

Myall, Peter

From: Ian Burman <[REDACTED]>
Sent: 16 May 2023 11:27
To: Myall, Peter
Cc: Nadia Chatzigeorgiou <[REDACTED]> Joy, Oliver; David Steel; Adam Humphrey
Subject: RE: WSCC/012/23 - Downlands School - Further info/Clarification sought 06 04 23

IB / 13133-05

Peter,

Percolation testing was carried out at Downlands School in October 2022, and is detailed in the Preliminary Ground Investigation report by Ground Management Ltd (report ref. G6523 dated 24 November 2022). We believe that this report has sufficient information demonstrate that the site does not have viable infiltration potential, and the report should satisfy paragraph 1) a) of the planning comments produced by Katherine Waters, dated 5 May 2023.

Further development of the Tender stage surface water drainage design will be required in order to satisfy the runoff rate and volume criteria in paragraphs 1) b) and 1) c) in Katherine's comments. As David noted in his earlier email, we would expect the D+B Contractor to produce a surface water drainage design that satisfies the planning conditions.

Regards,

IAN BURMAN

Civil Engineer



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From: Myall, Peter <[REDACTED]>
Sent: Friday, May 12, 2023 1:37 PM
To: Ian Burman <[REDACTED]> Adam Humphrey <[REDACTED]>
Cc: Nadia Chatzigeorgiou <[REDACTED]> Joy, Oliver <[REDACTED].com>; David Steel <[REDACTED]>
Subject: RE: WSCC/012/23 - Downlands School - Further info/Clarification sought 06 04 23 [Filed 15 May 2023 09:24]

Hi Ian/Adam,

Are you able to review and provide comment do you think the drainage/soil investigations we have undertaken are sufficient to relax the requirement for percolation testing. Obviously we would prefer the drainage strategy to be agreed prior to consent being granted.

Best Regards

Peter

Peter Myall *BSc (Hons)*
Senior Building Surveyor
Engineering Services



Faithful+Gould, member of the SNC-Lavalin Group
Nova North, 11 Bressenden Place, Westminster, London, SW1E 5BY



Company

From: David Steel <[redacted]>
Sent: 10 May 2023 10:16
To: Myall, Peter <[redacted]>
Cc: Nadia Chatzigeorgiou <[redacted]>, Joy, Oliver <[redacted]>, Ian Burman <[redacted]>, Adam Humphrey <[redacted]>
Subject: RE: WSCC/012/23 - Downlands School - Further info/Clarification sought 06 04 23

Morning Peter

FYI – please find attached Consultation response which has appeared on the WSCC Planning Application website, as of yesterday. It suggests that there will be a pre-commencement condition for drainage, as outlined in this consultation response.

Drainage proposals – the attached plans were submitted with the planning application, but the WSCC Flood Risk Manager appears to be requesting more detailed information. Bearing in mind that this is a D&B contract, we assume that the contractor will be preparing their own drainage design for submission. I have copied in HOP in case they have any views on this.

Kind regards

David

David Steel
Director

[redacted]
W: www.hnw.co.uk

PRELIMINARY GROUND INVESTIGATION

AT

DOWNLANDS SCHOOL, HASSOCKS

FOR

FAITHFUL AND GOULD

G6523

24 November 2022



DOCUMENT CONTROL

Report Title: Preliminary Ground Investigation
Downlands School, Hassocks

Report No./ Issue: G6523-01

Report Status: Issued for Client Comment

Distribution: Faithful and Gould PDF copy 24 November 2022
HOP

Prepared by: Alistair Tyler BSc MSc DIC CEng MICE

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Figure 1: Site Location Plan

Figure 2: Existing Site Layout

Figure 3: Proposed Development

Figure 4: Exploratory Hole Location Plan

Exploratory Hole Logs: Boreholes BH1, BH2, BH3 and BH4
Trial Pits TP1 and TP2

Geotechnical Laboratory Test Results

Contamination Screening Results

Soakage Test Results

Groundwater Monitoring

1.0 INTRODUCTION

- 1.1 Ground Management Ltd have undertaken a preliminary ground investigation at Downlands School, Hassocks to collect additional information on ground conditions relating to proposals for installation of a new modular building.
- 1.2 The investigation was required to inform the design of drainage and foundations.
- 1.3 The work included a site walkover, borehole excavations to examine the ground profile and install standpipes, trial pits for soakage testing, geotechnical laboratory testing, contamination screening and groundwater monitoring.
- 1.4 This document provides a record of the investigation and its findings together with discussion and recommendations to assist foundation and drainage design.
- 1.5 A full contamination assessment has not been requested or carried out.
- 1.6 Recommendations are based on the conditions revealed by the investigation. Should the proposed development change or ground conditions be found to vary from those previously revealed they should be reported to a geotechnical engineer to consider the significance.
- 1.7 The work was carried out for Faithful and Gould and nothing in this report confers or purports to confer on any third party, any benefit or any right to enforce any term of this report pursuant to the Contract (Rights of Third Parties) Act 1999.

2.0 PROPOSED DEVELOPMENT

- 2.1 The proposed development comprises the installation of a modular building that is to be located as indicated on plans prepared by Faithful and Gould, an extract of which is presented on the attached Figure 3.
- 2.2 Whilst the new building will be modular it is understood that the installation is to be considered permanent.
- 2.3 Design is at preliminary stage and the layout may be subject to change.

3.0 GENERAL DESCRIPTION OF SITE AND SURROUNDING AREA

- 3.1 The school is located on in Hassocks to the south of Dale Avenue and east of Windmill Avenue as indicated on Figure 1. The National Grid Reference for the site is TQ 30983 15189 approximately and the nearest postcode is BN6 8LP.
- 3.2 The site comprises a community garden area located between existing school buildings and with a hard play area to the north. The garden comprises a mix of planted areas, grass and paving. There is a large beech hedge along the northern edge of the site and an unidentified tree at the west end. The layout is indicated on the topographic survey drawing presented by Laser Survey Ltd, an extract of which is included as Figure 2.
- 3.3 Ground levels across the site fall slightly to the north towards the hard play area that appears to have been terraced into the natural slope by cut / fill. By reference to the topographic survey the site levels fall from +50.0m along the southern edge to +49.1m above Ordnance Datum (AOD).
- 3.4 Underground services were also surveyed by Laser Surveys Ltd, including a GPR survey and are recorded on the survey drawings. Services recorded beneath the site include foul drainage, surface water drainage, telecoms and electricity. By reference to record drawings held by the school it appears there may also be a gas supply across the west end of the site that was not recorded by the survey.

4.0 GEOLOGY

- 4.1 The 1:50,000 British Geological Survey of England and Wales Sheet 318/333 Brighton and Worthing” dated 2006 indicates Gault Clay to the south of the site and older Folkestone Formation, of the Lower Greensand, to the north. The geology dips to the south and the mapped boundary between these strata runs east to west through the site.
- 4.2 The Folkestone Formation is recorded to comprise mainly fine to medium, locally coarse grained sand with some bands of ferruginous corstone.
- 4.3 The mapping does not indicate the presence of any drift deposits on the site but there are patches of Head Deposits shown locally to the east and west.

5.0 DETAILS OF THE GROUND INVESTIGATION

- 5.1 The ground investigation fieldwork comprised the exploratory holes as indicated on Figure 4 and described below. The scope of the investigation was based on the Client's requirements for a preliminary investigation to inform initial design of foundations and drainage for the new building. Locations were selected to be within accessible areas giving reasonable coverage of the site relative to the proposed works.
- 5.2 The fieldwork was carried out during half term to avoid interface with pupils and commenced on 25th October 2022 with the machine excavation of two trial pits, referenced TP1 and TP2 for large scale soakage testing at depths of 0.82m and 1.2m respectively.
- 5.3 A shallow borehole referenced BH3 was excavated to a depth of 3.3m by handheld window sampling in the hard play area north of the trial pits to allow some comparison of the ground profile and install a standpipe. The following day a shallow (1.2m deep) borehole, referenced BH4, was excavated to install a standpipe to monitor for perched groundwater in the vicinity of the soakage test pits.
- 5.4 This was followed on 28 October 2022 by excavation of further boreholes, BH1 and BH2, using a Premier 110 window sampling rig. Undisturbed sampling (UT100) was carried out in clay strata and SPT testing at intervals throughout. These boreholes were both scheduled for a depth of 10m however due to the presence of a dense sand stratum sampling refused at depths of 5.45m and 4.5m respectively. Dynamic probes (DPSH) were driven to refusal at similar depths adjacent to each of these boreholes.
- 5.5 The soakage tests were carried out in general accordance with the BRE 365 test procedure. Results appeared to be influenced by the infiltration of perched groundwater following periods of heavy rain. Due to the relatively low infiltration rates the soakage testing was continued for an extended period however, despite this, due to rainfall, one of the pits, TP2, only drained sufficiently for two fills of the pit rather than the required 3 fills. The pits were subsequently backfilled and site cleared on 19 November 2022. Results are appended.
- 5.6 Groundwater level monitoring was carried out during the extended soakage test period with the assistance of the school's premises manager and team. The results of the monitoring are appended.

- 5.7 In situ hand shear vane tests were conducted at shallow depth within the trial pits and on extracted window samples.
- 5.8 The exploratory holes were logged in general accordance with BS5930 Code of Practice for Site Investigation. The sampling referencing and the results of the in situ testing are presented on the appended logs.
- 5.9 Water and soil samples from the exploratory holes were sent for laboratory testing including moisture content, Atterberg Limits (Plasticity), pH, Sulphates, undrained strength of clay samples (quick undrained triaxial tests). Results of the tests are appended.
- 5.10 Samples from shallow depth were sent for contamination screening. Results also appended.

6.0 GROUND AND GROUNDWATER CONDITIONS

6.1 Descriptions of the soils encountered are presented on the attached exploratory hole logs. The findings can be summarised as follows:

Strata	Thickness (m)	Depth to base of strata (m bgl)
TOPSOIL and MADE GROUND	0.25 – 0.45	0.25 – 0.45
Firm silty CLAY ... becoming ...	1.15 – 1.35	1.5 – 1.70
Sandy silty CLAY with some sand inclusions and laminations. Recovered as firm and soft to firm. Locally some angular flint gravel at base of stratum	1.1 – 2.35	3.0 – 4.0
Dense slightly silty fine to medium SAND	> 0.2 – 1.45	> 3.3 – 5.45

6.2 SPT tests recorded N values of 5 to 16 within the clay and sandy clay strata. The higher value corresponding to the sand strata. Within the underlying sand the SPT results were higher and N values were recorded 28 and >50.

