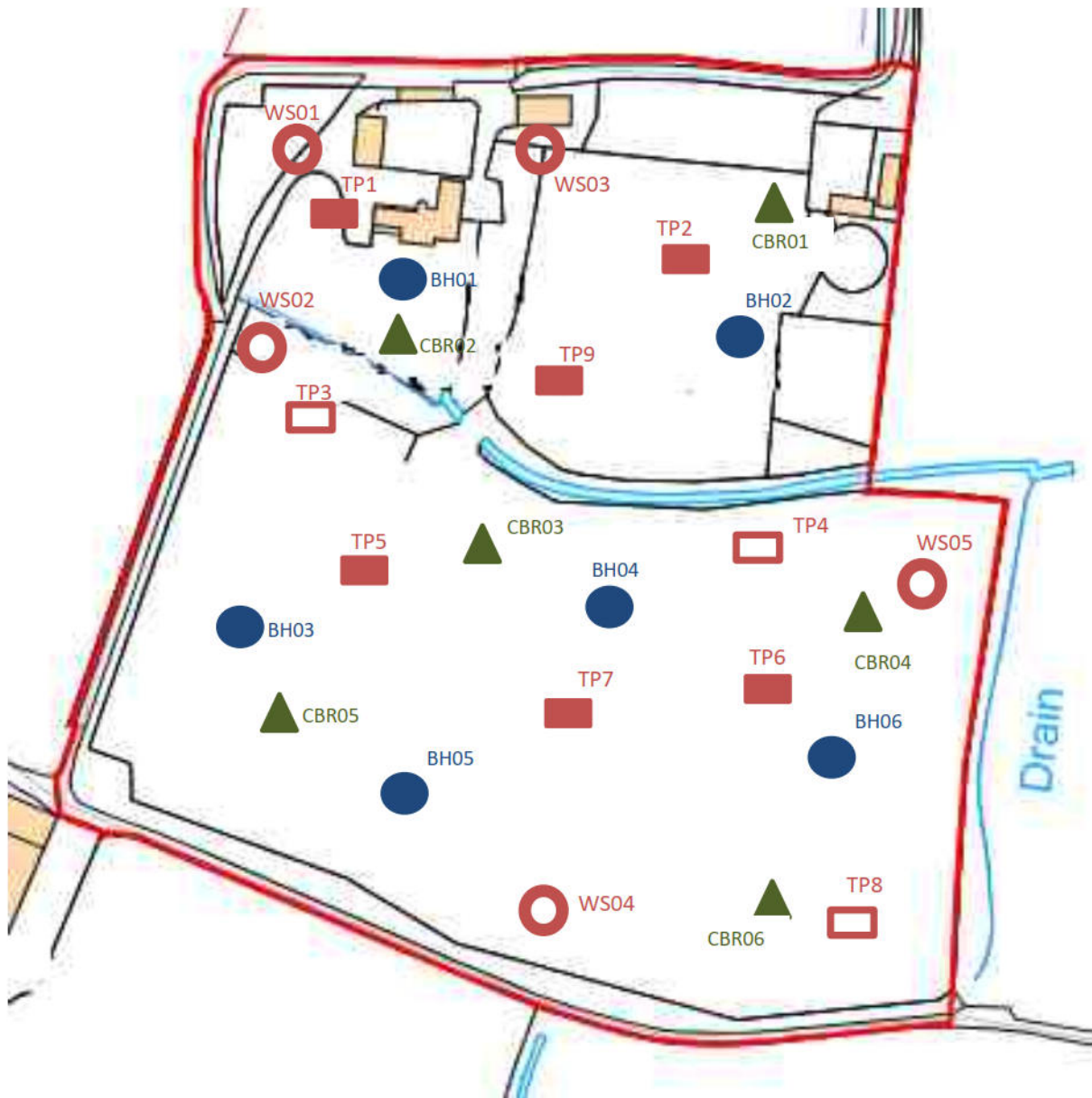


7.3 **Appendix C – GI (extracts) and Winter Groundwater Level Monitoring Reports**



KEY

-  Existing Monitoring Borehole
-  Probe Hole Location
-  Trial Pit Location
-  Trial Pit used for Infiltration Testing
-  In-situ CBR Test Location

PROJECT	CLIENT	Date : 25 th May 2025	 The Forge Lower Vagg Chilthorne Domer Yeovil Somerset BA21 3PY Tel : 01935 840 346
Church Barton House	Hampshire Homes Group Ltd	Scale : Not To Scale	
DRAWING TITLE		DRAWING No.	
Exploratory Hole Location Plan		CBH535.D/sk03	

6.0 GROUND INVESTIGATION WORKS

6.1 Scope of the Investigations

Based upon the findings of the Desk Study an investigation was proposed comprising of trial pits and window sample boreholes to provide general coverage, as discussed below.

- Excavating 9No trial pits TP3, TP4 & TP8 in the areas of the proposed surface water basins were also used for infiltration testing.
- Sinking of 6No window sample probe holes (BH01-BH06) dynamic probes were also sunk at BH01(ref DP01) and BH03 (ref DP03).to provide information regarding the density of the sand.
- In-situ CBR testing at 6No locations.

Appendix A contains a drawing show the locations of these exploratory holes the drilling/excavation of which was overseen by an experienced geo-environmental engineer who logged the strata revealed, copies of which are presented in Appendices F with a selection of photographs in Appendix G.

Table 6.1.1 Rationale/Targeting of the Exploratory Hole Locations

Exploratory Hole	Target
BH01	<i>In north-western area where the former barn and current buildings area.</i>
BH02	<i>In north-eastern area of the current stables and former barns.</i>
BH03	<i>In the south-western area to be developed.</i>
BH04	<i>In central area of the development area.</i>
BH05	<i>In the southern area.</i>
BH06	<i>In the eastern development area.</i>
TP01	<i>Within the proposed garden area in the north-western area where the former barn and current buildings area</i>
TP02	<i>Within the proposed garden area in north-eastern area of the current stables and former barns.</i>
TP03	<i>Within the area of a proposed attenuation pond and also used for infiltration testing.</i>
TP04	<i>Within the area of a proposed attenuation pond and also used for infiltration testing.</i>
TP05	<i>With the proposed garden area.</i>
TP06	<i>With the proposed garden area.</i>
TP07	<i>With the proposed garden area.</i>
TP08	<i>Within the area of a proposed attenuation pond and also used for infiltration testing.</i>
TP09	<i>With the proposed garden area.</i>
CBR01	<i>Along the route of the proposed estate road</i>
CBR02	<i>Along the route of the proposed estate road</i>
CBR03	<i>Along the route of the proposed estate road</i>
CBR4	<i>Along the route of the proposed estate road</i>
CBR5	<i>Along the route of the proposed estate road</i>
CBR6	<i>Along the route of the proposed estate road</i>

All fieldwork was undertaken in general accordance with the guidance set out in “Code of Practice for Site Investigations” BS5930:1999, where applicable.

