Arboricultural Consultancy for Aviva

Note: This report is intended for use between the client, Environmental Services and any parties detailed within the report. It is based on the understanding at the time of visiting the property that Engineers are satisfied that damage is attributable to clay shrinkage subsidence exacerbated by vegetation.

1. Case Details

Insured	Mr Gordon Lindley	Address	36 Yeomead, Nailsea, Bristol, BS48 1JA, Nailsea, Bristol, BS48 1JA		
Client	Subsidence Management Services	Contact	Brad Jenkins	Claim No.	IFS-AVI-SUB-22-0101951
ES Ref	SA-251632	Consultant	Simon Nash	Contact No.	0330 380 1036
Report Date	11/01/2023				

Scope of Report: To survey the property and determine significant vegetation contributing to subsidence damage, make recommendation for remedial action and assess initial mitigation and recovery prospects. The survey does not make an assessment for decay or hazard evaluation.

2. Property and Damage Description

The insured structure is a 2 storey detached house. It has been extended with a single-storey extension to the rear and a single-storey extension to the rear. The property occupies a site that slopes steeply downhill from right to left.

We understand that the current damage relates to the rear extensions of the insured dwelling, where cracking indicates downwards movement.

3. Technical Reports

No technical investigations are available at the time of reporting, therefore assumptions outlined in Note above apply: recommendations may be subject to change following evaluation of any investigations that may be forthcoming.

4. Action Plan

Mitigation	
Insured involved?	Yes
Local Authority involved?	No
Other third party Mitigation involved?	Yes
Recovery	
Is there a potential recovery action?	Yes

Treeworks	
Local Authority	North Somerset District Council
TPO / Conservation Area / Planning Protection Searches	Awaiting Searches from LA
Additional Comments	
Awaiting Further Instructions. A potential recovery action has been identified. Engineers should consider focusing investigations to strengthen factual evidence for disclosure to third party tree owners.	

5. Technical Synopsis

This report is based upon our understanding at the time of visiting the property that Subsidence Management Services have concluded, on a preliminary basis, that the current damage is due to differential foundation movement exacerbated by moisture abstraction from vegetation growing proximate to the property's foundations.

We have therefore been instructed to assess the potential for vegetation to be influencing soil moisture levels beneath the foundations of the property and, if deemed appropriate provide management proposals which will return long-term stability and allow effective repairs to be undertaken.

The potential drying influence of the vegetation on site, has been considered based on an assessment of overall size, species profile and the proximity of vegetation relative to the advised area of damage.

Based on our observations on site, it is our opinion that the footings of the subject property are within the normally accepted influencing distance of vegetation on site, thereby indicating the potential for the advised damage to be the result of clay shrinkage subsidence exacerbated by the moisture abstracting influence of vegetation.

With due regards to species profile, size and proximity, the Oak trees (T6 & T9) are considered the dominant features proximate to the focal area(s) of movement and accordingly, where vegetation is confirmed as being causal, we have identified them as the primary cause of the current subsidence damage.

The size and proximity of the above vegetation is consistent with the advised location(s) of damage and it is our opinion, on balance of probability, that roots from the above vegetation will be in proximity to the footings of the insured property.

Note: additional minor vegetation has been noted on site and, depending on trial-pit location may be identified within future site investigations; however, unless specifically identified within this report, these plants are not deemed material to the current claim nor pose a significant future risk.

Given the above and considering the suspected mechanism of movement, in order to mitigate the current damage thereby allowing soils beneath the property to recover to a position such that an effective engineering repair solution can be implemented, we recommend a program of vegetation management as detailed by this report.

Please refer to Section 6 for management prescriptions.

Preliminary recommendations contained within this report are prescribed on the basis that site investigations confirm vegetation to be causal; management advice is designed to offer the most reliable arboricultural solution likely to restore long-term stability and also facilitate liaison with third-party owners and/or Local Authorities where necessary.

Consequently, we have advocated the complete removal of T6 & T9 as it will offer the most certain arboricultural solution likely to restore long-term stability.

Replacement planting is considered appropriate with regards mitigating the impact of the works suggested; however, species selection should be appropriate for the chosen site and consideration must be given to the ultimate size of the replacement species and any future management requirements.

We recommend the role of vegetation and the efficacy of management recommendations be qualified by means of monitoring.

Please note that the footing of the insured property fall within the anticipated rooting distance of additional vegetation which we believe presents a foreseeable risk of future damage and accordingly we have made recommendations in respect of this.

The extent / impact of vegetation management required to restore and maintain long-term stability at this property is acknowledged. However, we consider the impact on the wider public amenity from the proposed tree works is mitigated by the presence of further trees and the scope for replacement planting.