6.3 Groundwater was observed in the sand strata during excavation of each of the deeper boreholes, BH1 to BH3. During monitoring of groundwater level between 25 October and 19 November 2022 significant rainfall influence was observed and the highest recorded water levels were at depths of 0.245m and 0.15m in BH3 and BH4 respectively (48.755m and 49.250m AOD). During the same period BH1 rose to a highest level of 2.80m bgl (46.80m AOD). It appears that whilst the underlying groundwater level may be lower, some of the boreholes were influenced by perched groundwater. A copy of the monitoring record is appended.

6.4 The soakage test results for TP1 and TP2 are appended and a summary is presented in the table below:

Trial Pit	Pit Dimensions LxWxD (metres)	Test No.	Water Level at start of test (mm below ground level)	Duration of test (mins)	Fall of water level during test (mm)	Infiltration Coefficient (m/s)
TP1	0.30 x 1.1 x 0.82	1	100	2674	655	8.34×10^{-7}
		2	265	1912	440	9.35×10^{-7}
		3	310	19700	490	7.10×10^{-7}
TP2	0.3 x 1.05 x 1.2	1	130	8884	820	2.16×10^{-7}
		2	380	31000	170	* 2.20×10^{-7}

Notes:

1. Some tests influenced by infiltration following rainfall.
 2. Infiltration Coefficient marked * is based on projected results
- 6.5 Laboratory testing recorded plasticity index ranging from 19 to 35% and shows a general reduction in plasticity with depth that is consistent with an observed increase in sand content with the sample taken from below a depth of 2m recording a plasticity index of 19%.
- 6.6 Quick undrained triaxial tests were carried out on four thin wall tube samples taken from BH1 and BH2 at depths between 1.2m and 2.45m. Undrained strengths ranged from 45 to 79kPa.
- 6.7 Samples taken from soils at 0.5 to 3.0m in BH1 and TP2 recorded pH 7.9 – 8.0 and 2:1 water soluble sulphate <0.01 to 0.03g/L (SO₄). A water sample from BH2 recorded pH 7.37 and sulphate (SO₄) 73mg/l
- 6.8 Copies of the laboratory test results are appended.

7.0 DISCUSSION AND RECOMMENDATIONS

7.1 Ground and groundwater conditions

7.1.1 Ground conditions revealed by this investigation appear to generally confirm the anticipated geology and comprise clays and sandy clays at the base of the Gault Clay above sand strata of the Folkestone Formation.

7.1.2 Highest groundwater level recorded during the short period of monitoring was at 0.15m below ground level (bgl). This appeared to reflect the presence of groundwater perched above the shallow clays and influenced by the rainfall during the monitoring period. One of the standpipes, BH2, that extended to the sand stratum recorded highest groundwater level 2.8m bgl.

7.1.3 It should be assumed that there will be seasonal variation of the groundwater level and it should be expected to rise in response to rain. The installed standpipes will allow ongoing monitoring of the groundwater levels to investigate these effects and this is recommended.

7.2 Foundations and Floor Slabs

7.2.1 The observations made during this investigation indicate that near surface firm clay and firm / soft to firm sandy clay appear suitable founding strata. Consideration will need to be given to the shrinkage potential of the clay and possible influence of trees and other significant vegetation around the site. Full details of the vegetation will be required to inform the design and should include information on any vegetation that has been removed in recent years as well as proposed planting.

7.2.2 It is recommended that foundation depths and detailing are in accordance with current NHBC guidance for building near trees. Based on the recorded plasticity index range of 19 to 35% for the clay strata a MEDIUM volume change potential should be assumed for preliminary design. It is noted that the plasticity reduces with depth corresponding to an increase in sand content and based on the lower recorded plasticity index of 19% it is proposed that soils below a depth of 2m may be considered LOW volume change potential. The underlying sand strata may be considered non shrinkable.

-
- 7.2.3 A minimum founding depth of 0.9m should be assumed and it is anticipated this would need to increase in the vicinity of trees. Practicability of excavation to the design depth may be dependent on the groundwater conditions at the time of construction.
- 7.2.4 Given the observed strength profile it is recommended that preliminary design of small pad and strip foundations, up 1.5m and 1.0m wide respectively, founding as described, are based on an allowable bearing pressure of 80kPa. Under such loading it is anticipated that the total foundation settlements would not exceed 25mm; a more detailed assessment of settlement is recommended for larger foundations or elements considered to be particularly sensitive to settlement.
- 7.2.5 It is anticipated that the modular construction will include suspended floor slabs and this would protect against the volume change potential in the near surface clay. Where foundation depths of 1.5m or more would be required to protect against volume change, or where seasonal desiccation of near surface soils at the time of construction presents a potential source of heave, the ground floors should be suspended and the height of any sub floor void should be determined in accordance with the current NHBC guidance allowing for the assumed medium volume change potential in the near surface clays.
- 7.2.6 Should consideration be given to pile foundations extending to the dense sand strata it is recommended that further ground investigation extending to sufficient depth to inform the design by using cable percussive drilling capable techniques.

7.3 **Excavations**

- 7.3.1 Shallow excavations above the water table have a reasonable prospect of the sides standing vertically in the short term but where expected to remain open for any length of time or if greater than 1.2m deep and are to be entered by personnel will need support.
- 7.3.2 Excavations below the groundwater level will require temporary support and the formation, particularly within the sandy clays, should be protected against softening by placing foundation concrete or blinding concrete immediately after excavation. It may be possible to de-water excavations that extend only a little below groundwater level by pumping from sumps within the excavation however deeper excavations, particularly within water bearing sands and sandy clays may be problematic and require specialist dewatering techniques. Groundwater levels should be expected to vary seasonally and in response to rainfall.

7.4 **Drainage**

- 7.4.1 Given the relatively low permeability of the surface strata and observed presence of perched groundwater, it is anticipated that infiltration drainage may not be viable. Based on the results of the soakage testing, infiltration coefficients of 7.1×10^{-7} m/s and 2.2×10^{-7} m/s are recommended for initial assessment.
- 7.4.2 Whilst the geological mapping would suggest the presence of sand strata at shallower depth to the north of the site, BH3 has indicated a similar ground profile to the location of the soakage tests. Further north it is anticipated there will be a thickness of fill material used to terrace for the hard play area.
- 7.4.3 Ongoing groundwater level monitoring may further inform drainage design and establish an appropriate maximum depth for soakaways.

7.5 **Underground Services**

- 7.5.1 Laser Surveys Ltd have carried out a services scan of the site and recorded various underground services in and around the location of the proposed building. All available information on the location of underground services should be gathered prior to further excavation of the site. As noted earlier in this report, the record drawings held by the school indicate a possible gas connection beneath the west end of the site that was not picked up by the survey. Works to locate the connection are recommended.
- 7.5.2 Any redundant drainage pipework and chambers should be removed or properly filled / grouted. Any soakaways serving the existing surface water and roof drains should be located to establish if they will impact on the foundation design.
- 7.5.3 The presence of land drains should be anticipated and where encountered during excavation and construction they should be diverted around the works to ensure their continued performance.

7.6 **Contamination**

- 7.6.1 Contamination screening results have been compared against the C4SL and XS4UL levels. Results of the tests are noted to be below the trigger levels for residential land use with plant uptake indicating they have not identified a risk to the proposed site use.

- 7.6.2 It is noted that a full contamination assessment has not been carried out and may be required by the Regulatory Authorities in connection with this or future development (planning conditions should be checked and addressed).
- 7.6.3 Should any suspect materials be exposed during construction, further assessment would be required and any suspect materials should be sampled and analysed and the risks assessed.
- 7.6.4 Normal precautions should be taken to protect workers during construction.
- 7.6.5 Testing may be required to assist with assessment and characterisation of waste for disposal that should be carried out in accordance with the Duty of Care for Waste. Disposal of waste soil will need to comply with the requirements of the waste disposal company and may need to be assessed with regard to Waste Acceptance Criteria for the various classes of landfill and specific to the disposal site.

7.7 **Other matters**

7.7.1 Radon

By reference to the Building Research Establishment (BRE) guidance on radon risk contained in the report BR211 (2007) and UK Radon Map online it is noted that the site is not within an area where residential development requires radon protective measures.

7.7.2 Concrete

To assist further with concrete specification, based on the results of the water soluble sulphate and pH results for the soil samples (pH = 7.9 – 8.0 and max sulphate <0.01 to 0.03 g/L (SO₄)) and for the water sample (pH 7.7 and sulphate 73 mg/l (SO₄)) the characteristic Design Sulphate Class is DS-1 and the Aggressive Chemical Environment for Concrete (ACEC) is classified as class AC-1.

PROJECT: Downlands School, Hassocks

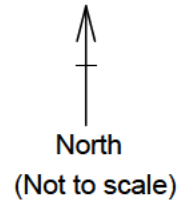
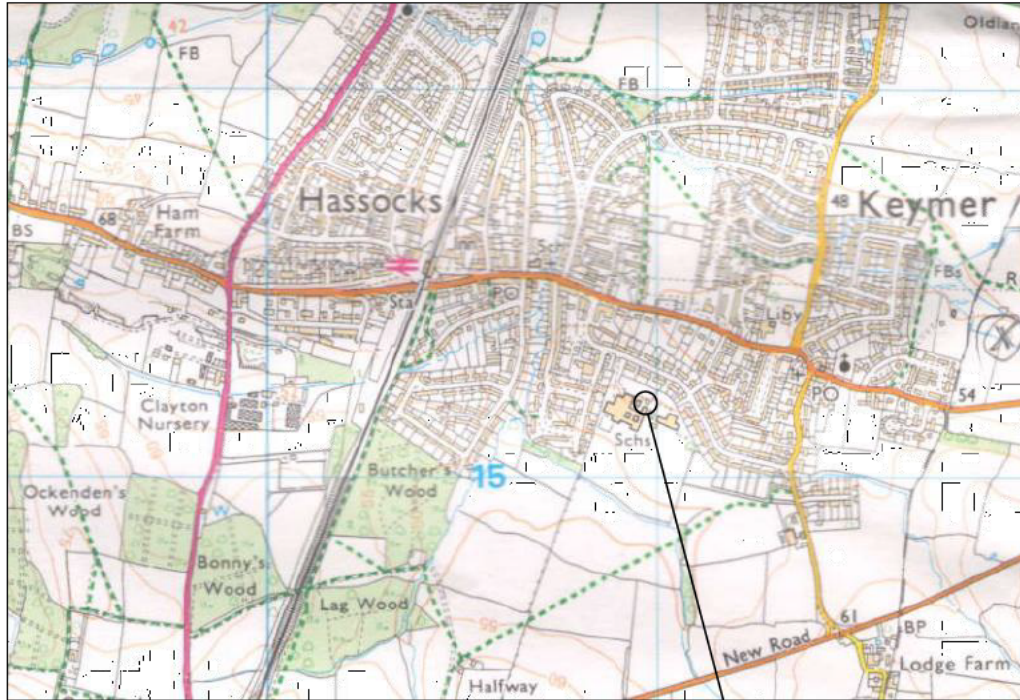
PREPARED: AJHT