6.2 Window Sample Probe Holes

All the window sample boreholes were driven to 6.0m bgl using a Competitor 130 rig with SPT's generally at 1m intervals although in BH01 and BH03 dynamic probes were also driven to obtain information about the density of the sand.

As groundwater monitoring had previously been undertaken by others between 2017 and 2019, as reported in Appendix B, the new window sample probe holes were not installed with standpipes and upon completion backfilled with the arisings as no monitoring was proposed.

6.3 Trial Pits

The nine trial pits were excavated using a JCB 3C to depths ranging from 1.70m to 2.9m and backfilled upon completion using the backhoe bucket for limited compaction with surplus soils being left raised over the area to accommodate future settlement.

Three of the trial pits, which were terminated at 1.7-1.8m bgl, as this is likely to be the base of the attenuation pond, were used for infiltration test.

6.4 In-situ CBR testing

In-situ tests were undertaken using a Dynamic Cone Penetrometer across the site along the routes of the proposed estate roads, as shown in the development layout plan in Appendix A, to determine CBR values the result graphs from which are in Appendix I.

6.5 Monitoring

The boreholes installed during the previous investigations had been installed with standpipes and although they were not located during the current investigations they had been used for ground water level monitoring. The approximate position of these boreholes is shown on the drawing in Appendix A and the monitoring results are reported in the Constructive Evaluation letter report contained in Appendix B.

Therefore, as there are no identified sources of landfill gases in the vicinity of the site the current boreholes were not proposed for gas or groundwater monitoring and no standpipes were installed.

6.6 Laboratory Testing

Selected disturbed samples were obtained from the exploratory holes for geochemical and geophysical testing.

Soil samples for environmental chemical testing comprised one plastic tub and two amber glass jar, as per the laboratory's requirements. Groundwater samples were taken from two of the trial pits and two of the boreholes before backfilling. These samples were forwarded to the UKAS/MCERTS accredited laboratory of i2 Analytical to be analysed in accordance with the suite presented in Table 6.6.1 with the results provided in Appendix J.

Table 6.6.1: Schedule of Chemical Testing

Test Type	Number of Samples Tested
Arsenic, Cadmium, Chromium, Hexavalent Chromium, Lead, Mercury, Nickel, Copper, Zinc, Selenium, Water Soluble Boron, Total Cyanide, Free Cyanide, pH, Water Soluble Sulphate, Sulphide, Elemental Sulphur, Total Monohydric Phenols, Organic Content, Speciated Polyaromatic	12Nº. soil 4Nº. water
TPH CWG & BTEX	12Nº. soil 4Nº. water
Asbestos screen	6Nº. soil
Pesticides	6Nº. soil
Waste Acceptance Criteria	2No. soils

7.0 SUMMARY OF GROUND CONDITIONS

7.1 Introduction

The BGS maps indicate that the site was underlain by River Terrace Deposits (silt) with the underlying shallow bedrock being the London Clay Formation (clay, silt and sand).

7.2 Recorded Ground Conditions - General

Below the topsoil the upper layer of the shallow River Terrace Deposits comprised predominantly a slightly gravelly sandy silty CLAY ranging from 1.30m to >2.90mbgl (deeper than the trial pit) resting on a generally slightly gravelly SAND to between 3.60 to 4.20m locally at the base this became a silty very sandy GRAVEL. The underlying London Clay being a sandy silty CLAY that tended in colour from a brown (weathered) to a grey.

Copies of the trial pit and borehole logs are contained in Appendix F but Table 7.2.1 provides a general overview of the strata encountered, which has also been colour coded with grey for topsoil, blue for cohesive soils and yellow granular.

Table 7.2.1: Summary of Strata Encountered

Depth (m bgl)		Exploratory Holes Identified	Soil Type	General Description/Comments
From	To			
0.00	0.30-0.60	BH01-06 TP01-09	Topsoil	sandy CLAY/ SILT with occasional fine to coarse angular to sub angular chert/ flint gravel.
0-30-0.60	1.30->2.90	BH02,03,04,05 & 06 TP1-09	River Terrace Deposits	brown becoming orange brown, slightly gravelly, sandy, silty CLAY. Gravel is angular to sub angular, fine to medium chert/flint.
0.40	1.60	BH01	River Terrace Deposits	sandy CLAY/ SILT with occasional fine to coarse angular to sub angular chert/ flint gravel.
1.30-1.70	1.70-3.60	BH01,03,04,05 & 06 TP1,3,5,6,7 & 9	River Terrace Deposits	light yellow brown locally orange brown & light yellow grey, slightly gravelly, silty SAND. Gravel is sub angular to rounded, fine to medium chert/flint.
2.70	3.60	BH03	River Terrace Deposits	Thinly laminated, yellow brown, sandy silty CLAY.
3.00	4.00	BH04	River Terrace Deposits	brown / yellow brown, silty, very sandy, fine to coarse GRAVEL. Gravel is sub angular to rounded chert/flint.
3.60	4.20	BH03	River Terrace Deposits	yellow brown slightly gravelly, silty SAND. Gravel is sub angular to rounded, fine to medium chert/ flint
3.60	4.90	BH06	River Terrace Deposits	yellow brown, slightly gravelly, sandy, silty CLAY. Gravel is angular to sub angular, fine to medium chert/flint.
1.90-4.20	4.00-4.80	BH01-06	London Clay	thinly laminated, dark brown becoming dark brown grey, sandy, silty CLAY.
4.00-4.90	>6.00	BH01-06	London Clay	Thinly laminated grey, slightly sandy, silty CLAY.