Is vegetation likely to be a contributory factor in the current damage?	Yes
Is vegetation management likely to contribute to the future stability of the property?	Yes
Is replacement planting considered appropriate?	Yes
Would DNA profiling be of assistance in this case?	Yes

6.0 Recommendations

6.1 Current Claim Requirements

These recommendations may be subject to review following additional site investigations.

Tree No.	Species	Age Cat	Approx. Height (m)	Distance to Building (m) *	Ownership	Action	Requirement
T6	Oak	3	26	14	A - Third Party	Remove	Remove close to ground level; do not treat stump due to translocation risk. Where such a risk exists, we advise that any emergent regrowth is removed annually.
T9	Oak	3	20	10	A - Third Party	Remove	Remove close to ground level; do not treat stump due to translocation risk. Where such a risk exists, we advise that any emergent regrowth is removed annually.
Age Cat: 1 = Younger than property; 2 = Similar age to the property; 3 = Significantly older than property							

* Estimated

6.2 Future Risk Recommendations

These recommendations may be subject to review following additional site investigations.

Tree No.	Species	Age Cat	Approx. Height (m)	Distance to Building (m) *	Ownership	Action	Requirement
H1	Mixed species hedge	1	6	15	D - Unknown	No action	No works.
H2	Mixed species hedge	2	1.5	12	A - Third Party	No action	No works.
H3	Beech	1	1.5	1	C - Insured	Action to avoid future risk	Subject to regular management; maintain at current dimensions by way of regular pruning.
S1	Shrub	1	2.2	4	A - Third Party	No action	No works.
S2	Pyracantha	1	2	2	C - Insured	Action to avoid future risk	Subject to regular management; maintain at current dimensions by way of regular pruning.
S3	Elaeagnus	1	1.1	2.2	C - Insured	Action to avoid future risk	Subject to regular management; maintain at current dimensions by way of regular pruning.
S4	Viburnum	1	3.3	4.5	C - Insured	Action to avoid future risk	Subject to regular management; maintain at current dimensions by way of regular pruning.
SG1	Mixed species shrubs	1	1	6.5	C - Insured	No action	No works.
T1	Cherry	1	2.2	6.7	A - Third Party	Action to avoid future risk	Maintain at broadly current dimensions by way of regular pruning.
T10	Willow	1	1.1	2.7	C - Insured	Action to avoid future risk	Subject to regular management; maintain at current dimensions by way of regular pruning.
T2	Horse Chestnut	1	2.2	15	A - Third Party	No action	No works.
T3	Birch	1	7.7	8.4	C - Insured	Action to avoid future risk	Subject to regular management; maintain at current dimensions by way of regular pruning.
T4	Cypress	1	2.7	8.5	C - Insured	No action	No works.
T5	Cypress	1	2.5	6.3	C - Insured	No action	No works.
T7	Cherry	1	2	7	C - Insured	Action to avoid future risk	Subject to regular management; maintain at current dimensions by way of regular pruning.
T8	Laburnum	1	4.1	9	C - Insured	No action	No works.
TG1	Mixed species group	1	6	7.7	C - Insured	Action to avoid future risk	Subject to regular management; maintain at current dimensions by way of regular pruning.
Age Cat: 1 = Younger than property; 2 = Similar age to the property; 3 = Significantly older than property							

* Estimated

Third party property addresses should be treated as indicative only, should precise detail be required then Environmental Services can undertake Land Registry Searches

7. Site Plan

Please note that this plan is not to scale. OS Licence No. 100043218

8. Photographs

S1 - Shrub

Rear

T7 - Cherry

H2 - Mixed species hedge

Rear

S2 - Pyracantha

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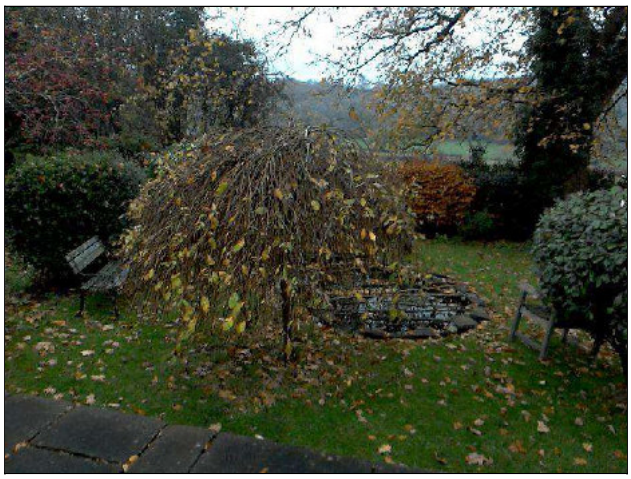
T8 - Laburnum