SECTION: Proposed Modular Building - Ground Investigation

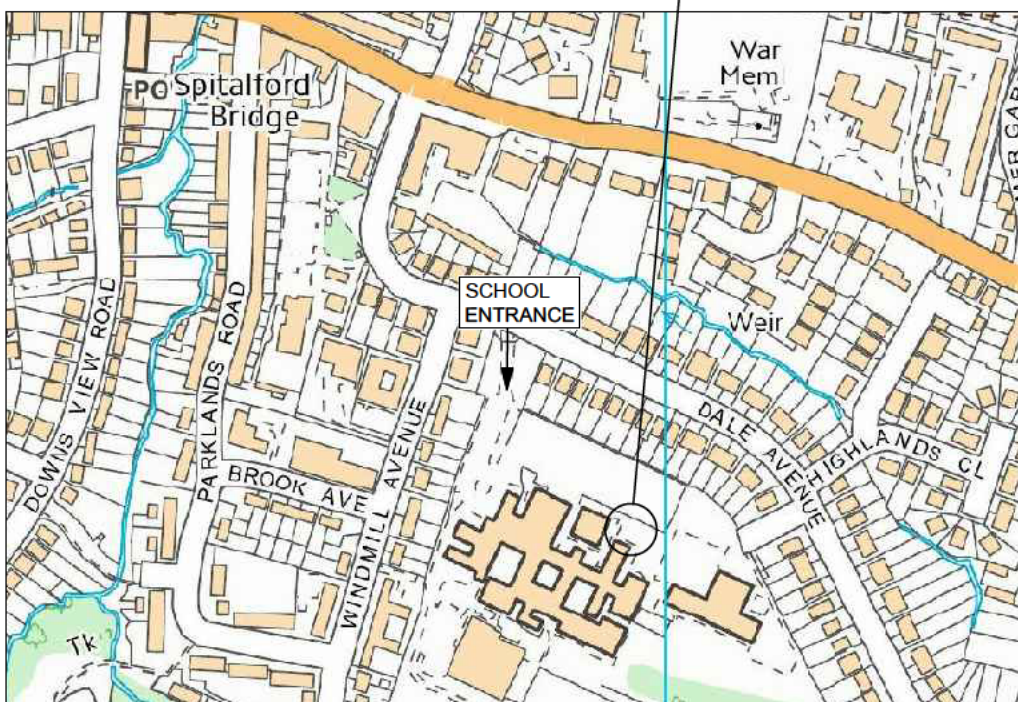
CHECKED: AJHT

TITLE: Site Location Plan

DATE: October 2022



Site Location



PROJECT: Downlands School, Hassocks

PREPARED: AJHT

SECTION: Proposed Modular Building - Ground Investigation

CHECKED: AJHT

TITLE: Existing Site Layout

DATE: October 2022



PROJECT: Downlands School, Hassocks

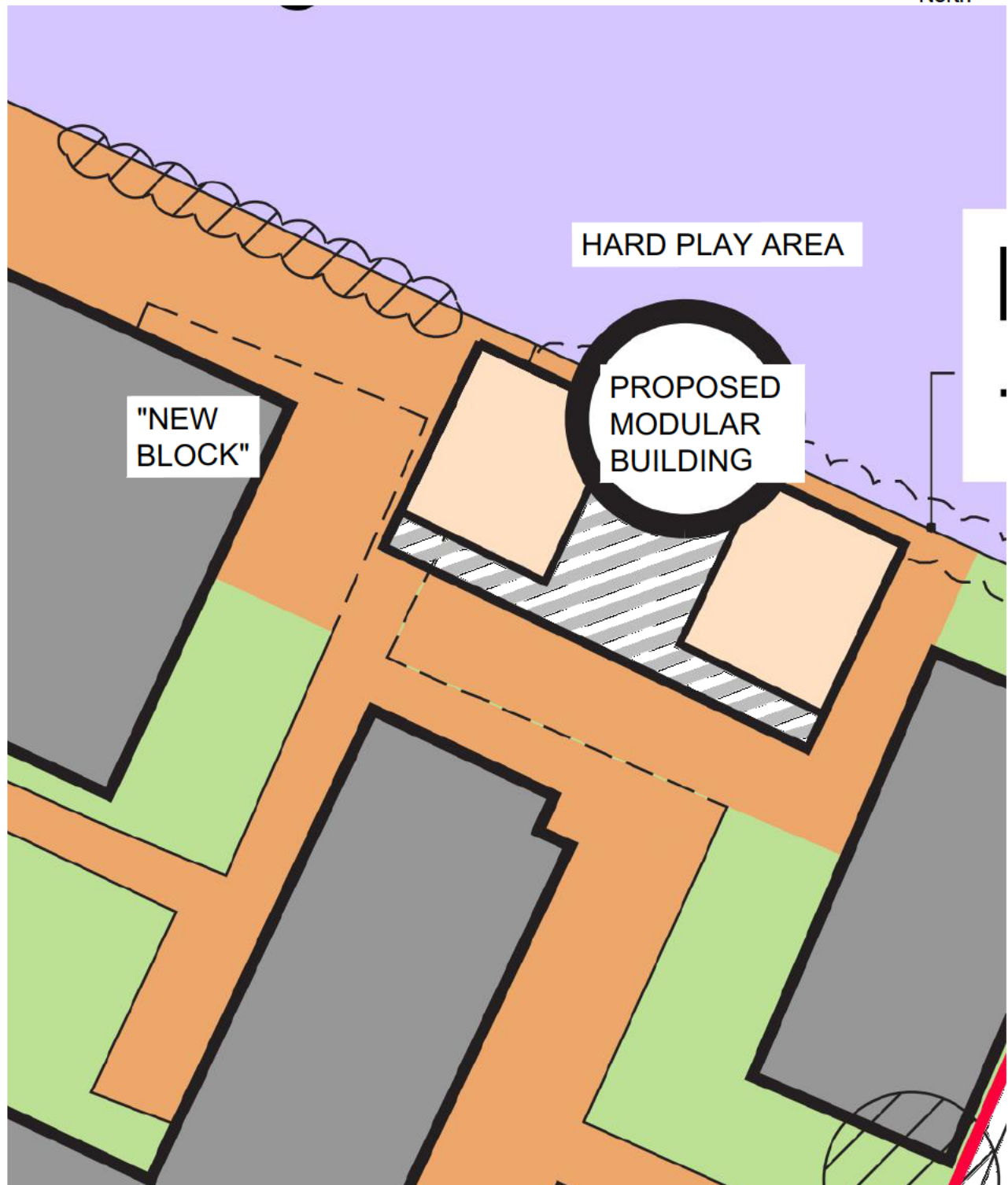
PREPARED: AJHT

SECTION: Proposed Modular Building - Ground Investigation

CHECKED: AJHT

TITLE: Proposed Development

DATE: October 2022



PROJECT: Downlands School, Hassocks

PREPARED: AJHT

SECTION: Proposed Modular Building - Ground Investigation

CHECKED: AJHT

TITLE: Exploratory Hole Location Plan

DATE: October 2022

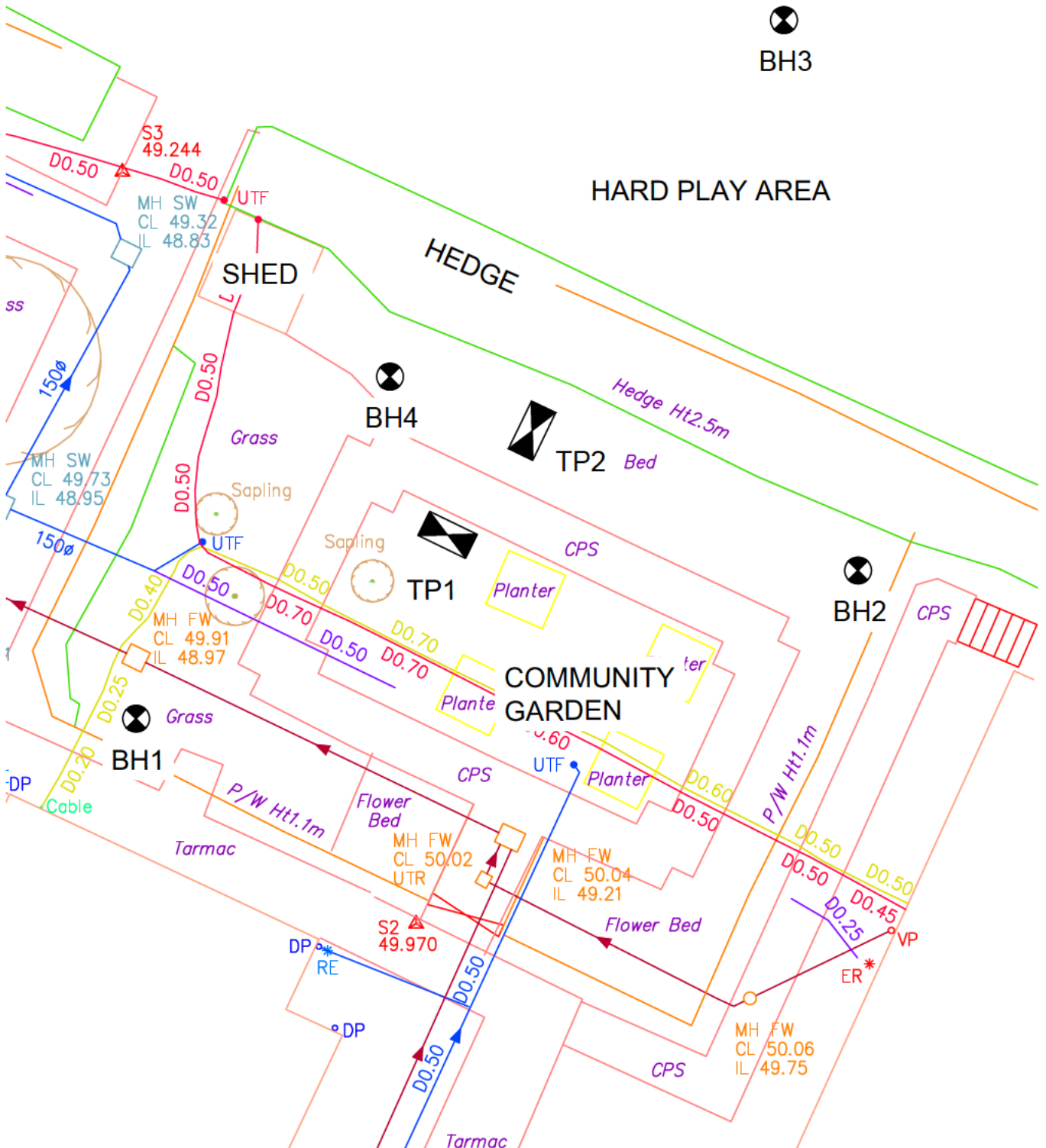
HOLE LOCATIONS ARE INDICATIVE ONLY UNLESS DIMENSIONED

North
(Approx)