7.2.1 Topsoil

Topsoil was encountered in all exploratory across the surface of the site to a maximum depth of 600mm although typically it was 200-300mm thick and comprised a sandy CLAY with some gravel.

There were area of asphalt surfacing around the current property but as it was still occupied at the time of the investigation it was not disturbed.

7.2.2 Made Ground

No made ground was encountered in any of the exploratory holes but as noted above around the property there was asphalt surfacing, which is likely to have a sub-base, due to continued use of the site this was not disturbed.

7.2.3 Superficial Deposits

The anticipated River Terrace Gravels were present in every exploratory hole and consisted of layers the upper strata being a slightly gravelly sandy silty CLAY that rested on a slightly gravelly silty SAND although locally some exploratory holes encountered towards the base of the superficial deposit a band of a very sandy GRAVEL or another narrow lense of sandy silty CLAY.

7.2.4 Bedrock

All the boreholes encountered the London Clay initially as a brown slightly sandy silty CLAY, which was considered to be the upper weathered layer below which it became a grey slightly sandy silty CLAY to the base of the borehole (6m).

7.2.5 Contamination Found

No obvious visual or olfactory evidence of contamination was noted within any of the boreholes or trial pits.

7.3 **Groundwater**

Groundwater was encountered in all of the boreholes and four of the trial pits as shown in Table 7.3.1 below.

Table 7.3.1 Groundwater Strike Levels

Exploratory Hole	Depth of hole (mbgl)	Groundwater strike (mbgl)	Comments
BH01	6.00	2.00	Moderate influx rose to 1.63mbgl in 120 minutes
BH02	6.00	2.90	Moderate influx rose to 2.03mbgl in 120 minutes
BH03	6.00	2.00	Moderate influx rose to 1.70mbgl in 60 minutes
BH04	6.00	2.00	Moderate influx rose to 1.76mbgl in 120 minutes
BH05	6.00	2.20	Moderate influx rose to 1.82mbgl in 120 minutes
BH06	6.00	2.20	Moderate influx rose to 1.74mbgl in 60 minutes
TP1	2.00	2.00	Seepage at base that rose to 1.8mbgl
TP2	2.90	Dry	
TP3	1.70	Dry	
TP4	1.70	Dry	
TP5	2.90	Dry	
TP6	2.20	2.20	Seepage at base that rose to 2.05mbgl
TP7	2.10	2.10	Seepage at base that rose to 1.95mbgl
TP8	1.80	1.80	Seepage at base that rose to 1.74mbgl
TP9	2.60	Dry	

7.4 **Chemical Test Results**

7.4.1 Soils

The results of the contamination testing on the selected soil samples are summarised in the Table 7.4.1. The i2 Analytical laboratory test result report (25-027137) is in Appendix J.

Table 7.4.1: Soils Chemical Analysis Results Summary

Determinant	Recorded Concentrations (mg/kg)		No. of Samples Tested
	Minimum Concentration	Maximum Concentration	
Arsenic	6.6	11	12
Boron (water soluble)	0.3	1.2	12
Cadmium	<0.2	0.3	12

13.0 GEOTECHNICAL ASSESSMENT

13.1 Introduction

During the drilling of the window sample probe holes Standard Penetration Tests (SPT's) were recorded at regular intervals to determine "N" values in addition Dynamic Probes were also driven at the locations of BH01 and BH03 to provide further information about the density of the sand layers.

Bulk samples of the natural soils were also collected from the trial pits and probe holes and forwarded to Geo Site and Testing Limited (GSTL) in Carmarthenshire for Atterberg and Particle Size Distribution (PSD) testing plus BRE sulphate analysis. The results for which discussed in the following sections although full copy of the results report is contained in Appendix K.

13.2 Particle Size Distribution and Soil Descriptions

Selected samples were scheduled for particle Size Distribution (PSD) testing to determine the percentage of the constituents of the soils and generally, as shown in Table 13.2.1 below, these confirmed the field observations.

However, there needs to be a degree of flexibility in the assessing the descriptions as the laboratory PSD results can, despite being based upon quantitative data, be erroneous. As site observations are based upon an estimate of percentages while the laboratory considers actual weights to determine the principal components. The site observations in the trial pits also include the stockpiled material and the undisturbed exposed excavation faces.

Table 13.2.1 Soil Descriptions and PSD Results

Hole ref	Depth (m)	Laboratory Soil Description	Cobbles (%)	Gravels (%)	Sand (%)	Silt/ sand (%)	Site Soil Description
BH03	0.9-1.1	Brown fine to coarse sandy SILT/ CLAY	0	1	7	92	Brown becoming orange brown, slightly gravelly, sandy, silty CLAY. Gravel is angular to sub angular, fine to medium chert/flint
TP1	0.9-1.1	Brown fine to coarse sandy SILT/ CLAY	0	0	4	96	Brown dark yellow sandy silty CLAY with very rare fine to medium sub-angular gravel chert/flint.
TP2	0.9-1.1	Brown fine to coarse sandy SILT/ CLAY	0	4	43	53	Brown dark yellow sandy silty CLAY with rare fine to medium sub-angular gravel chert/flint.
TP3	1.3-1.5	Brown slightly gravelly slightly silty/ clayey fine to coarse SAND	0	1	91	8	Brown orange slightly gravelly silty fine to coarse SAND. Gravel is fine to coarse sub-angular chert/flint.
TP5	0.9-1.1	Brown slightly gravelly fine to coarse sandy SILT/ CLAY	0	2	33	65	Brown dark yellow sandy silty CLAY with very rare fine to medium sub-angular gravel chert/flint.
TP6	0.9-1.1	Brown fine to coarse sandy SILT/ CLAY	0	0	263	74	Brown dark yellow sandy silty CLAY with very rare fine to medium sub-angular gravel chert/flint.
TP7	1.6-1.8	Brown slightly silty/ clayey fine to medium gravelly fine to coarse SAND	0	17	75	8	Brown orange slightly gravelly silty fine to coarse SAND. Gravel is fine to coarse sub-angular chert/flint.
TP9	1.2-1.5	Brown fine to coarse sandy SILT/ CLAY	0	0	21	79	Brown dark yellow sandy silty CLAY with very rare fine to medium sub-angular gravel chert/flint.

