

DRAINAGE STATEMENT

Ote Hall Farm
Jane's Lane
Burgess Hill RH15 0SR

Client

Ote Hall Farm
Jane's Lane
Burgess Hill
RH15 0SR

Ref: 2021-103
Issue: 2
Date: 27 November 2024

Contents

Instruction	2
Limitations	2
Site Conditions	2
Proposed Site Drainage	3
Appendix 1 - Photographs	5
Appendix 2 – Ground Investigation Report	8
Appendix 3 – CCTV Drainage Survey Report	9
Appendix 4 – Plans and Details	10
Appendix 5 – Drainage Calculations	11

Instruction

Owens Consulting Engineers Ltd were instructed by the client, Ote Hall Farm, to produce a detailed foul and surface water drainage design to aid in discharge of Planning Condition No.4 of Mid Sussex District Council Planning Approval reference DM/21/3607. Planning Condition No.4 reads as follows:

“The development hereby permitted shall not commence unless and until details of the proposed foul and surface water drainage and means of disposal have been submitted to and approved in writing by the local planning authority. The building shall not be occupied until all the approved drainage works have been carried out in accordance with the agreed details.

Reason: To ensure that the proposal is satisfactorily drained and to accord with the NPPF requirements Policy DP41 of the District Plan (2014 - 2031).”

A Site Drainage plan and Details to satisfy this Condition are in Appendix 4. This report accompanies the Site Drainage plan by providing a textual description of the design and site conditions. Calculations supporting the design are in Appendix 5.

Limitations

This report is intended for our client’s private and confidential use and for their professional and legal advisors. It should not be reproduced in whole or in part or relied upon by third parties for any use whatsoever, without our express written authority.

Site Conditions

The site’s bedrock geology is Weald Clay according to a Ground Investigation report by AVZ GeoEng Ltd – refer to Appendix 2.

As part of the same Ground Investigation, soakage tests were undertaken during November 2021. The water in the 2No test pits failed to drain below the 75% level over the duration. Due to the low permeability of the soils as revealed by the soakage tests, infiltration is considered unsuitable for this site.

As site visit was undertaken by GTA Civils & Transport Ltd on the 10th January 2022 to establish the condition of the existing receiving ditch and its connection to the wider ditch network. Photos from the site visit are in Appendix 1. These show that the receiving ditch running along the site's east boundary is regular, well defined and in good condition. A culvert, estimated to be 150mm diameter, connects the north end of the receiving ditch to another ditch on the opposite side of the road. This ditch drains north and is present on the EA's online river mapping, which shows it flowing north and then northwest to connect to World's End Stream (a Main River) at a distance of approximately 750m northeast of the site. World's End Stream is a tributary of the River Adur.

Proposed Site Drainage

The SuDS hierarchy was applied. As set out in the previous section, soakage testing has shown that the geology is of low permeability; therefore, infiltration has been discounted.

The site's surface water will be routed to a new outfall headwall. The Site Drainage drawing and Drainage Details are shown in Appendix 4. These show a combination of attenuation pond and cellular underground tank. Surface water from the site is to be routed into the pond, where it will benefit from UV treatment. An offline underground attenuation tank shall be placed under the car parking area.

The car park is mainly to drain via its parking bays which are to be surfaced in Geotech Grass Rubber Matting, which is a porous surface. The construction of the car park is to be lined and surface water will discharge to the piped system via distribution blocks located in the sub-base layer. The sub-base layer itself will be in porous aggregate material comprising 4-20mm clean angular hard stone with no fines (30% voids). Refer to Appendix 4 for External Works Plans and Details.

The attenuation tank and pond have a combined volume of 307.29m^3 ($257.69 + 49.6$) and are sized to store the volume of storm water from the critical '1 in 100 year plus 45% climate change' storm event - thereby complying with the NPPF. The drainage calculation sheets in Appendix 4 show that that volume generated in the critical 1 in 100 years + 45% climate change event is 299.57 m^3 , and therefore the system will not flood.

The offsite flow rate will be limited to Q_{bar} , namely 1.9 l/s. This is the greenfield runoff rate for the development's contributing area (proposed impermeable catchment comprising roofs, hardstandings and lined pond) as described in the Flood Risk Assessment Report at Planning stage.

A new outfall headwall will be formed on the ditch watercourse for surface water discharge. This will require Ordinary Watercourse Consent from the LLFA.

Foul drainage is to discharge by gravity to an existing 150mm foul drain present within the field on the opposite side of the road to the site. This foul drain connects to an existing private pump station which serves the Ote Hall Business Park. From the pump station, foul water is pumped to the garden of Grove House to the east where it connects to a gravity manhole before discharging into the main Southern Water sewer network. An analysis of the existing pump station's capacity to receive inflow from the proposed development is to be undertaken.

A CCTV drainage survey report showing the existing foul network to which the site is proposed to connect is contained in Appendix 3.

The new foul connection will require Section 106 Consent from Southern Water.

Prepared by: John Roberts BSc (Hons)

For and on behalf of Owens Consulting Engineers Ltd

Photo 1: Looking north along access road with receiving ditch on left hand side



Photo 2: Looking south along access road with receiving ditch on right hand side



Photo 3: Culvert outlet from receiving ditch entering ditch on opposite side of access road, viewed from the east



Photo 4: Culvert outlet from receiving ditch entering ditch on opposite side of access road, viewed from the south



Screenshot: Extract from the EA's online mapping showing the ditch on the opposite side of the access road draining north and then northeast to connect to World's End Stream (a tributary of the River Adur).

Source:

<https://www.arcgis.com/apps/webappviewer/index.html?id=17cd53dfc524433980cc333726a563>
86





***Ote Hall Farmshop, Janes Ln, Burgess Hill,
RH15 0SR***

Mrs Carola Godman Irvine

GEOTECHNICAL GROUND INVESTIGATION REPORT

Project No. 1689-21



November, 2021

CONTENTS

1.	INTRODUCTION	2
2.	THE SITE	2
3.	LIMITATIONS	3
4.	GROUND INVESTIGATION	4
5.	GEOTECHNICAL TESTING	4
6.	GROUND CONDITIONS	5
7.	GROUNDWATER CONDITIONS	6
8.	ENGINEERING CONSIDERATIONS	6
	FOUNDATIONS	6
	ROADS AND HARDSTANDING	7
9.	SOAKAWAYS	7
10.	RADON	8
11.	CHEMICAL ATTACK ON BURIED CONCRETE.....	8
12.	RECOMMENDATION IN RELATION TO FOUNDATIONS.....	8

FIGURES

- Figure 1: Site Location Plan
- Figure 2: Borehole Location Plan
- Figure 3: SPT Vs Depth Chart
- Figure 4: Cu Vs Depth Chart
- Figure 5: Photo Logs
- Figure 6: Dynamic Cone Penetration Test
- Figure 7: Soakaway Test

APPENDIX A Borehole Logs

APPENDIX B Geotechnical Test Results

Your ref:
Our ref: SKZ_1689/21

Mrs Carola Godman Irvine
Ote Hall Farms,
Janes Ln,
Burgess Hill,
RH15 0SR

Dear Carola,

**REPORT ON GEOTECHNICAL GROUND INVESTIGATION AT
OTE HALL FARMSHOP, JANES LN, BURGESS HILL, RH15 0SR**

1. INTRODUCTION

AVZGeoEng Limited have been commissioned by Mr Gary Thompson of Crowther Associates Architects LLP ('the Client') to carry out a Geotechnical Investigation in regards to the proposed redevelopment at the above site as indicated on the engineering drawings provided by the client and in accordance with the AVZGeoEng quotation ref: SKZ_1689/21.