BH3

HARD PLAY AREA



Ground Management Ltd

Civil and Geotechnical Engineering Services

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mail@groundmanagement.com

Site
Downlands School, Hassocks

Number
BH1

Excavation Method Hand dig inspection pit to 1.2m then window sample using Premier 110 rig	Dimensions 117mm to 4.00m 102mm to 4.70m 58mm to 5.20m	Ground Level (mOD) 49.87	Client Faithful and Gould	Job Number G6523
	Location See Location Plan	Dates 28/09/2022	Engineer HOP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10-0.20	D			49.42	(0.45) 0.45	Grass over moist brown slightly sandy slightly clayey silt with occasional medium and fine angular flint gravel. Rare brick and concrete fragment and short piece wire. TOPSOIL / MADE GROUND		
1.00	D				(1.20)	Firm brown and orange brown mottled pale grey brown silty CLAY		
1.20-1.65	U		17 blows					
1.65	S			48.22	1.65	Recovered as firm and soft to firm becoming soft mottled orange brown and pale grey brown sandy CLAY with small pockets / inclusions (<10mm) and laminations of slightly silty fine to medium sand		
1.70-2.15	SPT N=6		1,1/1,1,2,2					
1.80-2.00	D							
2.00-2.45	U		41 blows					
2.50-2.95	SPT N=5							
2.50-3.00	S		1,1/1,1,1,2					
2.80-3.00	D				(2.35)			
3.00-3.45	SPT N=5							
3.00-3.45	S		0,0/1,1,1,2					
3.80-4.00	D							
4.00-4.45	SPT N=28			45.87	4.00	Moist yellow brown slightly silty fine to medium SAND with a little coarse medium and fine angular flint gravel		
4.00-4.45	S		5,5/5,6,7,10	45.67	(0.20) 4.20			
4.50-4.70	D				(1.25)	Moist yellow brown, orange brown and red brown slightly silty fine to medium SAND		
5.00-5.25	CPT 50/95							
5.00-5.20	D		10,15/23,27	44.42	5.45	Complete at 5.45m		

Remarks Slight seepage after removal of sample from 4m. Then moderate seepage after removal of subsequent samples. Water rose to 3.60m bgl in 4hrs. Some instability of borehole within water bearing sands. Hole collapsed below 4.5m Sampler refused at 5.45m. 50mm dia standpipe installed to 4.5m on completion - 4m slotted with geosoc and gravel surround, 0.5m bentonite seal and flush cover Ground level estimated by reference to Laser Surveys survey dated Oct 2022	Scale (approx)	Logged By
	1:40	AT
Figure No.		G6523.BH1

Ground Management Ltd

Civil and Geotechnical Engineering Services

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Site
Downlands School, Hassocks

Number
BH2

Excavation Method Hand dig inspection pit to 1.2m then window sample using Premier 110 rig	Dimensions 117mm to 3.00m 102mm to 4.50m	Ground Level (mOD) 49.60	Client Faithful and Gould	Job Number G6523
	Location See Location Plan	Dates 28/09/2022	Engineer HOP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.15-0.25	D			49.25	(0.35) 0.35	Moist brown slightly sandy slightly clayey silt with occasional coarse medium and fine angular flint gravel and brick fragments. TOPSOIL / MADE GROUND		
1.00	D					Firm orange brown mottled grey brown silty CLAY. Occasional fine root.		
1.20-1.65	U		42 blows		(1.95)	... with a little fine to medium sand below 1.5m		
1.65	S							
1.70-2.15	SPT N=7		1,1/1,2,2,2					
1.80-2.00	D							
2.00-2.45	U		31 blows					
2.43	W			47.30	2.30	Recovered as firm and soft to firm mottled orange brown and pale grey brown sandy (fine and medium) silty CLAY with some sand laminations / inclusions (<10mm)		
2.50-2.95	SPT N=13		2,2/2,2,4,5					
2.50-2.95	S							
2.80-3.00	D				(1.10)			
3.00-3.45	SPT N=16		1,1/1,5,5,5					
3.00-3.45	S			46.20	3.40	Moist yellow brown and red brown slightly silty medium SAND		
3.80-4.00	D							
4.00-4.36	CPT 50/210		9,15/17,26,7		(1.10)			
4.00-4.50	D			45.10	4.50	Complete at 4.50m		

Remarks Slight seepage after removal of sample from 4m. Then moderate seepage after removal of subsequent sample. Water rose to 3.30m bgl in 2hrs. Some instability of borehole within water bearing sands. Hole collapsed below 4m. Sampler refused at 4.5m. 50mm dia standpipe installed to 4.5m on completion - 4m slotted with geosoc and gravel surround, 0.5m bentonite seal and flush cover. Ground level estimated by reference to Laser Surveys survey dated Oct 2022	Scale (approx)	Logged By
	1:40	AT
	Figure No. G6523.BH2	

Ground Management Ltd

Civil and Geotechnical Engineering Services

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Site
Downlands School, Hassocks

Number
BH3

Excavation Method Breakout to 0.35m then hand held window sampling	Dimensions 80mm to 1.20m 60/50 to 2.35m 3.3m to 40.00m	Ground Level (mOD) 49.00	Client Faithful and Gould	Job Number G6523
	Location See Location Plan	Dates 25/09/2022	Engineer HOP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.14-0.35	D			48.86	0.14 (0.21)	Bituminous surfacing MADE GROUND		
				48.65	0.35	MADE GROUND of compact brick rubble with some silty sand, ash and clinker		
0.50-0.80	D		HV at 0.6m : 55, 55, 55 kPa	48.55	0.45 (0.10)	Compact chalk fill comprising mainly coarse subangular gravel of medium density off white chalk. MADE GROUND		
0.80-1.20	D		HV at 1.1m : 50, 50, 60 kPa		(1.25)	Firm yellow brown and pale grey brown silty CLAY		
			HV at 1.5m : 50, 65, 60 kPa					
1.70-2.00	D		HV at 2.0m : 55, 50, 55 kPa	47.30	1.70	Firm yellow brown and pale grey brown silty CLAY with ... occasional fine and medium sand laminations below 1.7m		
					(1.40)	occasional fine to medium sand inclusions and laminations		
						... with a little medium and fine angular flint gravel below 3.0m		
3.10-3.30	D			45.90	3.10 (0.20)	Moist orange brown slightly silty medium SAND		
				45.70	3.30	Complete at 3.30m		

Remarks Slight seepage after removal of sample from 3.3m. Water rose to 2.79m bgl in 3hrs. 19mm dia standpipe installed on completion - 2m slotted and 1.3m plain. Flush cover Ground level estimated by reference to Laser Surveys survey dated Oct 2022	Scale (approx)	Logged By
	1:40	AT
	Figure No. G6523.BH3	

Ground Management Ltd

Civil and Geotechnical Engineering Services

Robin Hill Farm Clay Lane Fishbourne
CHICHESTER West Sussex PO18 8AB
Phone/Fax: 01243 575073
mail@groundmanagement.com

Site
Downlands School, Hassocks

Number
BH4

Excavation Method Hand auger (75mm dia.)	Dimensions 75mm to 1.20m	Ground Level (mOD) 49.40	Client Faithful and Gould	Job Number G6523
	Location See Location Plan	Dates 26/09/2022	Engineer HOP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10-0.25	D			49.15	(0.25) 0.25	Wood chip on geotextile over moist brown slightly sandy slightly clayey silt with a little medium and fine flint gravel and brick fragment. Occasional fine root up to 1mm dia. TOPSOIL / MADE GROUND		
0.40-0.70	D				(0.95)	Firm yellow brown mottled orange brown and pale grey silty CLAY. Occasional fine rootlet.		
1.00-1.20	D			48.20	1.20	Complete at 1.20m		

Remarks Borehole remained stable and open during excavation 19mm dia standpipe installed on completion - 0.6m slotted with geosoc and gravel surround up to 0.4m bentonite pellet seal to gl. Ground level estimated by reference to Laser Surveys survey dated Oct 2022	Scale (approx)	Logged By
	1:40	AT
	Figure No. G6523.BH4	

Ground Management Ltd


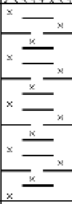
Civil and Geotechnical Engineering Services


Robin Hill Farm Clay Lane Fishbourne
CHICHESTER West Sussex PO18 8AB
Phone/Fax: 01243 575073
mail@groundmanagement.com

Site
Downlands School, Hassocks

Trial Pit
Number
TP1

Excavation Method Machine excavated using Takeuchi TB215	Dimensions 0.3m x 1.1m	Ground Level (mOD) 49.70	Client Faithful and Gould	Job Number G6523
	Location See Location Plan	Dates 25/10/2022	Engineer HOP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	D1			49.40	0.30	Grass over slightly moist brown slightly sandy slightly clayey silt with occasional coarse medium and fine angular flint gravel, locally some ash. TOPSOIL, locally reworked / MADE GROUND		
0.60	D2		HV at 0.4m : 85, 85, 70 kPa	48.88	0.52	Firm brown becoming orange brown mottled pale grey brown silty CLAY		
			HV at 0.8m : 65, 90, 75 kPa		0.82	Complete at 0.82m		

Plan 	Remarks Pit sides stable and vertical during excavation Slight seepage from base of pit Ground level estimated by reference to Laser Surveys survey dated Oct 2022		
	Scale (approx) 1:20	Logged By AT	Figure No. G6523.TP1

Ground Management Ltd


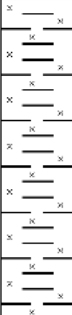

Civil and Geotechnical Engineering Services


Robin Hill Farm Clay Lane Fishbourne
CHICHESTER West Sussex PO18 8AB
Phone/Fax: 01243 575073
mail@groundmanagement.com

Site
Downlands School, Hassocks

Trial Pit Number
TP2

Excavation Method Machine excavated using Takeuchi TB215	Dimensions 0.3m x 1.05m	Ground Level (mOD) 49.50	Client Faithful and Gould	Job Number G6523
	Location See Location Plan	Dates 25/10/2022	Engineer HOP	Sheet 1/1



Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	D1				(0.35)	Wood chip on geotextile over slightly moist brown slightly sandy (fine) slightly clayey silt with a little gravel size flint, brick and chalk. TOPSOIL / MADE GROUND. Many roots up to 3mm dia.		
0.50	D2		HV at 0.6m : 80, 85, 80 kPa	49.15	0.35	... cobble size lump of concrete at 0.3m Firm orange brown mottled pale grey brown silty CLAY. Occasional fine rootlet.		
1.00	D3		HV at 1.2m : 80, 75, 80 kPa	48.30	1.20	Complete at 1.20m		

Plan 	Remarks Pit sides stable and vertical during excavation Slight seepage from below 1.1m - sufficient to fill bucket teeth marks after 1hr. Ground level estimated by reference to Laser Surveys survey dated Oct 2022		
	Scale (approx) 1:20	Logged By AT	Figure No. G6523.TP2

SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression			Chemical Tests			Other tests and comments	
Location	Depth (m)	Sample Ref	Type	Description	WC %	LL %	PL %	PI %	<425 µm %	Bulk Mg/m³	Dry Mg/m³	Condition	Cell Pressure kPa	Deviator Stress kPa	Shear Stress kPa	pH	2:1 W/S SO4 g/L		W/S Mg mg/L
BH1	1.00		D	Brown and brownish grey mottled slightly sandy silty CLAY with rare fine gravel.	26.4	54	19	35	99										
BH1	1.20-1.65		U100	Stiff brown mottled grey silty CLAY.	24.6					2.05	1.65	Undisturbed	30	159	79				
BH1	1.80-2.00		D	Brown and grey mottled sandy silty CLAY with rare fine gravel. Sand is fine.	21.9	35	15	20	99										
BH1	2.00-2.45		U100	Firm brown CLAY.	19.2					2.17	1.82	Undisturbed	50	90	45				
BH1	2.80-3.00		D	Brown sandy silty CLAY.	21.1	34	15	19	97							7.9	< 0.010		Particle Size Distribution
BH1	4.50-4.70		D	Orangish brown SAND.															Particle Size Distribution
BH2	1.00		D	Brown and grey mottled slightly sandy silty CLAY with rare fine gravel.	24.6	44	17	27	99										
BH2	1.20-1.65		U100	Firm brown mottled grey silty CLAY.	25.0					2.11	1.69	Undisturbed	30	91	46				
BH2	1.80-2.00		D	Brown, dark grey and grey mottled slightly sandy silty CLAY with rare gravel.	21.0	38	16	22	99										
BH2	2.00-2.45		U100	Firm brown silty CLAY.	24.2					2.10	1.69	Undisturbed	50	129	65				



Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed)

Checked and Approved by  S Burke - Senior Technician 22/11/2022	Project Number: GEO / 36774 Project Name: DOWNLANDS SCHOOL, HASSOCKS G6523	
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SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression			Chemical Tests			Other tests and comments	
Location	Depth (m)	Sample Ref	Type	Description	WC %	LL %	PL %	PI %	<425 µm %	Bulk Mg/m³	Dry Mg/m³	Condition	Cell Pressure kPa	Deviator Stress kPa	Shear Stress kPa	pH	2:1 W/S SO4 g/L		W/S Mg mg/L
TP2/3	1.00		D	Brown and brownish grey mottled slightly sandy silty CLAY with rare fine gravel.	27.6	49	16	33	99										

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed)

Checked and Approved by  S Burke - Senior Technician 22/11/2022	Project Number: <p style="text-align: center;">GEO / 36774</p> Project Name: <p style="text-align: center;">DOWNLANDS SCHOOL, HASSOCKS G6523</p>	
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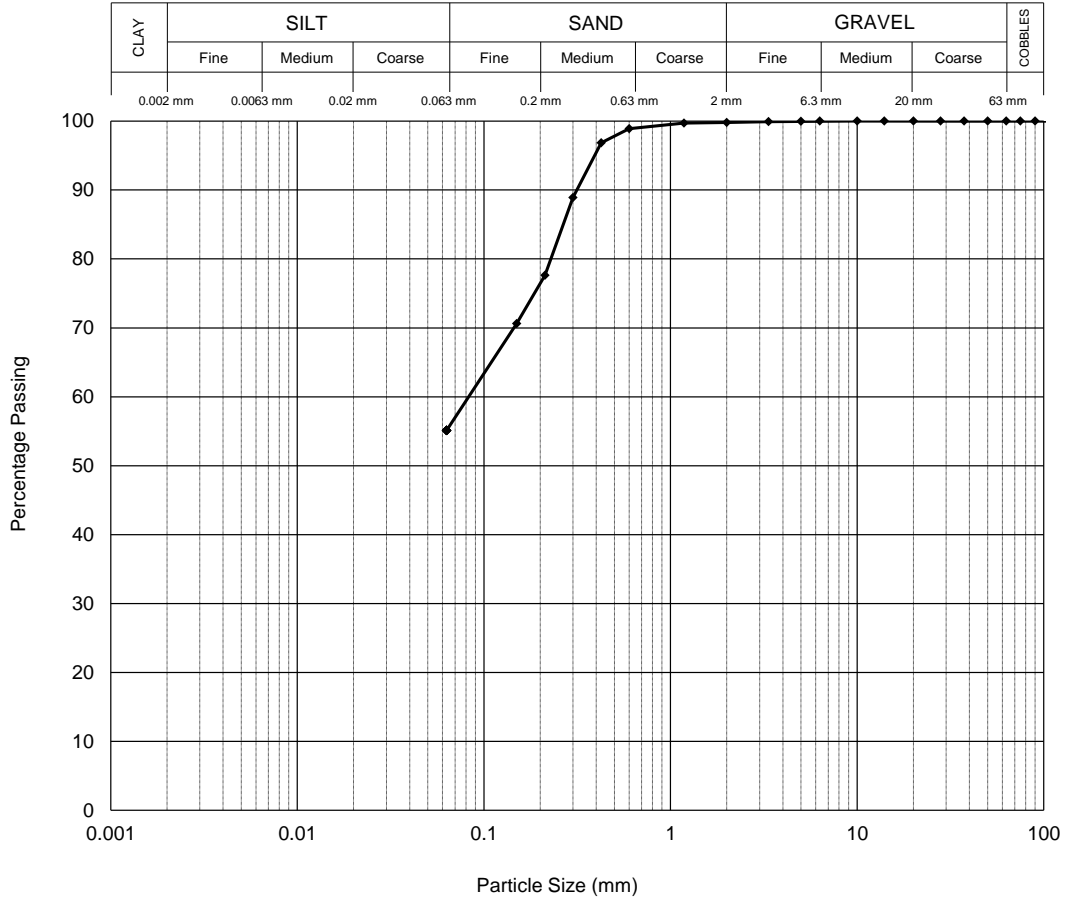
PARTICLE SIZE DISTRIBUTION

Location: BH1
 Depth (m): 2.80-3.00
 Sample Type: D

Description: Brown sandy silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve


Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	97
300 µm	89
212 µm	78
150 µm	71
63 µm	55



Particle Proportions	
Cobbles	0.0
Gravel	0.2
Sand	44.7
Silt & Clay	55.1

1262 - PSD BH1 02.80 D Test WS - 36774-462757.XLSM

GL Version 114 220920-1262

Tested by AW
 Checked and Approved by

 S Burke - Senior Technician
 22/11/2022

Project Number:

GEO / 36774

Project Name:

**DOWNLANDS SCHOOL, HASSOCKS
 G6523**



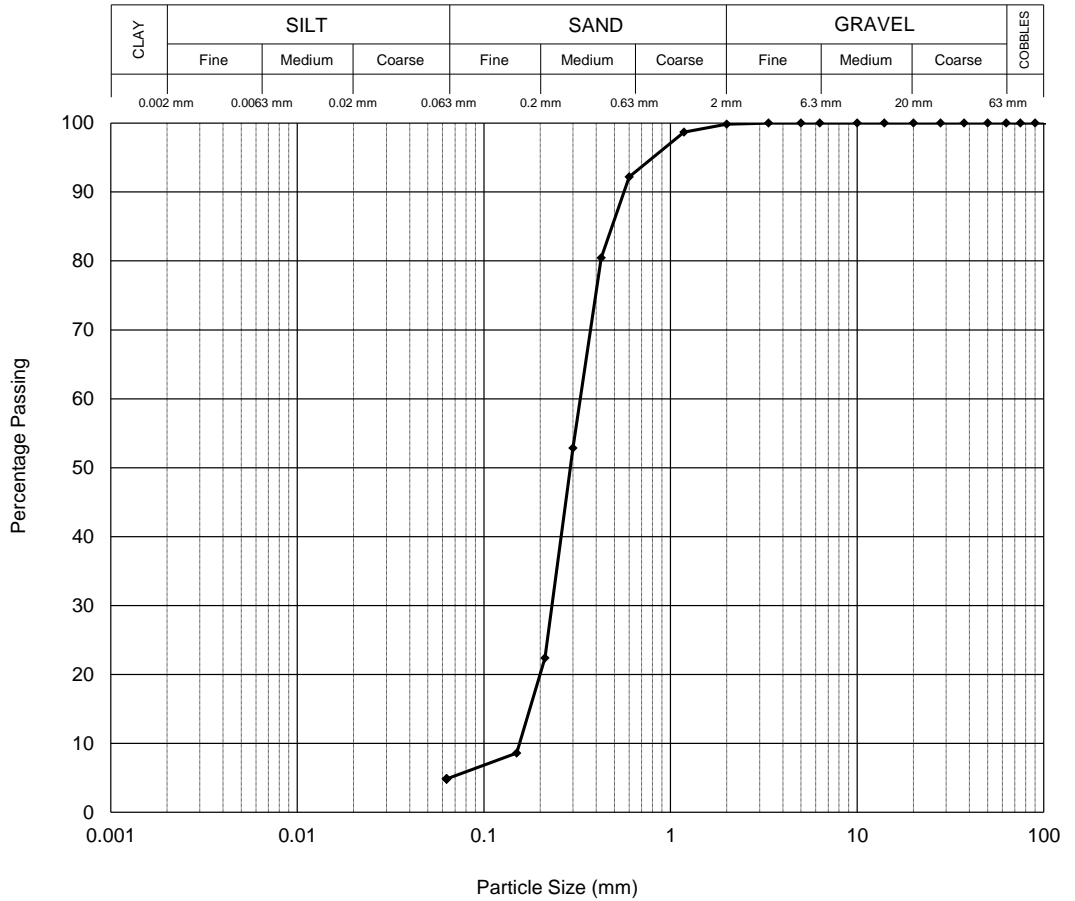
PARTICLE SIZE DISTRIBUTION

Location: BH1
 Depth (m): 4.50-4.70
 Sample Type: D

Description: Orangish brown SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve


Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	92
425 µm	80
300 µm	53
212 µm	22
150 µm	9
63 µm	5



Particle Proportions	
Cobbles	0.0
Gravel	0.1
Sand	95.0
Silt & Clay	4.9

1262 - PSD BH1 04.50 D Test WS - 36774-462749.XLSM

GL Version 114 220920-1262

Tested by AW
 Checked and Approved by

 S Burke - Senior Technician
 22/11/2022

Project Number:

GEO / 36774

Project Name:

**DOWNLANDS SCHOOL, HASSOCKS
 G6523**



UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION

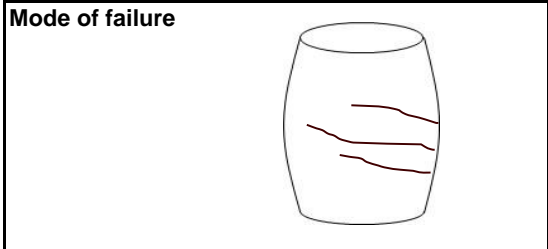
Location	BH1
Depth (m)	1.20-1.65
Sample Type	U100

Description:
Stiff brown mottled grey silty CLAY.

Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	201.3
Diameter	(mm)	101.7
Moisture content	(%)	24.6
Bulk density	(Mg/m ³)	2.05
Dry density	(Mg/m ³)	1.65
Test Details		
Latex membrane thickness	(mm)	0.3
Specimen height prior to shearing	(mm)	201.3
Membrane correction	(kPa)	1.1
Mean rate of shear	(%/min)	2.0
Cell pressure	(kPa)	30
Strain at failure	(%)	19.9
Maximum deviator stress	(kPa)	159
Shear Stress Cu	(kPa)	79

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	30

Tested by WS
Checked and Approved by
S Burke
S Burke - Senior Technician
22/11/2022

Project Number: **GEO / 36774**
Project Name: **DOWNLANDS SCHOOL, HASSOCKS G6523**



UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION

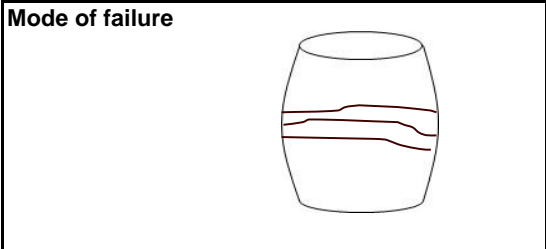
Location	BH1
Depth (m)	2.00-2.45
Sample Type	U100

Description:
Firm brown CLAY.

Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	201.7
Diameter	(mm)	101.4
Moisture content	(%)	19.2
Bulk density	(Mg/m ³)	2.17
Dry density	(Mg/m ³)	1.82
Test Details		
Latex membrane thickness	(mm)	0.3
Specimen height prior to shearing	(mm)	201.6
Membrane correction	(kPa)	1.1
Mean rate of shear	(%/min)	2.0
Cell pressure	(kPa)	50
Strain at failure	(%)	19.8
Maximum deviator stress	(kPa)	90
Shear Stress Cu	(kPa)	45

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	80

Tested by WS
Checked and Approved by
S Burke
S Burke - Senior Technician
22/11/2022

Project Number: **GEO / 36774**
Project Name: **DOWNLANDS SCHOOL, HASSOCKS G6523**



UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION

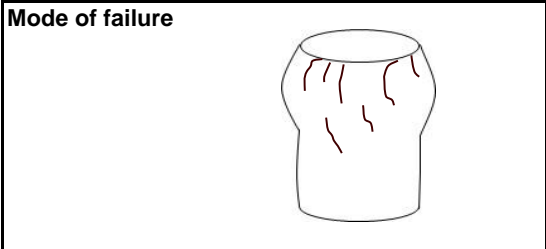
Location	BH2
Depth (m)	1.20-1.65
Sample Type	U100

Description:
Firm brown mottled grey silty CLAY.


Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	201.7
Diameter	(mm)	102.0
Moisture content	(%)	25.0
Bulk density	(Mg/m ³)	2.11
Dry density	(Mg/m ³)	1.69
Test Details		
Latex membrane thickness	(mm)	0.3
Specimen height prior to shearing	(mm)	201.6
Membrane correction	(kPa)	1.1
Mean rate of shear	(%/min)	2.0
Cell pressure	(kPa)	30
Strain at failure	(%)	19.8
Maximum deviator stress	(kPa)	91
Shear Stress Cu	(kPa)	46

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	60

Tested by WS Checked and Approved by  S Burke - Senior Technician 22/11/2022

Project Number: <p style="text-align: center;">GEO / 36774</p> Project Name: <p style="text-align: center;">DOWNLANDS SCHOOL, HASSOCKS G6523</p>
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UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION

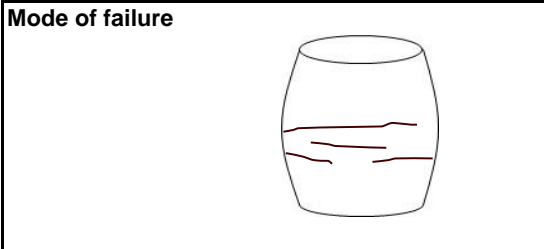
Location	BH2
Depth (m)	2.00-2.45
Sample Type	U100

Description:
Firm brown silty CLAY.

Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	202.0
Diameter	(mm)	100.3
Moisture content	(%)	24.2
Bulk density	(Mg/m ³)	2.10
Dry density	(Mg/m ³)	1.69
Test Details		
Latex membrane thickness	(mm)	0.3
Specimen height prior to shearing	(mm)	202.0
Membrane correction	(kPa)	1.1
Mean rate of shear	(%/min)	2.0
Cell pressure	(kPa)	50
Strain at failure	(%)	19.8
Maximum deviator stress	(kPa)	129
Shear Stress Cu	(kPa)	65

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	95

Tested by WS
Checked and Approved by
S Burke
S Burke - Senior Technician
22/11/2022

Project Number:
GEO / 36774

Project Name:
**DOWNLANDS SCHOOL, HASSOCKS
G6523**



SUMMARY OF CHEMICAL TESTS ON SOIL

Location	Depth m	Sample Ref	Sample Type	pH Value	Sulphate mg/l	Water Soluble Sulphate as SO4 2:1 Water:Soil Extract g/l	Total Sulphur %	Water Soluble Chloride g/l	Water Soluble Nitrate g/l	Magnesium g/l	Organic Content %	Mass Loss on Ignition %	Carbonate Content %
BH1	2.80-3.00		D	7.9	-	< 0.010	-	-	-	-	-	-	-
BH2	3.27		W	7.7	73	-	-	-	-	-	-	-	-

Tested by Chemtest Ltd : MCERTS / UKAS No 2183

Checked and Approved by: S Burke - Senior Technician 24/11/2022	Project Number: GEO / 36774 Project Name: DOWNLANDS SCHOOL, HASSOCKS G6523	
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Windmill Road
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St Leonards on Sea
East Sussex
TN38 9BY
Telephone: (01424) 718618

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info@elab-uk.co.uk

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 22-44340

Issue: 1

Date of Issue: 07/11/2022

Contact: Alistair Tyler

Customer Details: Ground Management Ltd
Robin Hill Farm
Clay Lane
Chichester
West Sussex PO18 8AB

Quotation No: Q22-02632


Order No: G6523

Customer Reference: G6523

Date Received: 31/10/2022

Date Approved: 07/11/2022

Details: Downlands School, Hassocks

Approved by: 

Tim Reeve, Quality Officer

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

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Sample Summary

Report No.: 22-44340, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
300002	BH1 0.10 - 0.20	26/10/2022	31/10/2022	Sandy silty loam	
300003	BH2 0.15 - 0.25	26/10/2022	31/10/2022	Sandy silty loam	
300004	TP1 0.20	25/10/2022	31/10/2022	Silty loam	
300005	TP2 0.50	25/10/2022	31/10/2022	Silty clayey loam	
300006	TP2 1.00	25/10/2022	31/10/2022	Silty clayey loam	



2683



Results Summary

Report No.: 22-44340, issue number 1

ELAB Reference	300002	300003	300004	300005	300006			
Customer Reference								
Sample ID								
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Location	BH1	BH2	TP1	TP2	TP2			
Sample Depth (m)	0.10 - 0.20	0.15 - 0.25	0.20	0.50	1.00			
Sampling Date	26/10/2022	26/10/2022	25/10/2022	25/10/2022	25/10/2022			
Determinand	Codes	Units	LOD					
Soil sample preparation parameters								
Moisture Content	N	%	0.1	18.8	18.2	17.3	18.4	18.5
Material removed	N	%	0.1	13.8	9.3	5.0	< 0.1	< 0.1
Description of Inert material removed	N		0	Stones	Stones/Wood	Stones	None	None
Metals								
Arsenic	M	mg/kg	1	10.9	13.0	11.4	n/t	n/t
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	n/t	n/t
Chromium	M	mg/kg	5	21.4	21.2	22.4	n/t	n/t
Copper	M	mg/kg	5	38.2	47.3	46.9	n/t	n/t
Lead	M	mg/kg	5	76.7	62.3	63.1	n/t	n/t
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	n/t	n/t
Nickel	M	mg/kg	5	15.5	12.9	14.0	n/t	n/t
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	n/t	n/t
Zinc	M	mg/kg	5	105	85.8	95.4	n/t	n/t
Anions								
Water Soluble Sulphate	M	g/l	0.02	n/t	n/t	n/t	0.03	< 0.02
Inorganics								
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	n/t	n/t
Miscellaneous								
pH	M	pH units	0.1	n/t	n/t	n/t	8.0	7.9



2683



Results Summary

Report No.: 22-44340, issue number 1

ELAB Reference	300002	300003	300004	300005	300006
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	BH1	BH2	TP1	TP2	TP2
Sample Depth (m)	0.10 - 0.20	0.15 - 0.25	0.20	0.50	1.00
Sampling Date	26/10/2022	26/10/2022	25/10/2022	25/10/2022	25/10/2022