H3 - Beech

T9 - Oak

S3 - Elaeagnus



T10 - Willow

T1 - Cherry

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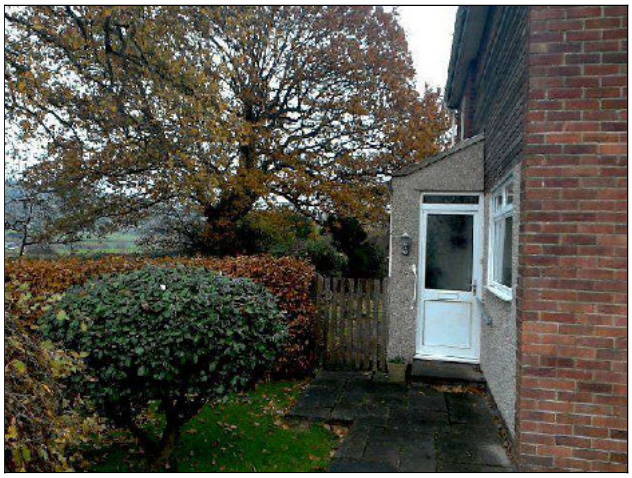
TG1 - Mixed species group

S4 - Viburnum

TG1 - Mixed species group

Front

Front

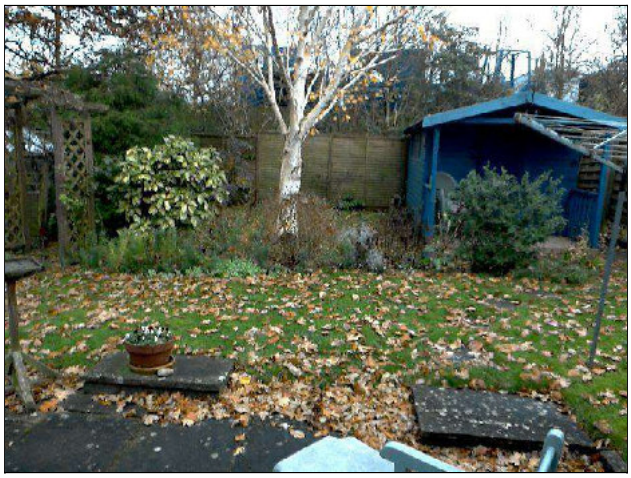


General Site

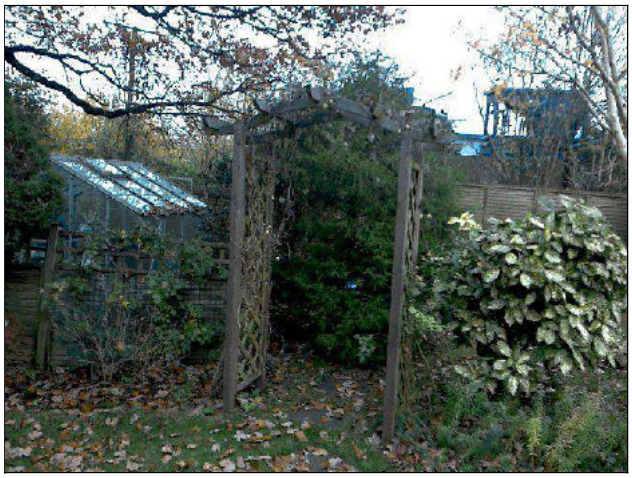
Arboricultural Consultancy for Aviva

T2 - Horse Chestnut

T3 - Birch



SG1 - Mixed species shrubs



T4 - Cypress

T5 - Cypress

H2 - Mixed species hedge

T6 - Oak

Date: 11/01/2023 Property: 36 Yeomead, Nailsea, Bristol, BS48 1JA, Nailsea, Bristol, BS48 1JA

9. Tree Works Reserve - Does not include recommendations for future risk.

Insured Property Tree Works	£0.00
Third Party Tree Works	£4500.00
Provisional Sum	£0.00

- The above prices are based on works being performed as separate operations.
- The above is a reserve estimate only.
- Ownerships are assumed to be correct and as per Section 6.
- A fixed charge is made for Tree Preservation Order/Conservation Area searches unless charged by the Local Authority in which case it is cost plus 25%.
- Should tree works be prevented due to statutory protection then we will automatically proceed to seek consent for the works and Appeal to the Secretary of State if appropriate.
- All prices will be subject to V.A.T., which will be charged at the rate applying when the invoice is raised.
- Trees are removed as near as possible to ground level, stump and associated roots are not removed or included in the price.
- Where chemical application is made to stumps it cannot always be guaranteed that this will prevent future regrowth. Should this occur we would be pleased to provide advice to the insured on the best course of action available to them at that time. Where there is a risk to other trees of the same species due to root fusion, chemical control may not be appropriate.

10. Limitations

This report is an appraisal of vegetation influence on the property and is made on the understanding that that engineers suspect or have confirmed that vegetation is contributing to clay shrinkage subsidence, which is impacting upon the building. Recommendations for remedial tree works and future management are made to meet the primary objective of assisting in the restoration of stability to the property. In achieving this, it should be appreciated that recommendations may in some cases be contrary to best Arboricultural practice for tree pruning/management and is a necessary compromise between competing objectives.