The proposed is intended to assess the above site in regards to the proposed development as indicated by the client.

2. THE SITE

The site, which may be found by approximate National Grid reference OS Grid Ref: E:533097 N: 120004 is situated at Ote Hall Farm, Janes Ln, Burgess Hill, RH15 0SR.

An extract of the Ordnance Survey map showing the location of the site is included in **Figure 1**.

The published 1:50,000 scale geological map of the area indicates that the site is underlain by Weald Clay Formation - Mudstone as bedrock geology. Superficial Deposits are not indicated on the published Geological maps and records of the area.

The highest part of the Wealden, the Weald Clay Group, up to 400m thick, probably formed at a time when the London-Brabant Massif was at its lowest. It contains a number of marine horizons, which

record short lived breaching of the Weald mud-plains by the Boreal Sea (Gale, 2000). Detailed heavy mineral provenance studies have shown that most of the detritus was derived from the Jurassic and to a lesser extent Palaeozoic rock of the London Platform to the north. However, in the upper part of the Hastings Group, detritus originating from Cornubia spilled over from the Wessex Basin. The general abundance of detritus derived from the west, which includes material from the Iberian Peninsula, points to doming on the continental margin west of the UK during Early Cretaceous times.

The overlying Weald Clay has also been proved cyclic in nature, predominantly comprising grey shales and mudstones with intervening clastic rich layers representing periods of higher energy. The Weald Clay mudstones are characteristically bioturbated-laminated clays. There is common cyclicity throughout the clays. The fresh colour of the clays is characteristically a dark-medium green grey, and when weathered these changes to an orange ochre-brown type colour. There are bands of red mudstones associated with sandstone horizons and rootlet beds, diagnostic of periods of uplift to the surface.

The cyclicity and lithology changes outlined above may be attributed to environmental changes. The arenaceous formations, including sand and pebbly units is believed to have been deposited during periods of progradation of alluvial fans.

The existing topography and history of development of the site suggest that in addition to these natural strata some made ground may be present on the site.

3. LIMITATIONS

Any opinions and interpretations expressed in this report are based on the ground conditions encountered during the site work and on the results of tests made in the field, together with AVZGeoEng conjectural interpretation between exploratory holes. There may, however, be other conditions prevailing at the site which have not been revealed by the investigation and which have therefore not been taken into account in this report. While the report may offer opinions on the possible configuration of strata, both between the excavations and below the maximum depth achieved by the investigation, these comments are for guidance only. It should also be noted that groundwater levels vary due to seasonal or other effects and may at times differ to those measured during the investigation. For investigations, which include environmental issues, the data obtained relate to the conditions which are relevant at the time of the investigation.

This report is not an engineering design and the figures and calculations enclosed to the report should be used by the Structural Engineer taking note that variations may apply depending on design loading, in techniques used, and in site conditions. Our recommendations should therefore not supersede the Engineer's design.

This report has been prepared by AVZGeoEng limited. No individual is personally liable in connection with the preparation of this report. By receiving this report and acting on it, the client or any other person accepts that no individual is personally liable whether in contract, tort, for breach of statutory duty or otherwise.

AVZGeoEng Limited prepared this Report for our Client. Any third parties using this Report do so entirely at their own risk. AVZGeoEng makes no warranty or representation whatsoever, express or implied, with respect to the use by a third party of any information contained in this Report or its suitability for any purpose. AVZGeoEng assumes no responsibility for any costs, claims, damages or

expenses (including any consequential damages) resulting from the use of this Report or any information contained in this Report by a third party.

4. GROUND INVESTIGATION

The site work was carried out on 24th November 2021, aimed to obtain geotechnical parameters in regards to the proposed development. The investigation and soil descriptions were carried out in general accordance with BS5930:2015 – Code of Practice for Site Investigations.

The ground investigation comprised the following works:

- 3No boreholes advanced by drive-in sampler technique to a max 5.0m depth;
- 4No CBR tests using Dynamic Cone Probing;
- In situ testing and logging.

The borehole locations were determined approximately by reference to physical features present on the site at the time of investigation and the ground level at the borehole locations was not determined.

The locations of the exploratory holes are presented on **Figure 2**, the exploratory hole logs and the geotechnical testing results are presented in the **Appendix A** and **Appendix B**, respectively.

5. GEOTECHNICAL TESTING

The programme of geotechnical tests undertaken on samples obtained from the intrusive investigation is presented in **Table 1**, the main purpose of which was to classify the ground beneath the site and assist in determining its physical and mechanical properties. Where appropriate, testing was undertaken in accordance with BS 1377:1990 & EN ISO 14688-2 2004+A1:2013 Method of Tests for Soils for Civil Engineering Purposes and was carried out by the AVZGeoEng Ltd in house laboratory.

Tests carried out in order to classify the concrete class required on site have been undertaken following the procedures within BRE SD1:2005 by a UKAS accredited laboratory (The Environmental Laboratory Ltd).

Table 1 – Summary of Geotechnical Testing Programme

Strata	Tests undertaken	No of Tests
Weald Clay Formation	Natural Moisture Content	5
	Plasticity Index	5
	pH & Water Soluble Sulphates	3

6. GROUND CONDITIONS

The exploratory holes revealed that the site is underlain by layer of Made Ground with limited thickness over stratum classified as Weald Clay Formation at depth. This appears to generally confirm the stratigraphical succession suggested by the published geological records.

The ground conditions are summarised in **Table 2** below.

Table 2 - General succession of strata encountered

Brief Description	Depth to top of stratum m.bgl	Thickness (m)
Made Ground	G.L	0.25 to 0.3
Weald Clay Formation	0.25 to 0.3	Not proven

The made ground encountered during the site investigation comprised melange of light brown and grey clay and silt and sand.

The stratum revealed under the made ground is classified as Weald Clay Formation recovered as firm at the top of the stratum silty clay, turning into stiff and very stiff light grey and brown, occasionally with black spots and laminated, silty clay and weak mudstone.

The measured and inferred soil parameters for the stratum are listed in **Table 3** below.

Table 3 – Summary of Soil Parameters for the Weald Clay Formation

Soil Parameters	Range	Results
Liquid Limit (%)	41 to 67	Appendix B
Plastic Limit (%)	20 to 26	Appendix B
Plastic Index (%)	21 to 41	Appendix B
Modified Plasticity Index (%)	21 to 41	Appendix B
Plasticity Term	Intermediate to High	
Volume Change Potential (NHBC)	Medium to High	
Moisture Content (%)	17.8 to 28.5	Appendix B
SPT 'N' Values	14 to 62	Appendix A, Figure 3
Undrained Shear Strength (kN/m ²) inferred by SPT ⁽¹⁾	59 to 260	Figure 4
Undrained Shear Strength (kN/m ²) inferred by HV ⁽²⁾	75 to 93	Appendix A, Figure 4
Strength Term	Firm to Hard	

⁽¹⁾ SPT – Standard Penetration Tests

⁽²⁾ HV – Hand Vane Tests

7. GROUNDWATER CONDITIONS

A groundwater seepage was recorded in borehole BH1 at level of 3.5mbgl. The groundwater level measured at the end of shift was 3.8mbgl measured as presented on the drilling logs in **Appendix A**. Boreholes BH2 and BH3 remained dry.

8. ENGINEERING CONSIDERATIONS

FOUNDATIONS

The ground conditions appear suitable for the design and construction of relatively shallow spread foundations for the proposed development. Alternatively, piled foundations could be adopted, particularly for any moderate to heavy or sensitive foundation loads.