Determinand	Codes	Units	LOD					
Polyaromatic hydrocarbons								
Naphthalene GCMS	N	mg/kg	0.01	0.02	< 0.01	0.02	n/t	n/t
Acenaphthylene GCMS	N	mg/kg	0.01	0.02	< 0.01	0.03	n/t	n/t
Acenaphthene GCMS	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	n/t	n/t
Fluorene GCMS	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	n/t	n/t
Phenanthrene GCMS	N	mg/kg	0.01	0.06	0.02	0.08	n/t	n/t
Anthracene GCMS	N	mg/kg	0.01	0.03	< 0.01	0.06	n/t	n/t
Fluoranthene GCMS	N	mg/kg	0.01	0.24	0.05	0.51	n/t	n/t
Pyrene GCMS	N	mg/kg	0.01	0.22	0.05	0.48	n/t	n/t
Benzo(a)anthracene GCMS	N	mg/kg	0.01	0.10	0.02	0.37	n/t	n/t
Chrysene GCMS	N	mg/kg	0.01	0.18	0.04	0.58	n/t	n/t
Benzo(b)fluoranthene GCMS	N	mg/kg	0.01	0.17	0.03	0.54	n/t	n/t
Benzo(k)fluoranthene GCMS	N	mg/kg	0.01	0.20	0.04	0.50	n/t	n/t
Benzo(a)pyrene GCMS	N	mg/kg	0.01	0.16	0.04	0.50	n/t	n/t
Indeno(1,2,3-cd)pyrene GCMS	N	mg/kg	0.01	0.07	0.02	0.24	n/t	n/t
Dibenzo(a,h)anthracene GCMS	N	mg/kg	0.01	0.02	< 0.01	0.10	n/t	n/t
Benzo(g,h,i)perylene GCMS	N	mg/kg	0.01	0.09	0.02	0.28	n/t	n/t
Total PAH(16) GCMS	N	mg/kg	0.04	1.59	0.36	4.29	n/t	n/t



Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards on Sea, East Sussex, TN38 9BY
Tel: +44 (0)1424 718618, Email: info@elab-uk.co.uk, Web: www.elab-uk.co.uk

Results Summary

Report No.: 22-44340, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
300002	0.10 - 0.20	BH1	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
300003	0.15 - 0.25	BH2	Brown sandy soil, stones, organics	No asbestos detected	n/t	n/t	n/t	n/t
300004	0.20	TP1	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44340, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
PAH (GC-MS)	N	As submitted sample	01/11/2022		GC-MS
Hexavalent chromium	N	As submitted sample	01/11/2022	110	Colorimetry
pH	M	Air dried sample	02/11/2022	113	Electromeric
Aqua regia extractable metals	M	Air dried sample	02/11/2022	118	ICPMS
Water soluble anions	M	Air dried sample	01/11/2022	172	Ion Chromatography
Asbestos identification	U	Air dried sample	07/11/2022	280	Microscopy

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44340, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

LOD LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
ELAB are unable to provide an interpretation or opinion on the content of this report.
The results relate only to the sample received.
PCB congener results may include any coeluting PCBs
Uncertainty of measurement for the determinands tested are available upon request
Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

TP1 Test 1

Dimensions (m): width = 0.30 length = 1.10 depth = 0.82

Date	Time	Date and time	Elapsed	Dip
25/10/2022	11:36	25/10/2022 11:36	start	dry
25/10/2022	11:38	25/10/2022 11:38	0	100
25/10/2022	11:45	25/10/2022 11:45	7	130
25/10/2022	12:13	25/10/2022 12:13	35	180
25/10/2022	13:04	25/10/2022 13:04	86	220
25/10/2022	14:12	25/10/2022 14:12	154	260
25/10/2022	15:33	25/10/2022 15:33	235	290
25/10/2022	17:48	25/10/2022 17:48	370	325
26/10/2022	08:25	26/10/2022 08:25	1247	530
26/10/2022	10:24	26/10/2022 10:24	1366	540
26/10/2022	12:52	26/10/2022 12:52	1514	570
26/10/2022	14:55	26/10/2022 14:55	1637	585
26/10/2022	17:15	26/10/2022 17:15	1777	610
27/10/2022	08:12	27/10/2022 08:12	2674	755

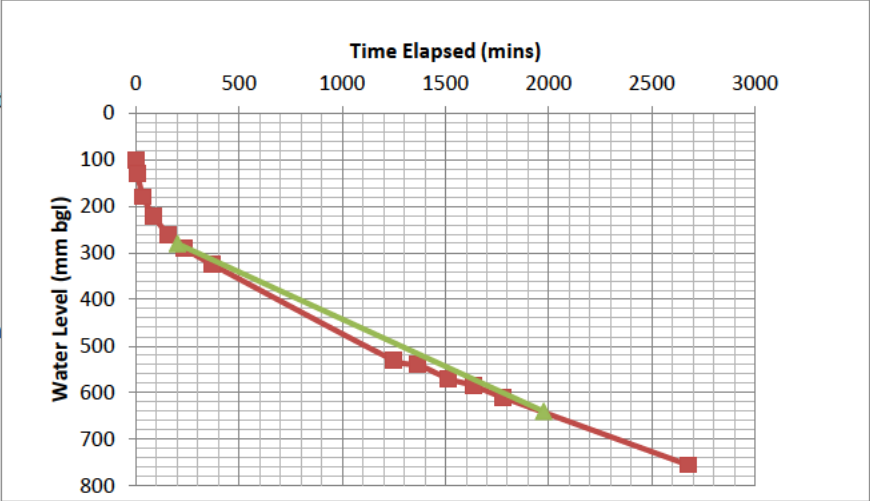
End Fit

Weather

Dry & Bright

some o'nigh
dry

0
0 Projected



Time (mins)	Water Level (mm bgl)
t0	100
t25	280
t50	460
t75	640
t100	820
fall	0.72
t25 - t75	0.36
Area t50	1.338

Infiltration Coefficient = 8.34E-07 m/s

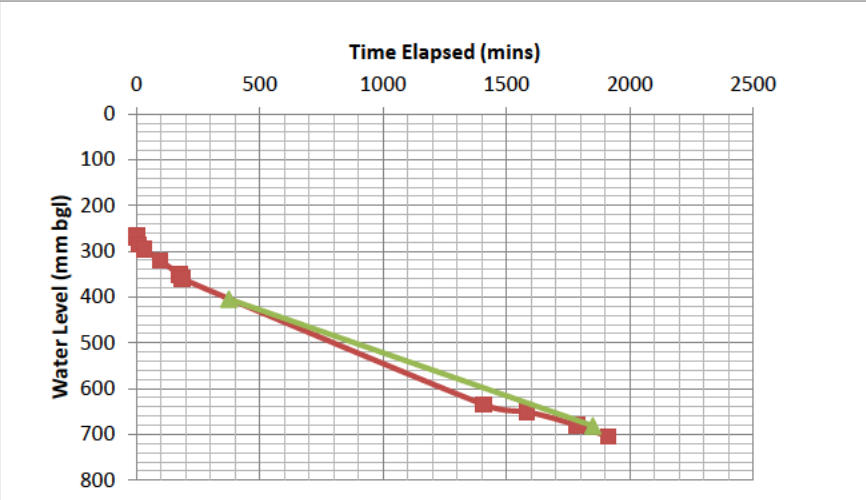
TP1 Test 2

Dimensions (m): width = 0.30 length = 1.10 depth = 0.82

Date	Time	Date and time	Elapsed	Dip
27/10/2022	08:25	27/10/2022 08:25	start	755
27/10/2022	08:33	27/10/2022 08:33		265
27/10/2022	08:35	27/10/2022 08:35		270
27/10/2022	08:43	27/10/2022 08:43		285
27/10/2022	09:04	27/10/2022 09:04		295
27/10/2022	10:09	27/10/2022 10:09		320
27/10/2022	11:26	27/10/2022 11:26		350
27/10/2022	11:39	27/10/2022 11:39		360
28/10/2022	08:02	28/10/2022 08:02		635
28/10/2022	10:56	28/10/2022 10:56		650
28/10/2022	14:20	28/10/2022 14:20		680
28/10/2022	16:25	28/10/2022 16:25		705
31/10/2022	15:41	31/10/2022 15:41		dry

End Fit

Weather
some o'nigh
Dry & Bright



0
0 Projected

	Time (mins)	
t0	265	
t25	403.75	375
t50	542.5	
t75	681.25	1850
t100	820	
fall		0.555
t25 - t75		0.2775
Area t50		1.107

Infiltration Coefficient = 9.35E-07 m/s

TP1 Test 3

Dimensions (m): width = 0.30 length = 1.10 depth = 0.82

Date	Time	Date and time	Elapsed	Dip
31/10/2022	16:35	31/10/2022 16:35	start	dry
31/10/2022	16:40	31/10/2022 16:40	0	310
31/10/2022	16:46	31/10/2022 16:46	6	315
31/10/2022	18:18	31/10/2022 18:18	98	370
01/11/2022	08:07	01/11/2022 08:07	927	500
01/11/2022	14:29	01/11/2022 14:29	1309	420
02/11/2022	08:33	02/11/2022 08:33	2393	330
02/11/2022	14:25	02/11/2022 14:25	2745	390
03/11/2022	11:00	03/11/2022 11:00	3980	90
03/11/2022	14:22	03/11/2022 14:22	4182	140
03/11/2022	16:33	03/11/2022 16:33	4313	170
03/11/2022	16:58	03/11/2022 16:58	4338	175
04/11/2022	08:30	04/11/2022 08:30	5270	200
04/11/2022	09:58	04/11/2022 09:58	5358	225
04/11/2022	11:58	04/11/2022 11:58	5478	275
05/11/2022	11:35	05/11/2022 11:35	6895	460
06/11/2022	10:05	06/11/2022 10:05	8245	75
07/11/2022	10:33	07/11/2022 10:33	9713	250
07/11/2022	15:15	07/11/2022 15:15	9995	205
08/11/2022	08:30	08/11/2022 08:30	11030	340
09/11/2022	08:30	09/11/2022 08:30	12470	200
11/11/2022	12:12	11/11/2022 12:12	15572	620
14/11/2022	09:00	14/11/2022 09:00	19700	800

End Fit

Weather
some rain

heavy rain

o'night rain

dry

some rain

heavy rain

some rain

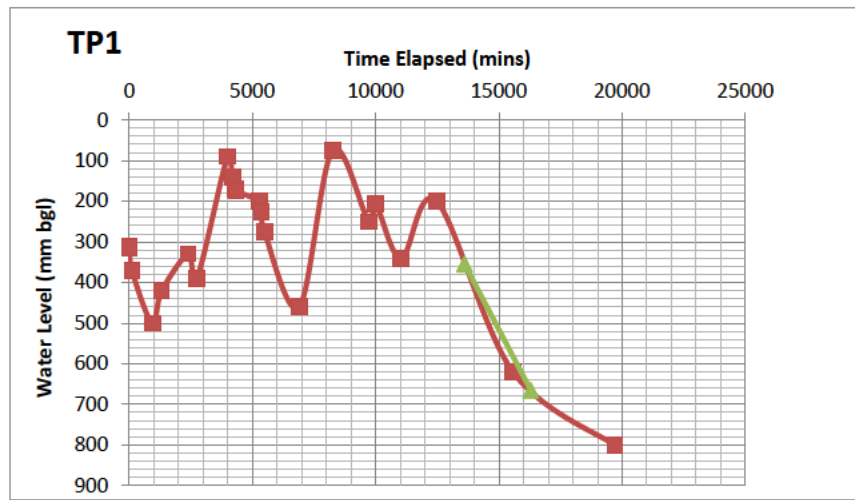
heavy rain

dry

dry

0

0 Projected



Time (mins)		Water Level (mm bgl)
t0	200	
t25	355	13600
t50	510	
t75	665	16300
t100	820	
fall		0.62
t25 - t75		0.31
Area t50		0.89

