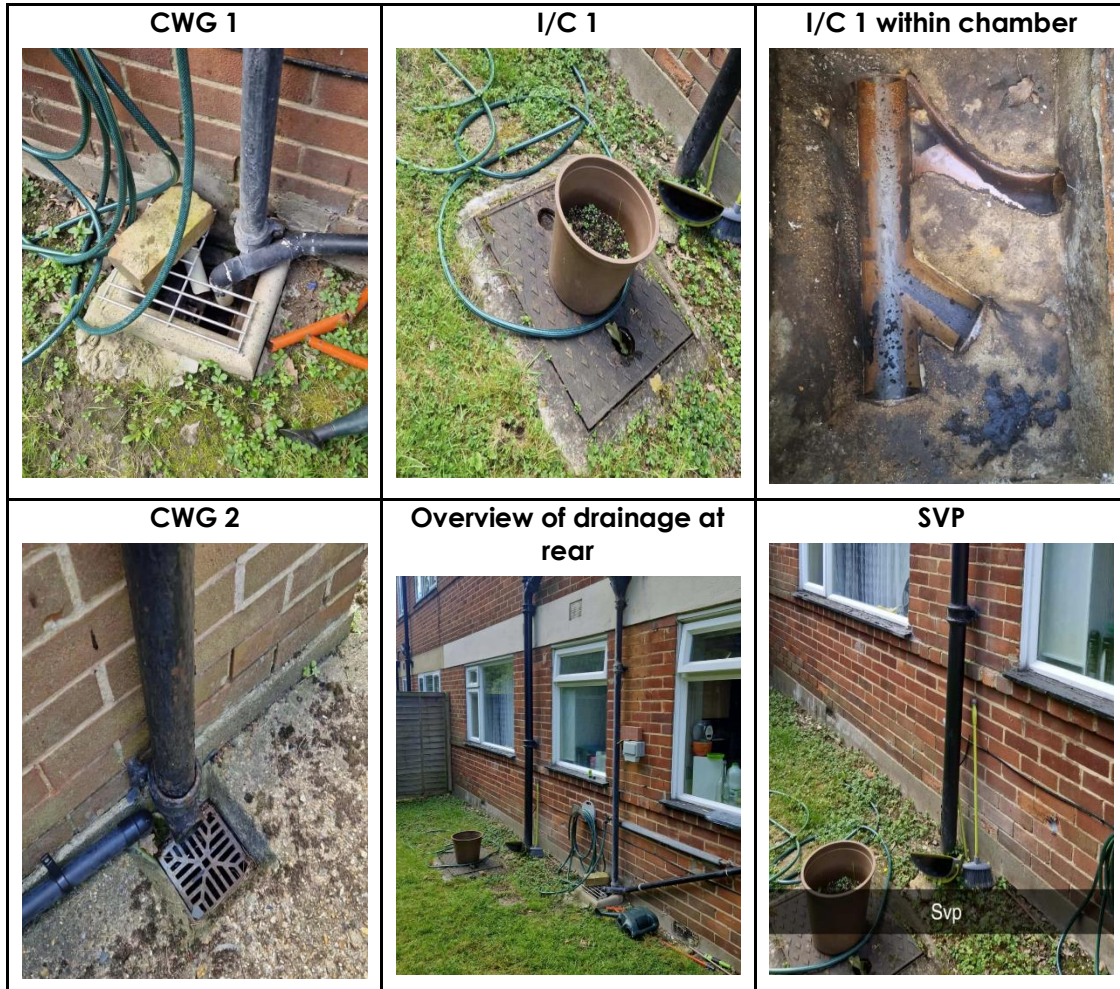
Appendix G

Photograph



Appendix G

Photograph



Appendix H

Recommendations

The following recommendations have been made, based on the information provided by the CCTV survey. Geocore are unable to confirm if the defects identified from the investigation are the cause of the potential subsidence. Any decision made is the responsibility of the client.

Item 1: I/C 1 upstream to the SVP.

Install a patch repair using the small pencil packer to seal the defects within the drain run.

Item 2: I/C 1 upstream to the W/C.

Install a patch repair to seal the defects within the drain run.

Item 3: I/C 1 u/s to the CWG 1.

Undertake root cutting using the mechanical cutting machine.

Install a patch repair to seal the defects within the drain run.

Item 4: I/C 1 downstream towards I/C 2 (located on neighbours).