Table 4 – Design and Construction of Spread Foundations

Design/construction considerations	Design/construction recommendations						
Founding stratum	Weald Clay Formation						
Depth	Foundations should be taken to a minimum depth of 1m below finished ground level and at least 0.1m into the founding stratum below any overlying made ground or to any greater depth required in respect of the special design considerations given below.						
Special design considerations	Due to the presence of shrinkable soils foundations should be designed taking into account all the normal precautions, including minimum depths, to minimise the risk of future foundation movements in accordance with NHBC Standards, or similar. The findings of the ground investigation indicate that foundations should be designed for shrinkable soils of high volume change potential.						
Net Allowable Bearing Capacity for range of strip footings and square bases founded in the Weald Clay Formation	Net allowable bearing pressure kN/m ²						
	Strip Footings			Square bases			
	Width	0.6m	0.75m	1m	1.0m	1.5m	2.0m
	Depth						
	1.0m	104	105	105	123	123	123
	1.5m	139	140	141	164	164	164
	2.0m	157	157	158	184	184	184
Basis of allowable bearing pressures	Each allowable bearing pressure includes an overall factor of safety of 3 against bearing capacity failure and with total settlements associated with the bearing pressure estimated to be less than 25mm.						

ROADS AND HARDSTANDING

In the 1m to 1.5m below the proposed finished ground level the exploratory holes have revealed a soil profile comprising thin layer of made ground – topsoil that would need to be removed during the construction, over firm silty clay (Weald Clay Formation).

In road/pavement design terms, the groundwater conditions are anticipated to comprise a low water table at least 1m below the pavement formation level.

The results of in situ DCP testing are summarised in **Table 5**.

Table 5 Summary of CBR values derived from in situ DCP tests

Test Location	Material Type	Minimum CBR value determined at or just below anticipated formation level
DCP1	Made ground/ Weald Clay Formation	2% (average > 5%)
DCP2	Made ground Glacial Sand and Gravel	3% (average > 5%)
DCP3	Made ground Glacial Sand and Gravel	2% (average > 4%)
DCP4	Made ground Glacial Sand and Gravel	2% (average > 4%)

The cohesive sub-grade soils do not appear susceptible to improvement by rolling with conventional compaction plant.

The in situ CBR test results are related to the ground properties at the time of the testing, as these could vary significantly with change of the moisture content of the material. If the drainage and water table position make probability of the material saturating in service possible than the Equilibrium CBR values should be used in the design.

9. SOAKAWAYS

Soakaways are used to store the immediate surface water run-off from hard surfaced areas, such as roofs or car parks, and allow for infiltration into the adjacent soil. They need to provide the necessary capacity to receive run-off from a subsequent storm. The time taken for discharge depends upon the soakaway shape and size, and the surrounding soil's infiltration characteristics. Soakaway may not be an appropriate solution in areas of ground that have low permeability and where the maximum seasonal water table may be at or above the base of the proposed soakaway.

A soakaway test was carried out in shallow borehole and trial pit at location advised by the engineer as potentially suitable for the proposed soakaway, following the analogy and recommendations given in the BRE 365.

Due to low infiltration rates, the water level in the SKW1 and SKW2 failed to drain below the 75% level, within the time available for the test, results are presented in the **Figures 7.1** and **7.2**. The low permeability recorded are considered to be a function of the typically high fines (clay and silt) contents of the sub-soils, hence the location is considered unsuitable for traditional shallow pit soakaways.

10. RADON

Indicative Atlas of Radon in the UK indicates that the property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level and no radon protective measures are necessary. However, it should be noted that radon need to be considered in relation to any development with a basement regardless of the location.

Additional information about Radon Affected Areas could be obtained from the publication 'Radon - Guidance on protective measures for new buildings BRE211 (BRE and HPA, 2007)' and the "Indicative Atlas of Radon in England and Wales" published by the Health Protection Agency and British Geological Survey, see www.ukradon.org for more details.

11. CHEMICAL ATTACK ON BURIED CONCRETE

The results of chemical tests carried out on soil samples from the made ground and natural soil indicate 2:1 water soil extract sulphate with max content of 70 mg/l with slightly acidic to slightly alkaline pH values.

These results indicate that, in accordance with BRE Special Digest 1:2005 Concrete in aggressive ground, the Aggressive Chemical Environment for Concrete (ACEC) Classification is **AC-1** with a Design Sulphate Class for the site of **DS-1**.

This assumes nominally static groundwater conditions and that no significantly disturbed clay comes into contact with concrete foundations or structures. This would apply for designing the concrete class for shallow foundations and concrete elements.

If significantly disturbed clay is likely to come into contact with concrete foundations or structures it will be necessary to carry out additional tests on the soil to investigate its total potential sulfate content. This will facilitate a re-evaluation of the ACEC Classification and Design Sulfate Class for the material, to take into consideration potential oxidation of available sulphides (e.g. pyrite), as defined in Table C1 (natural ground sites) or C2 (brownfield sites) BRE Special Digest 1: 2005.

12. RECOMMENDATION IN RELATION TO FOUNDATIONS

From the results of site investigation, the following recommendations are given in respect to ground engineering and foundation design of the underlying soils:

- The site investigation consisted of three drive-in sampler boreholes up to 5.0mbgl aimed to confirm the ground profile below the site and recover samples for laboratory testing. A groundwater seepage was recorded in borehole BH1 at level of 3.5mbgl.
- The investigation found that site is underlain by Made Ground/topsoil with limited thickness over stratum that could be classified as Weald Clay Formation at depth. The investigation revealed

ground conditions appear feasible for the design and construction of conventional spread foundations for the proposed development.

- Foundations should be taken at least 1.0m below the finishing ground level below any overlying made ground or to any greater depth required in respect of the special design considerations given below. Depends on the depth and shape of the proposed footings, spread foundations should be designed using a net allowable bearing pressure of between 104kN/m² and 184kN/m² as advised in the **Table 4** of this Report. This advice is appropriate for the Ground Investigation Report (GIR), in accordance with the current standards (BS EN 1997-1: 2004+A1:2013), the design should confirm that the actual structural loads imposed on the ground would satisfy the ULS and SLS safety factors and provide satisfactory utilisation of the soil bearing capacity.
- The water-soluble soil extract sulphate contents tests indicate that, in accordance with BRE Special Digest 1:2005 Concrete in aggressive ground, the Aggressive Chemical Environment for Concrete (ACEC) Classification is **AC-1** with a Design Sulphate Class for the site of **DS-1**.
- All foundation excavations should be inspected and any made ground, soft, organic or otherwise unsuitable materials removed and replaced with mass concrete.

We trust that the above meets with your requirements, however, if should wish to discuss any of the matters further, please do not hesitate to contact us.