Infiltration Coefficient = 7.1E-07 m/s

TP2 Test 1

Dimensions (m): width = 0.30 length = 1.05 depth = 1.20

Date	Time	Date and time	Elapsed	Dip
25/10/2022	11:35	25/10/2022 11:35	start	dry
25/10/2022	11:37	25/10/2022 11:37		0
25/10/2022	11:44	25/10/2022 11:44		7
25/10/2022	12:12	25/10/2022 12:12		35
25/10/2022	13:03	25/10/2022 13:03		86
25/10/2022	14:12	25/10/2022 14:12		155
25/10/2022	15:32	25/10/2022 15:32		235
25/10/2022	17:48	25/10/2022 17:48		371
26/10/2022	08:26	26/10/2022 08:26		1249
26/10/2022	10:25	26/10/2022 10:25		1368
26/10/2022	12:51	26/10/2022 12:51		1514
26/10/2022	14:54	26/10/2022 14:54		1637
26/10/2022	17:16	26/10/2022 17:16		1779
27/10/2022	08:14	27/10/2022 08:14		2677
27/10/2022	11:34	27/10/2022 11:34		2877
28/10/2022	08:03	28/10/2022 08:03		4106
28/10/2022	10:55	28/10/2022 10:55		4278
28/10/2022	14:22	28/10/2022 14:22		4485
28/10/2022	16:24	28/10/2022 16:24		4607
31/10/2022	15:41	31/10/2022 15:41		8884

End Fit

Weather

Dry & Bright

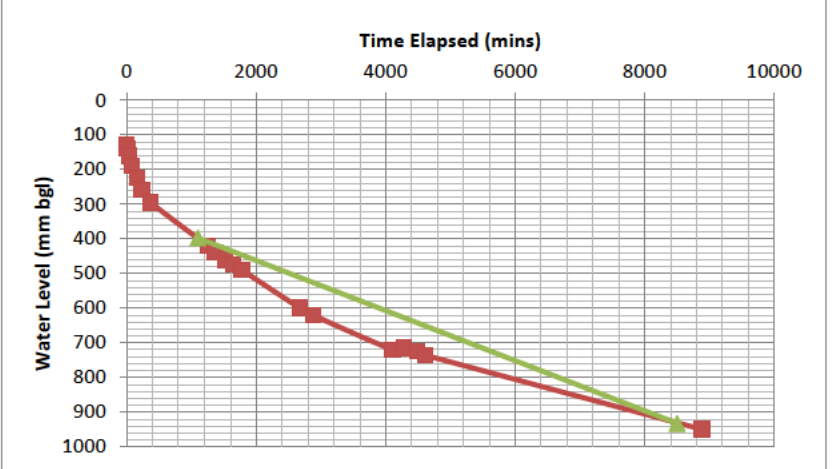
some o'night rain
dry

some o'night rain
dry

some o'night rain

some o'night rain

0
0 Projected



Time (mins)	
t0	130
t25	397.5
t50	665
t75	932.5
t100	1200
fall	1.07
t25 - t75	0.535
Area t50	1.7595

Infiltration Coefficient = 2.16E-07 m/s

TP2 Test 2

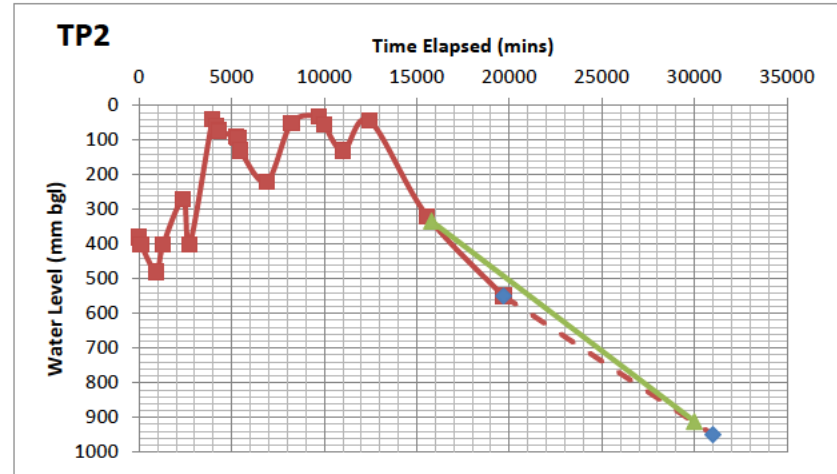
Dimensions (m): width = 0.30 length = 1.05 depth = 1.20

Date	Time	Date and time	Elapsed	Dip
31/10/2022	16:40	31/10/2022 16:40	start	950
31/10/2022	16:45	31/10/2022 16:45	0	380
31/10/2022	18:19	31/10/2022 18:19	94	400
01/11/2022	08:07	01/11/2022 08:07	922	480
01/11/2022	14:29	01/11/2022 14:29	1304	400
02/11/2022	08:33	02/11/2022 08:33	2388	270
02/11/2022	14:25	02/11/2022 14:25	2740	400
03/11/2022	11:00	03/11/2022 11:00	3975	40
03/11/2022	14:22	03/11/2022 14:22	4177	60
03/11/2022	16:33	03/11/2022 16:33	4308	70
03/11/2022	16:58	03/11/2022 16:58	4333	75
04/11/2022	08:30	04/11/2022 08:30	5265	90
04/11/2022	09:58	04/11/2022 09:58	5353	94
04/11/2022	11:58	04/11/2022 11:58	5473	130
05/11/2022	11:35	05/11/2022 11:35	6890	220
06/11/2022	10:05	06/11/2022 10:05	8240	50
07/11/2022	10:33	07/11/2022 10:33	9708	32
07/11/2022	15:15	07/11/2022 15:15	9990	54
08/11/2022	08:30	08/11/2022 08:30	11025	130
09/11/2022	08:30	09/11/2022 08:30	12465	45
11/11/2022	12:15	11/11/2022 12:15	15570	320
14/11/2022	09:00	14/11/2022 09:00	19695	550
			31000	

End Fit

Weather

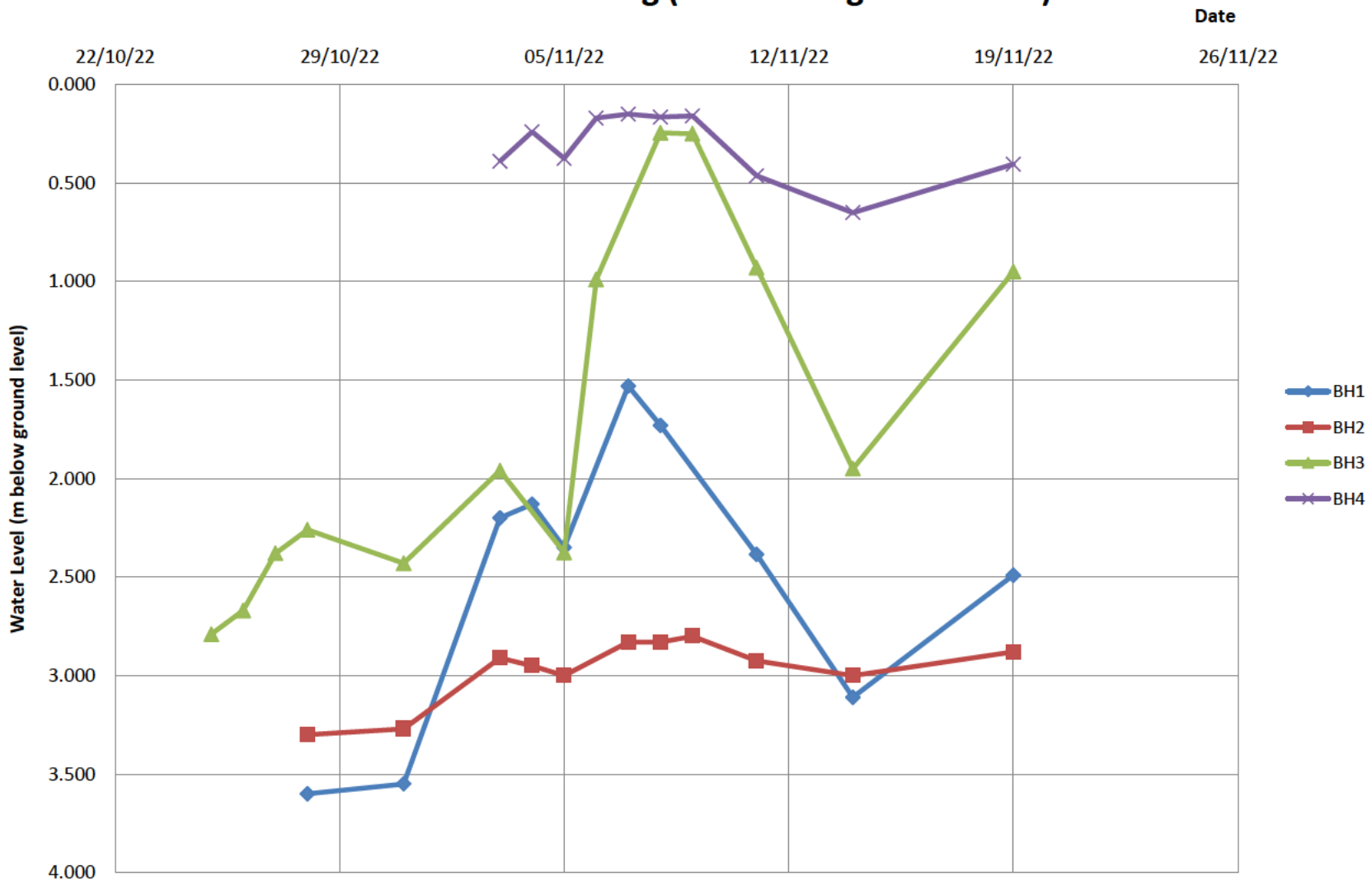
o'night rain
heavy rain
heavy rain
o'night rain
dry
some rain
heavy rain
some rain
heavy rain
dry
550 dry
950 Projected



Time (mins)	
t0	45
t25	333.75 15800
t50	622.5
t75	911.25 30000
t100	1200
fall	1.155
t25 - t75	0.5775
Area t50	0.96975

Infiltration Coefficient = 2.2E-07 m/s

G6523 Downlands School, Hassocks Water Level Monitoring (relative to ground level)



G6523 Downlands School, Hassocks Water Level Monitoring (relative to Ordnance Datum)