Generally, the site observations were the same as the laboratory although visually the samples were considered to contain rare gravels, which the laboratory testing only noted in some samples, which could be due to difficulty in obtaining a fully representative sample.

13.3 Soil Strength Parameters

During the drilling of the probe holes SPT blow counts were included at generally 1m intervals and at the base of the holes, Details of the recorded counts for each test depth are shown on the logs in Appendix F but the extrapolated "N" values are included in Table 13.3.1 below, which where applicable also includes the dynamic probe blow counts..

Table 13.3.1 Recorded "N" values

BH	SPT starting depth (mbgl)	Soil Description	Geological Strata	N value	Dynamic Probe Blows/ 100mm
BH01	1.00	Stiff , slightly gravelly, sandy, silty CLAY	River Terrace Deposits	17	1,2,3,3,4
	2.00	Loose , slight gravelly silty SAND		6	6,8,6,3,2
	3.00	Firm , sandy, silty CLAY		9	
	4.00	Medium Dense , slightly gravelly silty SAND		10	
		Firm , sandy silty CLAY	London Clay		
	6.00	Stiff , sandy silty CLAY		17	
BH02	1.00	Firm to stiff , slightly gravelly sandy silty CLAY	River Terrace Deposits	8	
	2.00	Firm , sandy silty CLAY	London Clay	7	
	3.00			9	
	4.00	Stiff , slightly sandy silty CLAY		11	
	6.00			16	
BH03	1.00	Stiff , slightly gravelly, sandy silty CLAY	River Terrace Deposits	17	2,1,2,2,5
	2.00	Loose , slightly gravelly silty SAND		6	1,2,1,2,2
	3.00	Firm , sandy silty CLAY		9	2,2,2,3,3
	4.00	Medium Dense , slightly gravelly silty SAND		10	6,5,6,6,6
		Firm , slightly sandy silty CLAY	London Clay		7,8,7,8,8
	6.00	Stiff , slightly sandy silty CLAY		17	
BH04	1.00	Firm to stiff , slightly gravelly, sandy, silty CLAY	River Terrace Deposits	10	
	2.00	Medium Dense , slightly gravelly, silty SAND.		10	
	3.00	Loose , silty, very sandy GRAVEL		6	
	4.00	Stiff , sandy, silty CLAY	London Clay	15	
	5.00			24	
	6.00			16	
BH05	1.00	Firm to stiff , slightly gravelly, sandy silty CLAY	River Terrace Deposits	9	
	2.00	Loose , slightly gravelly, silty SAND		6	
	3.00			6	
	4.00	Firm , sandy, silty CLAY	London Clay	10	
	5.00	Stiff to very stiff , slightly sandy, silty CLAY		31	
	6.00			13	
BH06	1.00	Firm to stiff , slight gravelly, sandy, silty CLAY	River Terrace Deposits	8	
	2.00	Medium Dense , slightly gravelly, silty SAND		22	
	3.00			12	
	4.00	Firm to stiff , slightly gravelly, sandy silty CLAY		10	
	5.00	Stiff , slightly sandy, silty CLAY	London Clay	11	
	6.00			14	

These in-situ tests confirmed the upper clay layer, which when present at around 1.0mbgl in all the exploratory had N values ranging from 8 (firm) to 17 (stiff) which using the Stroud 1974

conversion for a cohesive soil with a plastic index of between 20% and 40% of would equate to an undrained shear strength of between 35kPa to 75kPa.

The SPT N values in the underlying slightly gravelly silty SAND ranged from 6 (loose) to 10 (medium dense), which would give a greater bearing capacity of 100kPa with minimum internal angle of friction of $\phi = 28-30^\circ$.

13.4 Laboratory Testing Results

Selected bulk samples of the natural soils collected from the trial pits and the window sample cores were dispatched to GSTL for geotechnical testing, a copy of their results report is contained in Appendix K but are also detailed in Table 13.4.1 below.

Table 12.4.1 Geotechnical Laboratory Results

BH	Depth	Soil Description	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.424mm (%)	Laboratory Plasticity Assessment
BH03	0.9-1.1	sandy SILT/ CLAY	16.3	32	12	20	97	CL : Low
TP1	0.9-1.1	sandy SILT/ CLAY	20.6	46	14	32	99	CI : Intermediate
TP2	0.9-1.1	sandy SILT/ CLAY	16.7	31	13	18	92	CL : Low
TP3	1.3-1.5	slightly gravelly slightly silty/ clayey SAND	17.2		Non Plastic		78	
TP5	0.9-1.1	slightly gravelly sandy SILT/ CLAY	15.5	40	14	26	96	CI : Intermediate
TP6	0.9-1.1	sandy SILT/ CLAY	20.1	40	17	23	62	CI : Intermediate
TP7	1.6-1.8	slightly silty/ clayey gravelly SAND	18.9		Non Plastic		78	
TP9	1.2-1.5	sandy SILT/ CLAY	17.6	37	15	22	97	CI : Intermediate

The table above confirms that the deeper granular clayey gravelly SAND was non-plastic and therefore not subject to volume change. The upper layer of more cohesive layer of sandy SILT/CLAY was shown to have plasticity ranging from Low to Intermediate.

However, the laboratory assessment is based upon the soils being 100% clay and does not take into account that more gravelly plastic soils may not be subject to such large volume changes. Therefore, the NHBC's guidance for foundation design includes the allowance for a Modified Plasticity Index which is calculated using the formula below

$$\text{Modified Plasticity Index (I'p)} = \frac{\text{Plasticity Index (Ip)} \times \% \text{ less than } 425\mu\text{m}}{100\%}$$

Table 12.4.2 NHBC Modified Plastic Index for cohesive soils

BH	Depth	Plasticity Index (%)	Passing 0.424mm (%)	Modified Plasticity Index (%)	NHBC Volume Change Potential
BH03	0.9-1.1	20	97	19.40	Low
TP1	0.9-1.1	32	99	31.68	Medium
TP2	0.9-1.1	18	92	16.56	Low
TP5	0.9-1.1	26	96	24.96	Medium
TP6	0.9-1.1	23	62	14.26	Low
TP9	1.2-1.5	22	97	21.34	Low

The Modified Plasticity Index results within the cohesive clay soils ranged from Low to Medium volume change potential. Therefore, for foundation design a **medium volume change potential** as it is the worst case should be adopted.