Yours Sincerely,

For AVZGeoEng Ltd

Author:

BSc (Hons) Silvanka Kadieva-Zarkovska
Senior Geotechnical Engineer



Approved:

Dipl. Ing. Boban Zarkovski CEng MICE



FIGURES



Client: Mrs Carola Godman Irvine

Scale: NTS

Site: Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR

SITE LOCATION PLAN

Job No: 1689/21

Figure No: 1



LEGEND:

-  BH - Borehole
-  SKW - Soakaway test
-  CBR - CBR Test



Birch Grove
70 Copthorne Road
Felbridge, Surrey
RH19 2NU
United Kingdom

Email: info@avzgeoeng.co.uk
Web: www.avzgeoeng.co.uk
Mob: 07885977732
Tel: 01342457117

Client
Mrs Carola Godman Irvine

Project Title
Ote Hall Farmshop, Janes Ln,
Burgess Hill, RH15 0SR

Drawing Title
Layout Investigation
Points Plan

Drawn	Date	Checked	Date	Approved	Date
SKZ	11/12/2021	BZ	11/12/2021	BZ	11/12/2021
Scale		Orig Size		Dimensions	
NTS				M	
Project No.			Drawing File		
1689/21					
Drawing No.					Rev.
FIGURE_2					

	Site	SPT N Vs Depth Profile	
	Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR	Client: Mrs Carola Godman Irvine	Job Number 1689/21

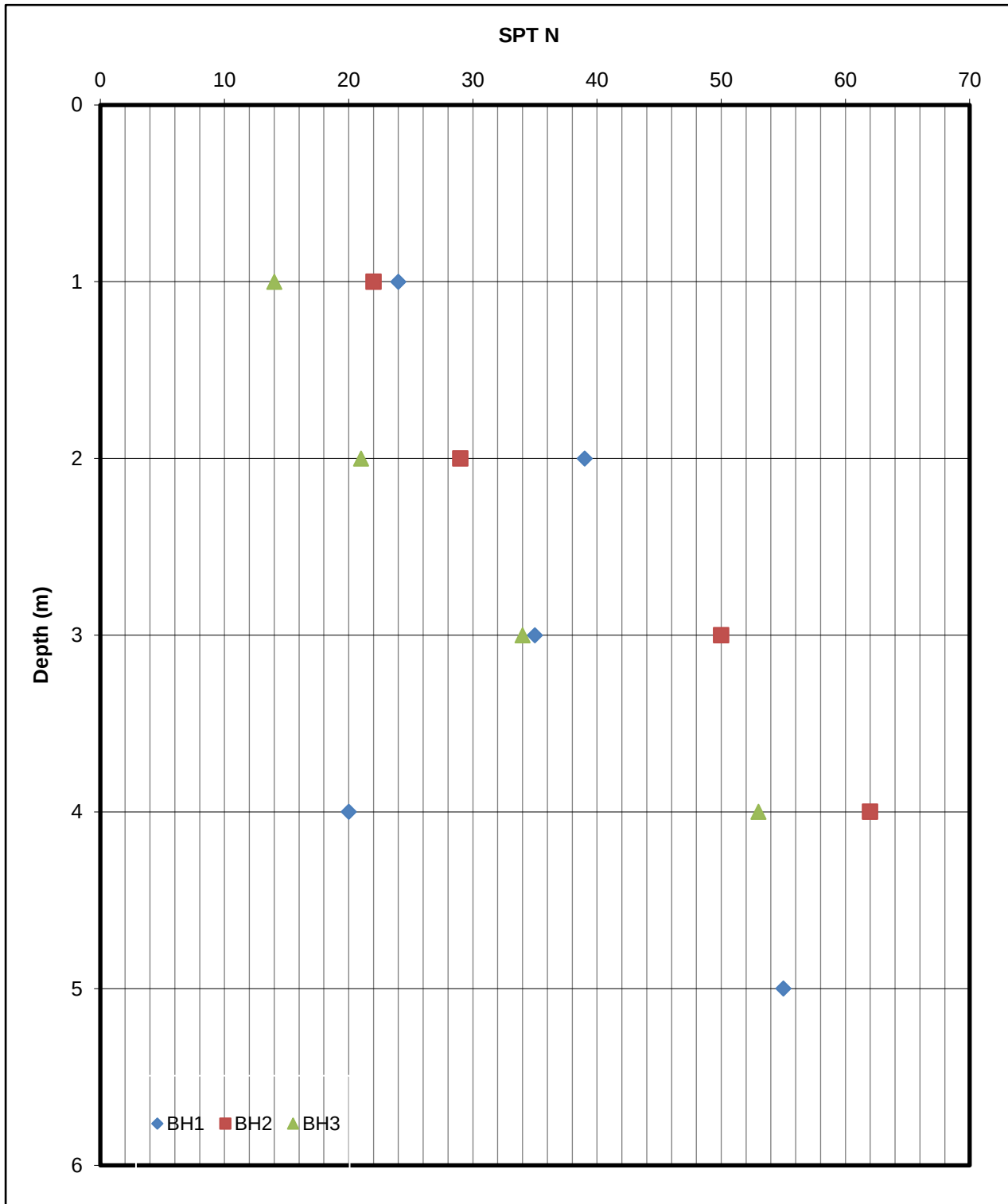


Figure 3

	Site	c_u Vs Depth Profile	
	Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR	Client: Mrs Carola Godman Irvine	Job Number 1689/21

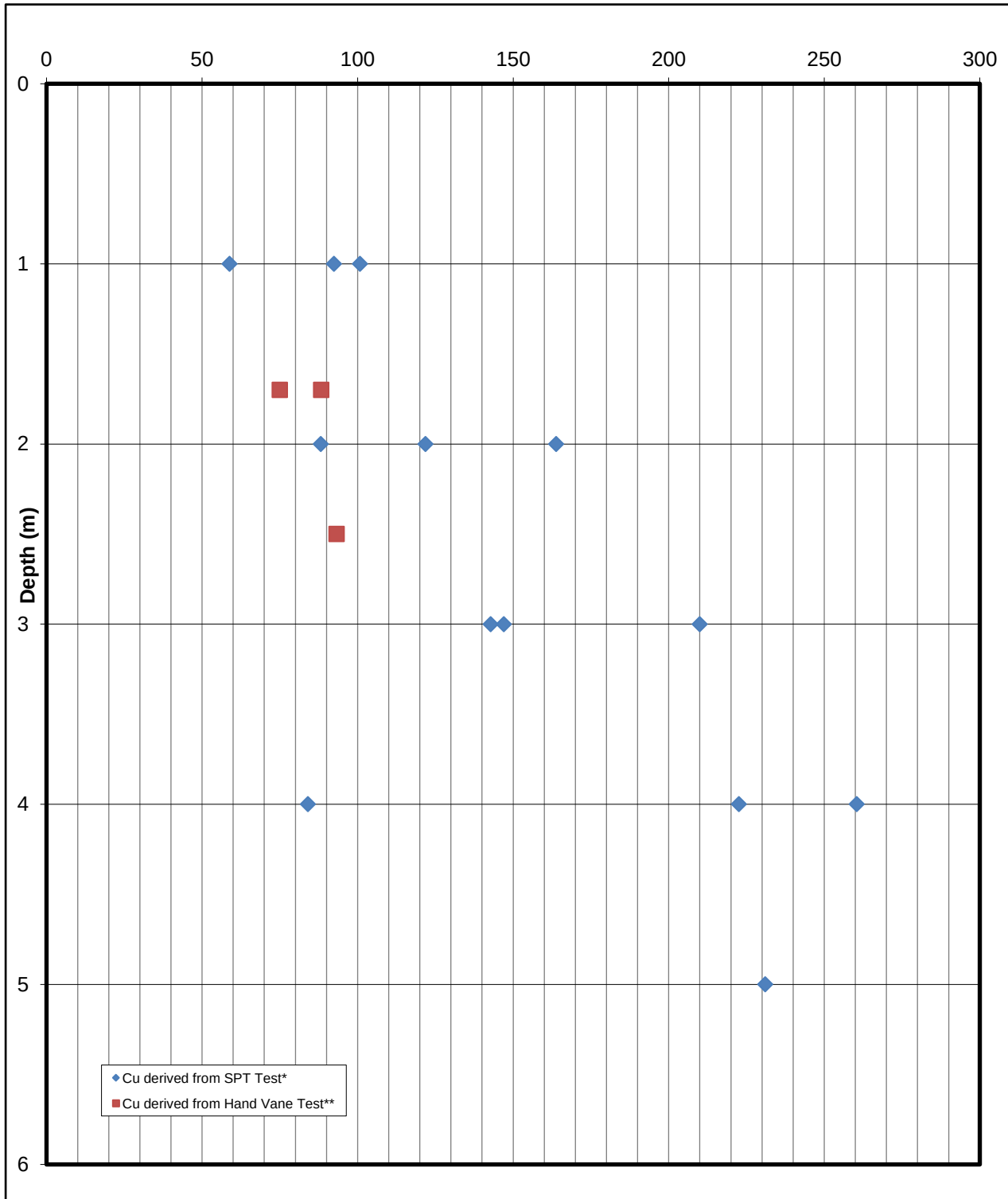


Figure 4

		Factual Report on Ground Investigation		PHOTOGRAPHIC LOG	
Client: Mrs Carola Godman Irvine		Site: Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR			Job No: 1689/21
Photo No.1	Figure 5				
Description: Terrier Rig Performing Drilling at the location					
Photo No.2	Figure 5				
Description: Core Recovered From BH1					