High-pressure water clean the drain run in preparation of lining.

Install a flexi lining for 6 metres to seal the defects with in the drain run.

Item 5: CWG 2:

Excavate and replace the gully and up to 1 metre of pipe.

Undertake high-pressure water clean and CCTV survey of the drain run.

Report findings to the client from site with a view to undertake repairs whilst on site subject to CCTV findings and authorisation.

Appendix I

Caveats

1): Where any excavation and reinstatement of the surface is required, The site technicians will always attempt to match the previous surface patterns and colouring, however, this cannot always be achieved due to the age of the existing ground materials. This would refer to concrete, tarmac, grass and flagstones. The weather can also be a contributing factor both during the excavation and the time of the reinstatement. Geocore cannot guarantee an exact match.

Geocore do not provide reinstatement for patterned concrete or resin drives as this requires a specialist contractor and should be agreed with both the policy holder for insurance work and the client prior to commencement of drain repairs or the CCTV investigation.

Appendix J

Key Codes

Site Plan Key

- Red – Shared or Main Sewer Blue – Surface Water Black – Foul Water or Combined
- RWG / SWG / YG - Rain Water Gully / Surface Water Gully / Yard Gully
- ⊗ FWG / CWG – Foul Water Gully / Combined Water Gully
- ▷ R/E - Rodding Eye → Surveved Drain Run → Unsurveved Drain Run
- Z Interceptor ● SVP, VP, FWP, WC – Soil Vent Pipe, Vent Pipe, Foul Water Pipe
- RWP – Rain Water Pipe ⊠ TP - Trial Pit ⊠ TPBH – Trial Pit Bore Hole
- Boundary Line

Drainage Key (1)

Condition Grades for Clayware, Concrete and Plastic Sewer Pipes	
5	Already collapsed Deformation >10% and broken Extensive areas of fabric missing Fracture with deformation >10%
4	Broken Deformation >10% and broken Fracture with deformation 6-10% Multiple fracture Serious loss of level Serious joint defects with voids or soil visible (open joint with >50mm soil of void visible or joint displacement >25% diameter) Surface damage- spalling large (entire surface of brick missing) Surface damage- wear large (entire surface of brick missing)
3	Fracture with no deformation or deformation <5% Longitudinal cracking with or multiple cracking Minor loss of level Severe joint defects, i.e. open joint (large) or displaced joint (large) Surface damage- spalling medium (large areas of chipped brick)
2	Circumferential crack Moderate joint defects, i.e. open joint (medium) or displace joint (medium) Surface damage- spalling slight (small fragments breaking away)
1	No or slight structural defects
Note: Deformed sewers that have subsequently been relined with structural lining can normally be considered to have no deformation.	

Drainage Key (2)

Code	Description
B	Broken pipe at/from __ to __ o'clock
CC	Crack circumferential from __ to __ o'clock
CL	Crack longitudinal at __ o'clock
CM	Cracks multiple from __ to __ o'clock
CN	Connection at __ o'clock, diameter is __ mm
CNI	Connection as __ o'clock, diameter is __ mm, intrusion at __ mm
CU	Camera underwater
CX	Connection defective at __ o'clock
D	Deformed sewer __%
DC	Dimension of sewer changes at this point
DE	Debris (non-silt/grease) __% cross-sectional loss
DEG	Debris grease __% cross sectional area loss
DES	Debris silt __% cross-sectional area loss
FC	Fracture circumferential from __ to __ o'clock
FL	Fracture longitudinal at __ o'clock
FM	Fractures longitudinal at __ o'clock
GO	General observations at this point
H	Hole in sewer at __ o'clock
JDM	Joint displaced medium
JDL	Joint displaced large
JN	Junction at __ o'clock, diameter __ mm
JX	Junction defective as __ o'clock, diameter __ mm
LC	Lining of sewer changes/starts/finishes at this point
LD	Line of sewer deviates down
LL	Line of sewer deviates left
LR	Line of sewer deviates right
LU	Line of sewers deviates up
MC	Material of sewer changes at this point
MH	Manhole/node
OB	Obstruction __% height/diameter loss
OJL	Open joint large
OJM	Open joint medium
RFJ	Roots fine (at joint)
RMJ	Roots mass __% cross-sectional area loss (at joint)
RTJ	Roots tap (at joint)
SA	Survey abandoned
WL	Water level % height/diameter
X	Sewer collapsed __% cross sectional area loss
FH	End of survey