14.6 Preliminary Foundation Recommendations

As discussed in Section 13 the shallow cohesive soils across the site have been shown to have a modified medium volume change potential for which the minimum foundation depth would be 0.9m (NHBC guidance). At this depth the undisturbed natural cohesive soil has been estimated to have a shear strength ranging from 35kPa to 75kPa.

Therefore, using Skempton, 1956, to calculate the standard bearing capacity for a shallow strip foundation based upon the above minimum soil strength with a founding depth of 0.9m and after applying factor of safety of 3 this would give a bearing capacity of:

$$((35 \times 6.5 \text{ from Skempton charts}) + (20(\text{soil unit weight}) \times 0.9))/3 = \mathbf{81.8KN/m^2}$$

During the investigation works trees and hedges were noted around the boundaries and around the existing buildings in the north-western corner. Therefore, the foundations for any proposed properties within the zone of influence of these or proposed new trees will also need to consider their potential impact and as such localised over deepening may be required. If the required foundation depth exceeds 1.5m heave protection, in accordance with NHBC requirements, may be required.

However, the clay layer was generally underlain by a slightly gravelly silty SAND from around 1.5m and therefore if the footings in the impacted areas can be founded in this strata it will not be at risk of potential heave. It is recommended that an arboricultural survey is undertaken by a specialist and in areas where the foundations may be within the zone of influence further investigations to determine the depth to the underlying slightly gravelly silty SAND to allow suitable foundations to be designed. If piles are proposed, then further deeper boreholes may be required to obtain geotechnical data on the deeper strata.

If different strata area encountered at the formation level there is a risk of differential settlement and it is recommended that mesh reinforcement is incorporated within the foundations

14.7 In-situ Infiltration Testing Results

In-situ infiltration testing was undertaken in the three trial pits in the positions of the proposed attenuation ponds, as shown on the plan in Appendix A, with the pits, where infiltration occurred, being filled with water on three occasions in accordance with the procedures outlined in BRE Digest 365 Soakaway design 1991.

On each occasion the time for the water level to drop from 25% to 75% was recorded and used to calculate the corresponding infiltration rate. Appendix H contains copies of the record sheets but the results are summarised in Table 14.7.1 below.

Table 14.7.1: Summary of the Calculated Infiltration Rates

Trial Pit	Depth to Base (m)	Total Water Level Drop (m)	Total Time Taken (min)	Infiltration Rate (m/s)
TP3				
Round 1	1.60	0.300	350	5.12×10^{-6}
Round 2	1.60	0.720	800	4.20×10^{-6}
Round 3	1.60	0.240	360	3.99×10^{-6}
TP4				
Round1	1.70	0.030	1350	N/A
TP8				
Round 1	1.80	0.090	1350	N/A

Based upon the results obtained, as shown in the table above, the shallow soils in Trial Pits TP4 and TP8 did not allow the passage of water but the soils revealed in TP3 were shown to be permeable and allowed for three repeats of the tests over two days to be completed. These gave infiltration rates ranging from $3.99 \times 10^{-6} \text{m/s}$ to $5.12 \times 10^{-6} \text{m/s}$, which indicates this localised area of soil has the capacity to potentially support a soakaway drainage design solution for surface water drainage

However, from the winter groundwater monitoring, undertaken by others between 2017 and 2019, it was shown that the water table rose to <1mbgl and therefore standard soakaway designs are unlikely to be acceptable.



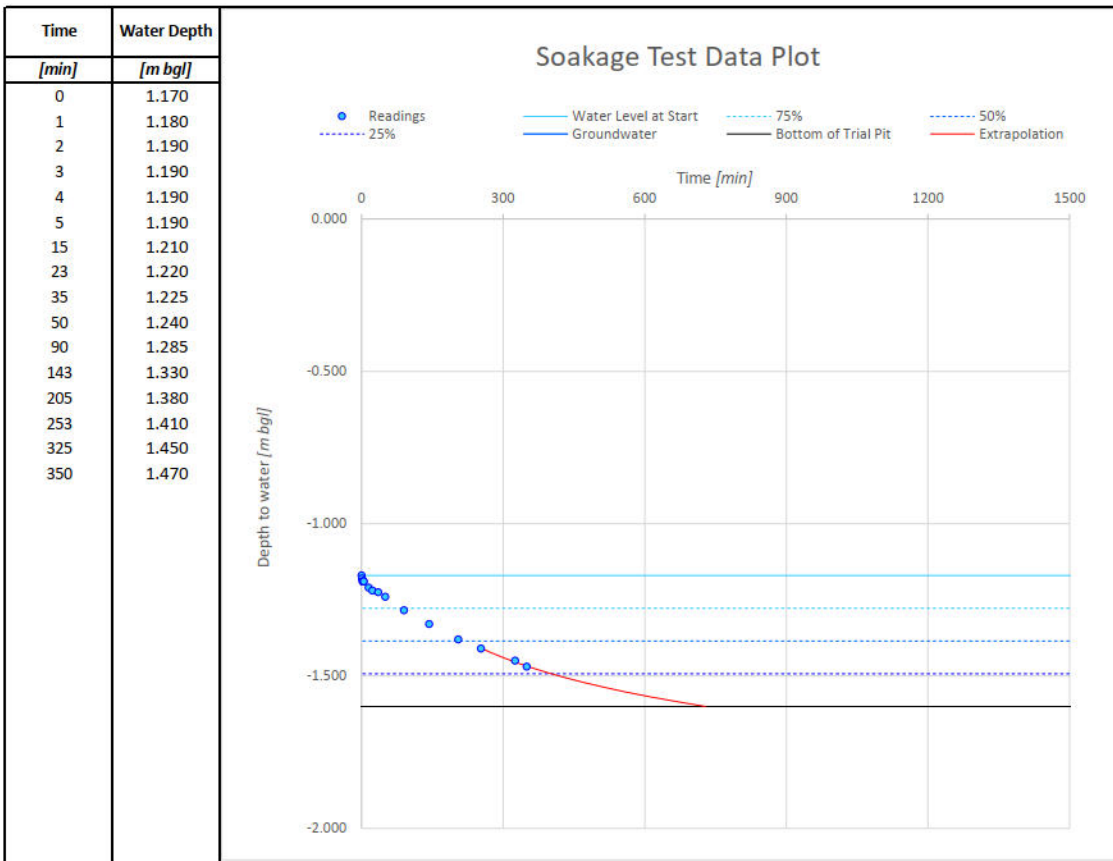
SOIL INFILTRATION RATE

Client: Hampshire Homes
Project Title: Church Barton House
Project No: CBH535

Borehole No: TP3
Test No: 1
Date: 21st May 2025
Logged by: RB

Length [m]: 1.80
Depth [m]: 1.60
Width [m]: 0.45
Groundwater [m bgl]:

Ground	Conditions	from - to [m bgl]		Description
		0.00	0.30	Topsoil
		0.30	1.30	Firm sandy silty Clay with rare gravel
		1.30	1.70	Loose slight gravelly silty SAND



Soil Infiltration Rate [m/s]:
$$f = \frac{V_{p75-25}}{a_{s50} \times t_{p75-25}}$$

with:

V_{p75-25} as Effective Storage Volume of water between 75% and 25% effective storage depth [m³] 0.17

a_{s50} as Internal Surface Area of the soakage trial pit up to 50% storage depth including the base area [m²] 1.78

t_{p75-25} as Time for the water level to fall from 75% to 25% effective storage depth [s] 1.9.E+04

Soil Infiltration Rate [m/s]: 5.12E-06

Remarks: Calculation of soil infiltration rate based on extrapolated results.

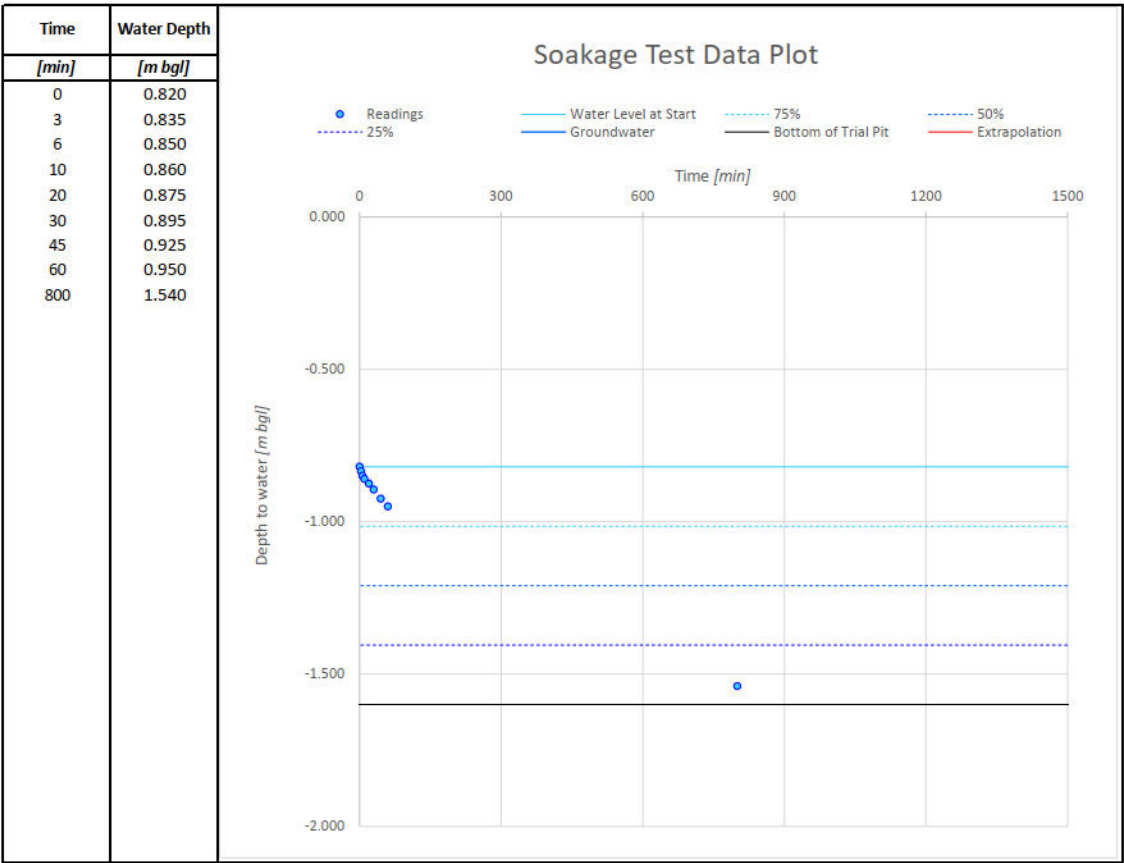


SOIL INFILTRATION RATE

Client: Hampshire Homes
Project Title: Church Barton House
Project No: CBH535

Borehole No:	TP3	Length [m]:	1.80
Test No:	2	Depth [m]:	1.60
Date:	21st to 22nd May 2025 (overnight)	Width [m]:	0.45
Logged by:	RB	Groundwater [m bgl]:	

Ground	Conditions	from - to [m bgl]		Description
		0.00	0.30	Topsoil
		0.30	1.30	Firm sandy silty Clay with rare gravel
		1.30	1.70	Loose slight gravelly silty SAND



Soil Infiltration Rate [m/s]:
$$f = \frac{V_{p75-25}}{a_{s50} \times t_{p75-25}}$$

with:

V_{p75-25} as Effective Storage Volume of water between 75% and 25% effective storage depth [m³] **0.32**

a_{s50} as Internal Surface Area of the soakage trial pit up to 50% storage depth including the base area [m²] **2.56**

t_{p75-25} as Time for the water level to fall from 75% to 25% effective storage depth [s] **2.9.E+04**

Soil Infiltration Rate [m/s]: 4.20E-06

Remarks:



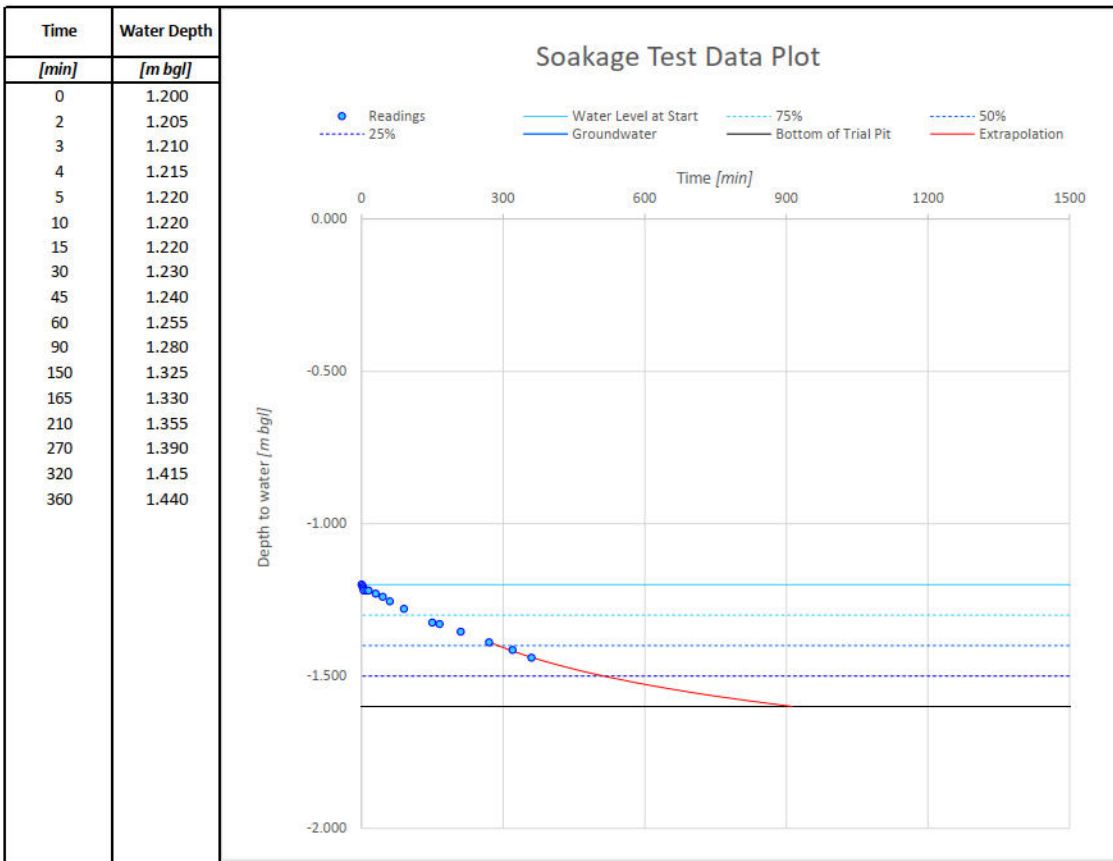
SOIL INFILTRATION RATE

Client: Hampshire Homes
Project Title: Church Barton House
Project No: CBH535

Borehole No: TP3
Test No: 3
Date: 22nd May 2025
Logged by: RB

Length [m]: 1.80
Depth [m]: 1.60
Width [m]: 0.45
Groundwater [m bgl]:

Ground	Conditions	from - to [m bgl]		Description
		0.00	0.30	Topsoil
		0.30	1.30	Firm sandy silty Clay with rare gravel
		1.30	1.70	Loose slight gravelly silty SAND



Soil Infiltration Rate [m/s]:
$$f = \frac{V_{p75-25}}{a_{s50} \times t_{p75-25}}$$

with:

V_{p75-25} as Effective Storage Volume of water between 75% and 25% effective storage depth [m³] **0.16**

a_{s50} as Internal Surface Area of the soakage trial pit up to 50% storage depth including the base area [m²] **1.71**

t_{p75-25} as Time for the water level to fall from 75% to 25% effective storage depth [s] **2.4.E+04**

Soil Infiltration Rate [m/s]: 3.99E-06

Remarks: Calculation of soil infiltration rate based on extrapolated results.