Figure 5

Photo No.3	Figure 5	
Description: Core Recovered From BH2		

Photo No.4	Figure 5	
Description: Core Recovered From BH3		

Figure 5

Photo No.5	Figure 5	
Description: CBR Test		

Photo No.6	Figure 5	
Description: Core recovered from Soakaway test		

Figure 5

Photo No.7	Figure 5	
Description: Core recovered from Soakaway test		

Figure 5

IN SITU DCP TEST

DCP1

Site:

Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR

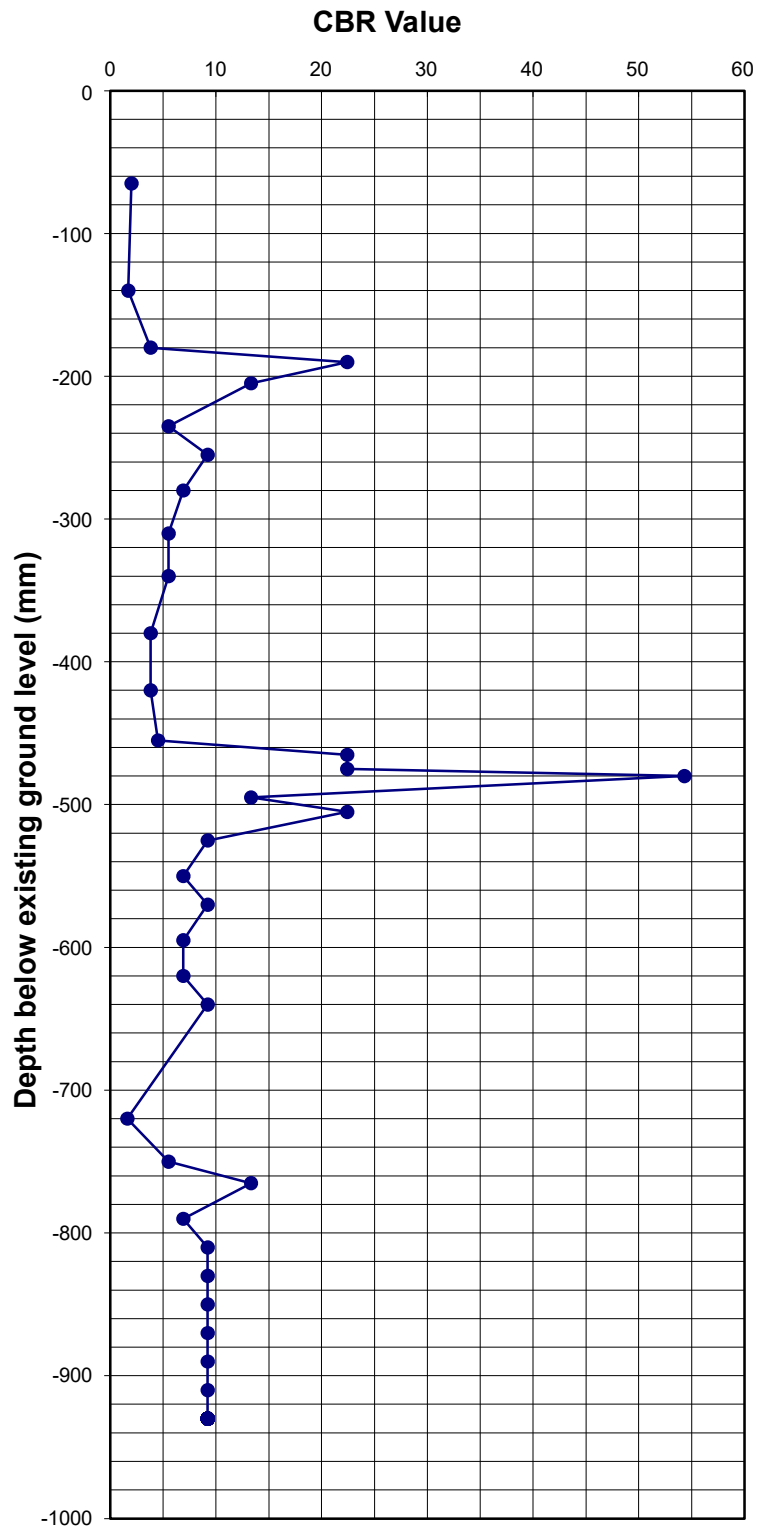
Client:

Mrs Carola Godman Irvine

Depth (mm)

0

Number of blows	Reading (mm)	Pen/ blow (mm)	Depth (mm)	CBR
0	60	0	0	
1	125	65	-65	2
2	200	75	-140	2
3	240	40	-180	4
4	250	10	-190	22
5	265	15	-205	13
6	295	30	-235	6
7	315	20	-255	9
8	340	25	-280	7
9	370	30	-310	6
10	400	30	-340	6
11	440	40	-380	4
12	480	40	-420	4
13	515	35	-455	5
14	525	10	-465	22
15	535	10	-475	22
16	540	5	-480	54
17	555	15	-495	13
18	565	10	-505	22
19	585	20	-525	9
20	610	25	-550	7
21	630	20	-570	9
22	655	25	-595	7
23	680	25	-620	7
24	700	20	-640	9
25	780	80	-720	2
26	810	30	-750	6
27	825	15	-765	13
28	850	25	-790	7
29	870	20	-810	9
30	890	20	-830	9
31	910	20	-850	9
32	930	20	-870	9
33	950	20	-890	9
34	970	20	-910	9
35	990	20	-930	9



Comments:

Job Number: 1689/19

Figure: 6.1

IN SITU DCP TEST

DCP2

Site:

Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR

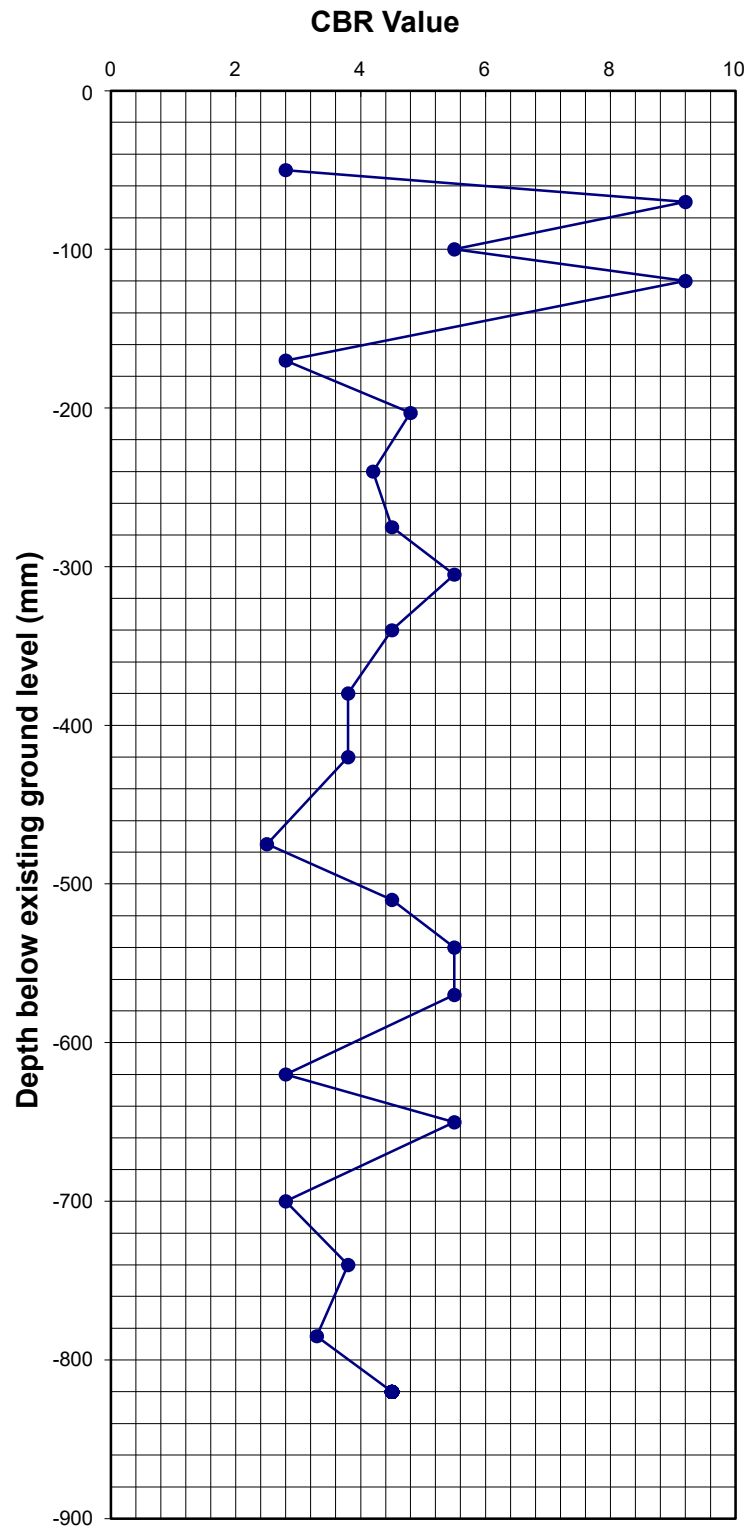
Client:

Mrs Carola Godman Irvine

Depth (mm):

0

Number of blows	Reading (mm)	Pen/ blow (mm)	Depth (mm)	CBR
0	120	0	0	
1	170	50	-50	3
2	190	20	-70	9
3	220	30	-100	6
4	240	20	-120	9
5	290	50	-170	3
6	323	33	-203	5
7	360	37	-240	4
8	395	35	-275	5
9	425	30	-305	6
10	460	35	-340	5
11	500	40	-380	4
12	540	40	-420	4
13	595	55	-475	3
14	630	35	-510	5
15	660	30	-540	6
16	690	30	-570	6
17	740	50	-620	3
18	770	30	-650	6
19	820	50	-700	3
20	860	40	-740	4
21	905	45	-785	3
22	940	35	-820	5



Comments: DCP Test Started from GL, tools sunk between GL and 0.120mbgl

Job Number: 1689/19

Figure: 6.2

IN SITU DCP TEST

DCP3

Site:

Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR

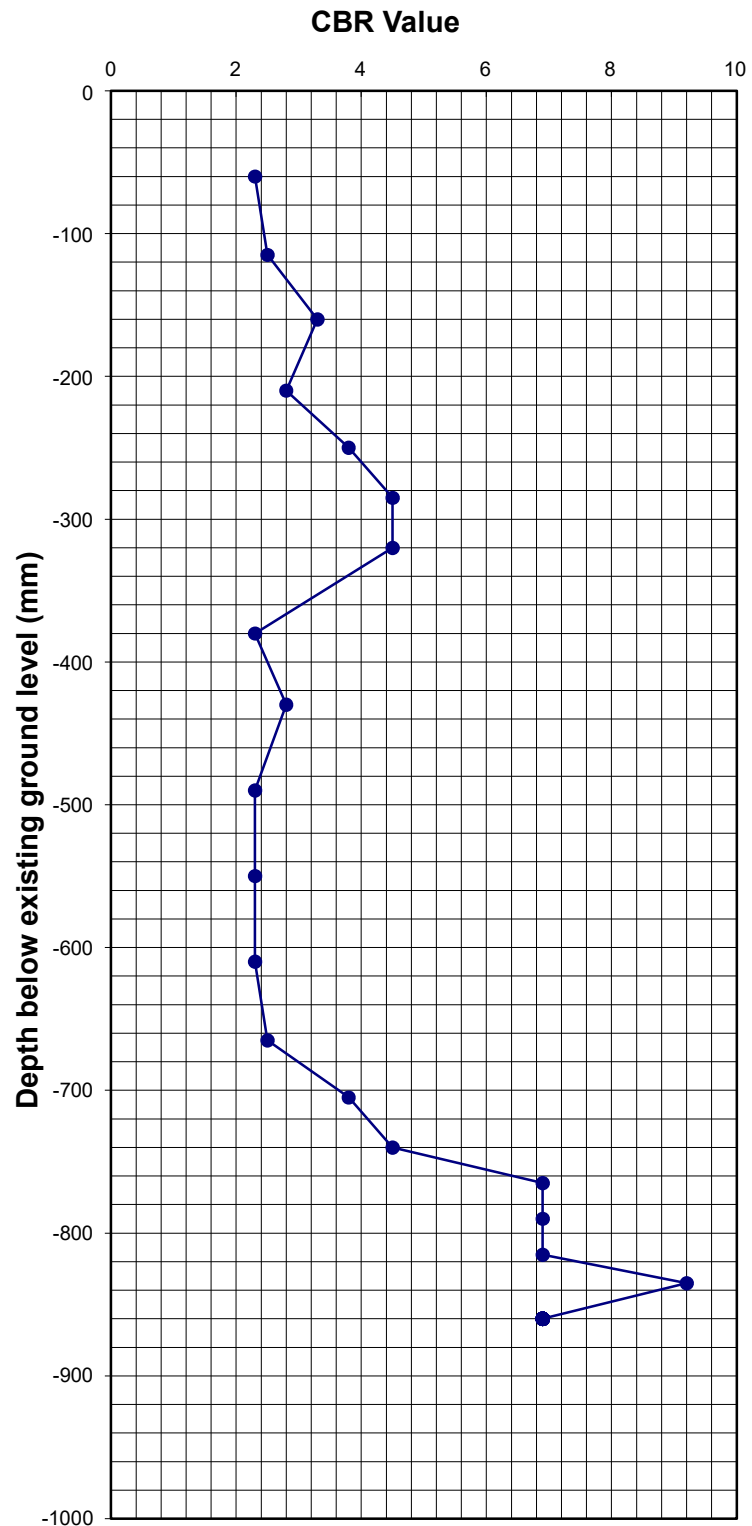
Client:

Mrs Carola Godman Irvine

Depth (mm):

0

Number of blows	Reading (mm)	Pen/ blow (mm)	Depth (mm)	CBR
0	130	0	0	
1	190	60	-60	2
2	245	55	-115	3
3	290	45	-160	3
4	340	50	-210	3
5	380	40	-250	4
6	415	35	-285	5
7	450	35	-320	5
8	510	60	-380	2
9	560	50	-430	3
10	620	60	-490	2
11	680	60	-550	2
12	740	60	-610	2
13	795	55	-665	3
14	835	40	-705	4
15	870	35	-740	5
16	895	25	-765	7
17	920	25	-790	7
18	945	25	-815	7
19	965	20	-835	9
20	990	25	-860	7



Comments: DCP Test Started from GL, tools sunk between GL and 0.130mbgl

Job Number: 1689/19

Figure: 6.3

IN SITU DCP TEST

DCP4

Site:

Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR

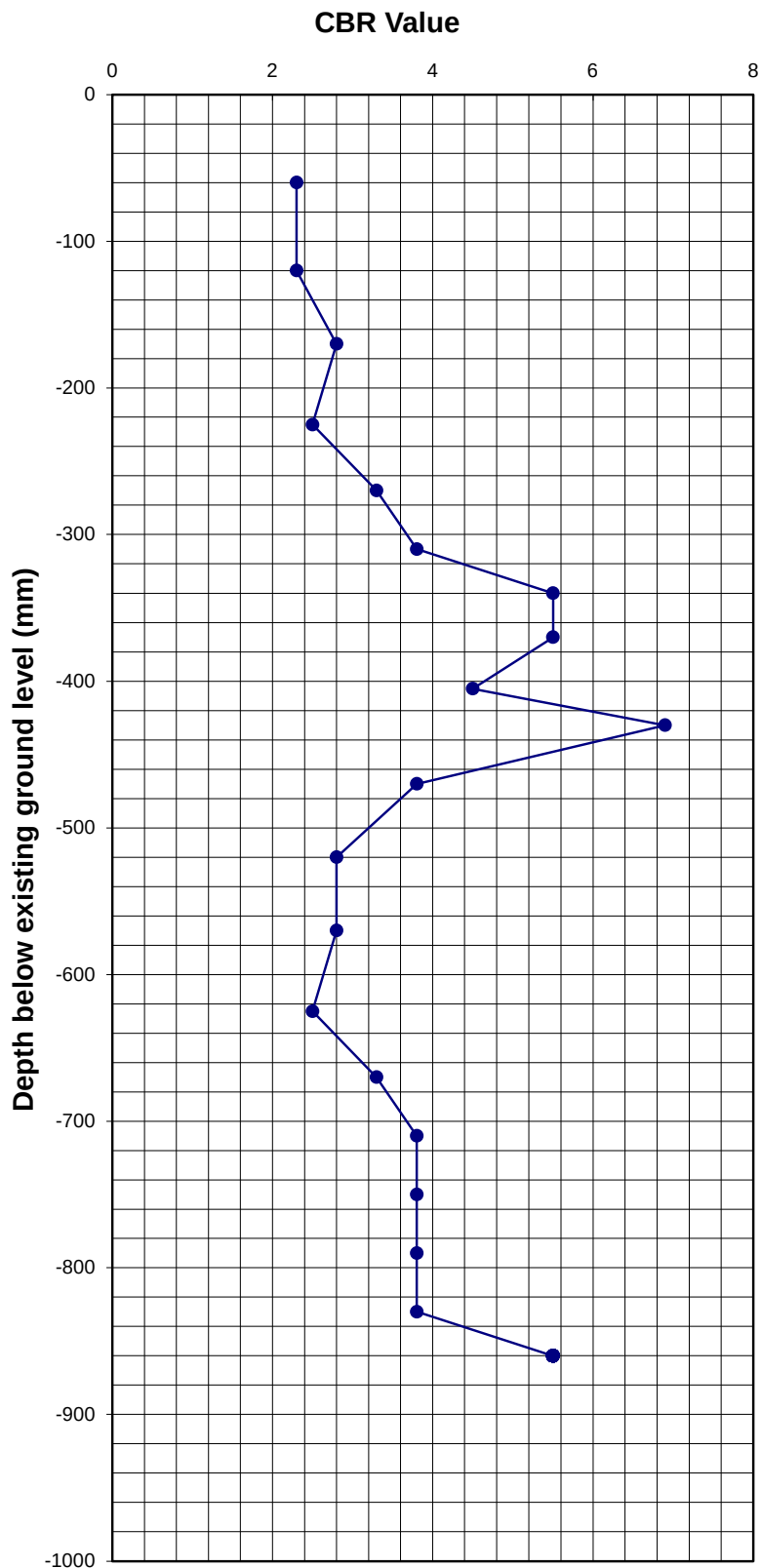
Client:

Mrs Carola Godman Irvine

Depth (mm):

0

Number of blows	Reading (mm)	Pen/ blow (mm)	Depth (mm)	CBR
0	120	0	0	
1	180	60	-60	2
2	240	60	-120	2
3	290	50	-170	3
4	345	55	-225	3
5	390	45	-270	3
6	430	40	-310	4
7	460	30	-340	6
8	490	30	-370	6
9	525	35	-405	5
10	550	25	-430	7
11	590	40	-470	4
12	640	50	-520	3
13	690	50	-570	3
14	745	55	-625	3
15	790	45	-670	3
16	830	40	-710	4
17	870	40	-750	4
18	910	40	-790	4
19	950	40	-830	4
20	980	30	-860	6