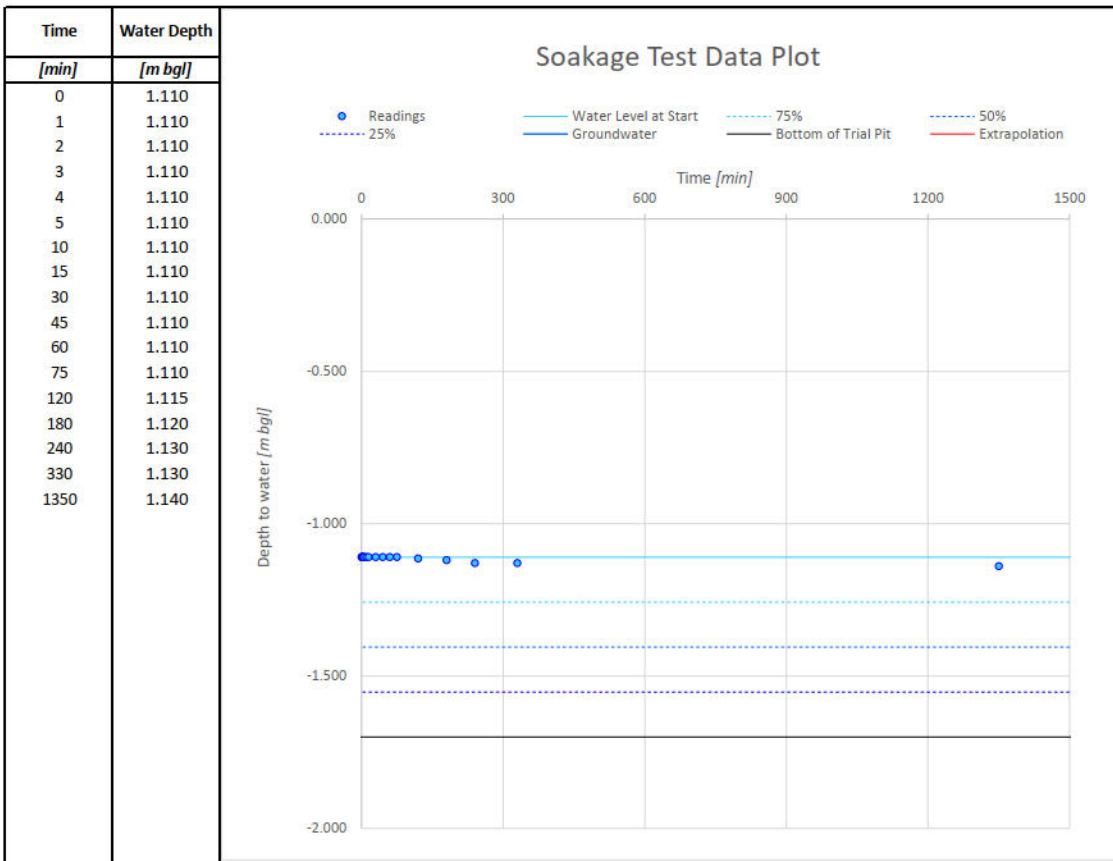
SOIL INFILTRATION RATE

Client: Hampshire Homes
Project Title: Church Barton House
Project No: CBH535

Borehole No: TP4
Test No: 1
Date: 21st to 22nd May 2025 (overnight)
Logged by: RB

Length [m]: 1.40
Depth [m]: 1.70
Width [m]: 0.45
Groundwater [m bgl]:

Ground	Conditions	from - to [m bgl]		Description
		0.00	0.60	Topsoil
		0.60	1.70	Firm sandy silty Clay with rare gravel



Soil Infiltration Rate [m/s]:
$$f = \frac{V_{p75-25}}{a_{s50} \times t_{p75-25}}$$

with:

V_{p75-25} as Effective Storage Volume of water between 75% and 25% effective storage depth [m³] 0.19

a_{s50} as Internal Surface Area of the soakage trial pit up to 50% storage depth including the base area [m²] 1.72

t_{p75-25} as Time for the water level to fall from 75% to 25% effective storage depth [s] n/a

Soil Infiltration Rate [m/s]: n/a

Remarks: Result could not be calculated. Soakage test failed.



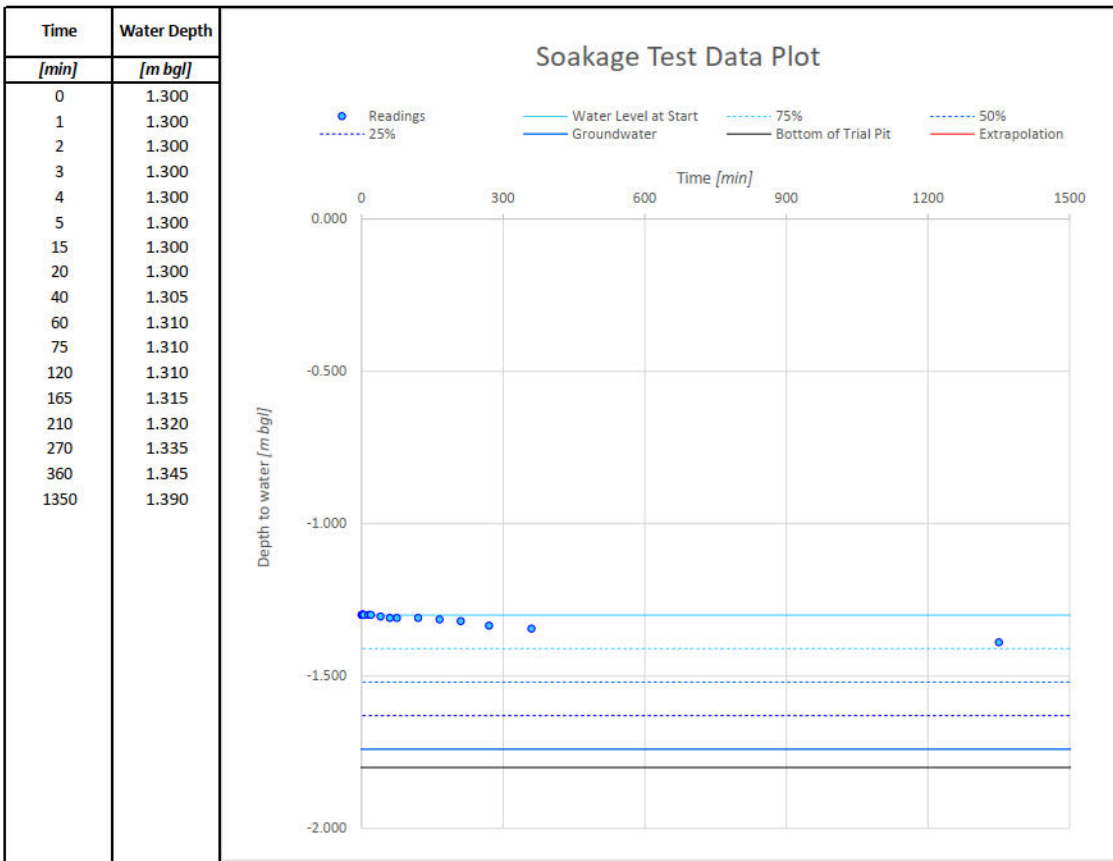
SOIL INFILTRATION RATE

Client: Hampshire Homes
Project Title: Church Barton House
Project No: CBH535

Borehole No: TP8
Test No: 1
Date: 21st to 22nd May 2025 (overnight)
Logged by: RB

Length [m]: 1.60
Depth [m]: 1.80
Width [m]: 0.45
Groundwater [m bgl]: 1.74

Ground	Conditions	from - to [m bgl]		Description
		0.00	0.60	Topsoil
		0.60	1.80	Firm sandy silty Clay with rare gravel



Soil Infiltration Rate [m/s]:
$$f = \frac{V_{p75-25}}{a_{s50} \times t_{p75-25}}$$

with:

V_{p75-25} as Effective Storage Volume of water between 75% and 25% effective storage depth [m³] **0.16**

a_{s50} as Internal Surface Area of the soakage trial pit up to 50% storage depth including the base area [m²] **1.62**

t_{p75-25} as Time for the water level to fall from 75% to 25% effective storage depth [s] **n/a**

Soil Infiltration Rate [m/s]: n/a

Remarks: Result could not be calculated. Soakage test failed.