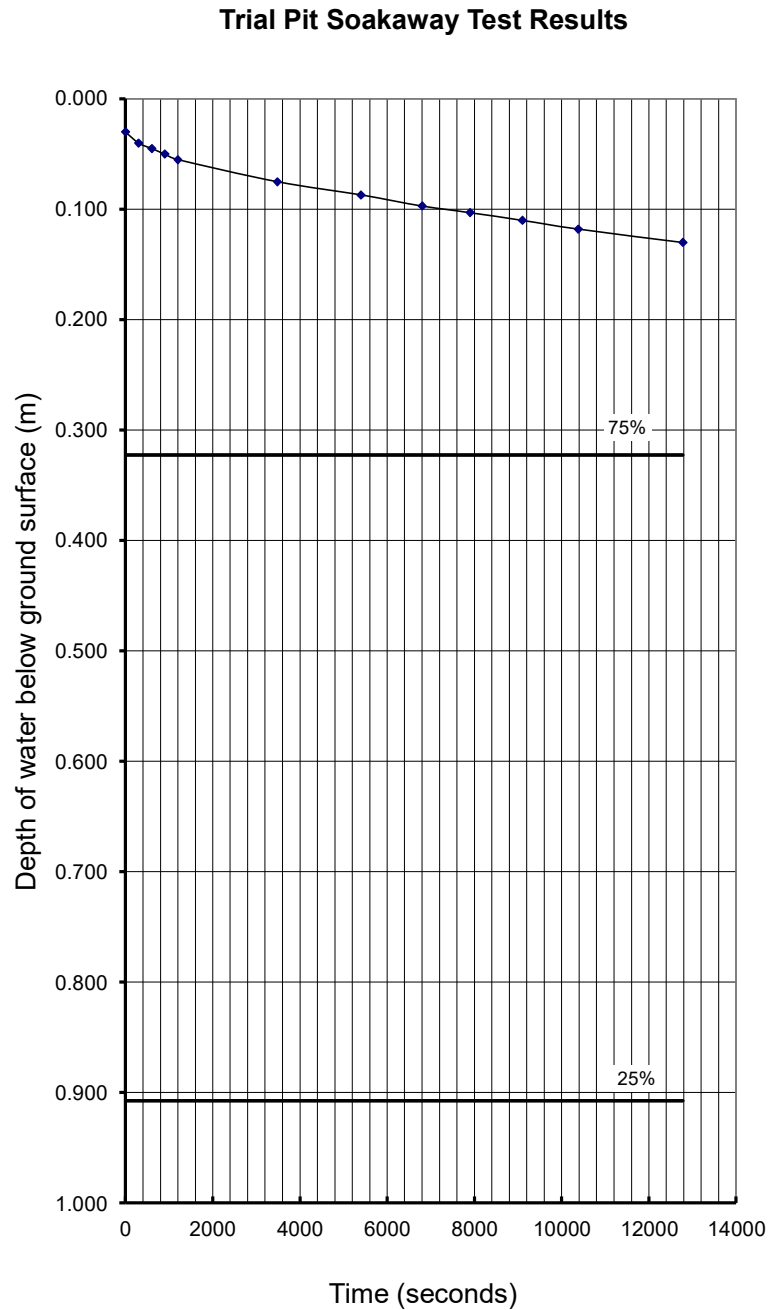


Comments: DCP Test Started from GL, tools sunk between GL and 0.120mbgl

Job Number: 1689/19

Figure: 6.4

Location	Ote Hall Farmshop, Janes Ln, Burgess Hill, RH	Test No	SKW1
Client	Mrs Carola Godman	Length of Trial Pit (m)	0.5
Job Number	1689/21	Width of Trial Pit (m)	0.4
Date	24-Nov-21	Water level at start (mbgl)	0.03
Operator	BZ	Depth to Base of Trial Pit (m)	1.2

[illegible]

V_{p75-25} (m³)	0.12
a_{p50} (m²)	1.25
t_{p75} (s)	NA
t_{p25} (s)	NA
t_{p75-25} (s)	NA
Infiltration Rate (m/s)	NA

Values determined from graph

Figure
7.1

BOREHOLE SOAKAWAY TEST			
Location	Ote Hall Farmshop, Janes Ln, Burgess Hill,	Test No	SKW2
Client	Mrs Carola Godman	Internal Borehole Diameter (m)	0.13
Job Number	1689/21	Water level at start (mbgl)	0.07
Date	24-Nov-21	Depth to Base (m)	2.00
Operator	BZ		

[illegible]

Vp 75-25 (m3)	0.0087
ap 50 (m2)	0.407
tp 75-25 (s)	NA
Infiltration Rate (m/s)	NA

Value determined from graph



Figure 7.2



Ote Hall Farmshop, Janes Ln,
Burgess Hill, RH15 0SR
Ref: SKZ_1689/21_November 2021

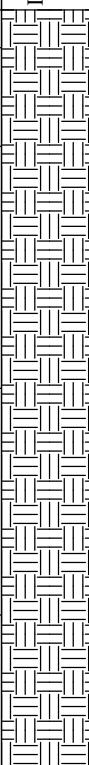
APPENDIX A



AVZGeoEng Ltd
Registered office
70 Cophorne Road • East Grinstead • West Sussex • RH19 2NU • UK
Registered in England No. 7824020
www.avzgeoeng.co.uk

BOREHOLE LOG

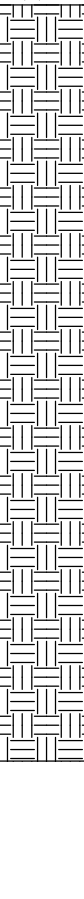
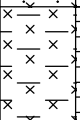
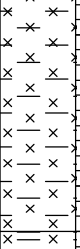
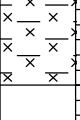
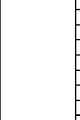
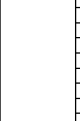
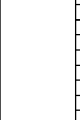
Project Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR				BOREHOLE No BH1	
Job No SKZ_1689/21	Date 24-11-21 24-11-21	Ground Level (m)	Co-Ordinates (Local)		
Contractor AVZGeoEng Ltd				Sheet 1 of 1	

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA DESCRIPTION	Geology	Instrument/ Backfill
Depth	Type No	Test Result							
1,00-1,45 1,00	SPT1	N24				0,25	MADE GROUND: Light brown to light grey clayey silt and sand - topsoil.		
						(0,65) 0,90	Light brown to light grey slightly orange with occasional black spots, occasionally sandy SILT and CLAY with sandstone/mudstone fragments. (Weald Clay Formation)		
1,70	HV1	75,75,75				(1,60)	Firm to stiff, light brown light grey mottled, occasionally sandy CLAY and SILT with occasional weak mudstone and siltstone. (Weald Clay Formation)		
2,00-2,45 2,00	SPT2	N39				2,50			
2,50	HV2	95,90,95							
3,00-3,45 3,00	SPT3	N35			(1,50)		Firm to stiff, brown occasionally grey SILT and CLAY and weak mudstone/siltstone. (Weald Clay Formation)		
4,00-4,45 4,00	SPT4	N20			4,00		Stiff to very stiff, grey occasionally brown and orange mottled, SILT and CLAY and weak mudstone/siltstone. (Weald Clay Formation)		
5,00-5,45 5,00	SPT5	N55			(1,00) 5,00				

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											The location was CAT scanned and inspection pit excavated by hand prior the commencement of the drilling. The borehole was backfilled with arisings on completion. Groundwater seepage at 3.5mbgl, on completion of work 3.8mbgl.
All dimensions in metres Scale 1:50			Client Mrs Carola Godman Irvine			Method/ Plant Used Terrier Drive in Sampling					

BOREHOLE LOG

Project Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR				BOREHOLE No BH2	
Job No SKZ_1689/21	Date 24-11-21 24-11-21	Ground Level (m)	Co-Ordinates (Local)		
Contractor AVZGeoEng Ltd				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA	Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
1,00-1,45 1,00 1,70 2,00-2,45 2,00 3,00-3,45 3,00 4,00-4,45 4,00	SPT1	N22			0,25	MADE GROUND: Light brown to light grey clayey silt and sand - topsoil.			
					(1,75)	Firm to stiff, light brown to light grey slightly orange with occasional black spots, occasionally sandy CLAY and SILT with sandstone/mudstone fragments. (Weald Clay Formation)			
	HV1	90,85,90				2,00			
	SPT2	N29					Firm to stiff, brown occasionally grey SILT and CLAY and weak mudstone/siltstone. (Weald Clay Formation)		
						(2,30)			
	SPT3	N50				4,30			
	SPT4	N62				(0,70)	Stiff to very stiff, grey occasionally brown and orange mottled, SILT and CLAY and weak mudstone/siltstone. (Weald Clay Formation)		
				5,00					

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											The location was CAT scanned and inspection pit excavated by hand prior the commencement of the drilling. The borehole was backfilled with arisings on completion. Borehole remained dry.
All dimensions in metres Scale 1:50			Client Mrs Carola Godman Irvine			Method/ Plant Used Terrier Drive in Sampling			Logged By B Žarkovski		

BOREHOLE LOG

Project Ote Hall Farmshop, Janes Ln, Burgess Hill, RH15 0SR				BOREHOLE No BH3	
Job No SKZ_1689/21	Date 24-11-21 24-11-21	Ground Level (m)	Co-Ordinates (Local)		
Contractor AVZGeoEng Ltd				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA		Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION			
1,00-1,45 1,00 										

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											The location was CAT scanned and inspection pit excavated by hand prior the commencement of the drilling. The borehole was backfilled with arisings on completion. Borehole remained dry.
All dimensions in metres Scale 1:50			Client Mrs Carola Godman Irvine			Method/ Plant Used Terrier Drive in Sampling				Logged By B Žarkovski	