Following tree surgery we recommended that the building be monitored to establish the effectiveness of the works in restoring stability.

The influence of trees on soils and building is dynamic and vegetation in close proximity to vulnerable structure should be inspected annually.

The statutory tree protection status as notified by the Local Authority was correct at the time of reporting. It should be noted however that this may be subject to change and we therefore advise that further checks with the Local Authority MUST be carried out prior to implementation of any tree works. Failure to do so can result in fines in excess of £20,000.

Our flagging of a possible recovery action is based on a broad approach that assume all third parties with vegetation contributing to the current claim have the potential for a recovery action (including domestic third parties). This way opportunities do not “fall through the net”; it is understood that domestic third parties with no prior knowledge may be difficult to recover against but that decision will be fully determined by the client.

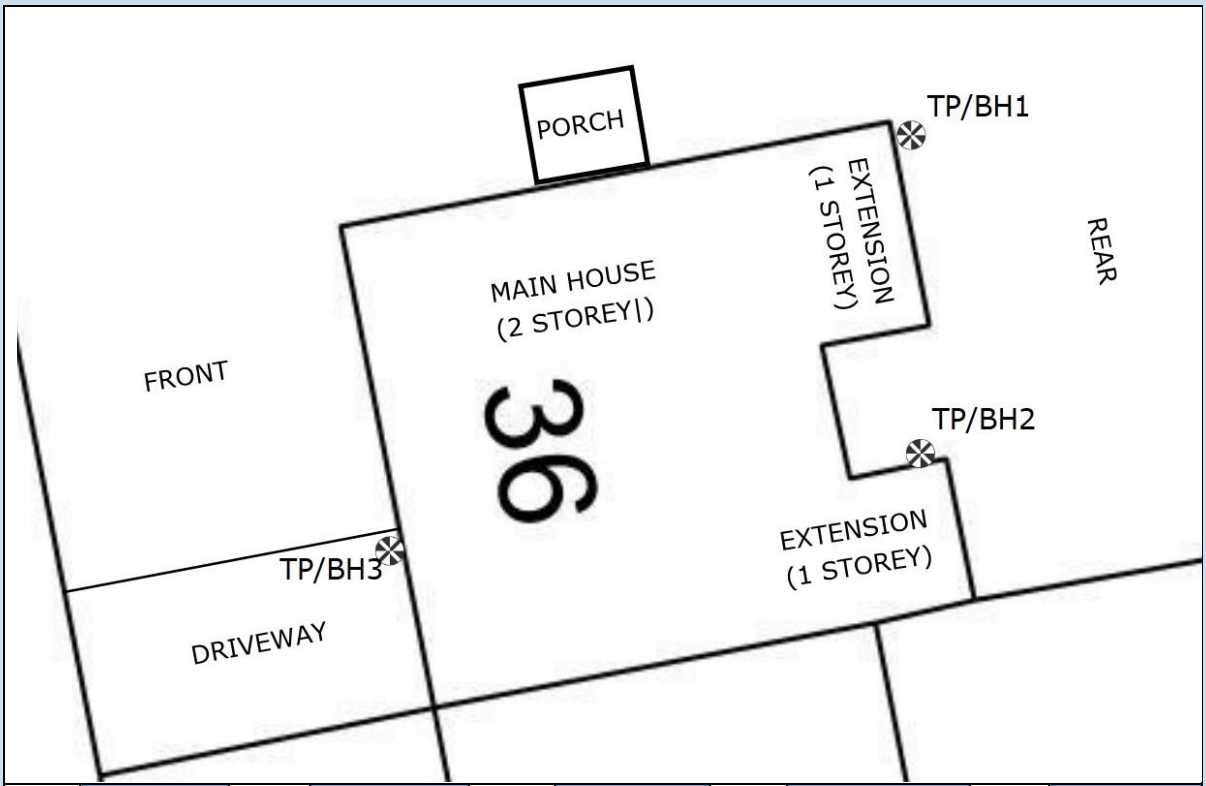
A legal Duty of Care requires that all works specified in this report should be performed by qualified, arboricultural contractors who have been competency tested to determine their suitability for such works in line with Health & Safety Executive Guidelines. Additionally all works should be carried out according to British Standard 3998:2010 *“Tree Work. Recommendations”*.

GEOTECHNICAL
for Subsidence Management Services

36 Yeomead, Nailsea, Bristol, BS48 1JA

Client:	Subsidence Management Services
Client Contact:	Brad Jenkins
Client Ref:	IFS-AVI-SUB-22-0101951
Policy Holder:	Mr Gordon Lindley
Report Date:	23 December 2022
Our Ref:	C67595G30919

Site Plan



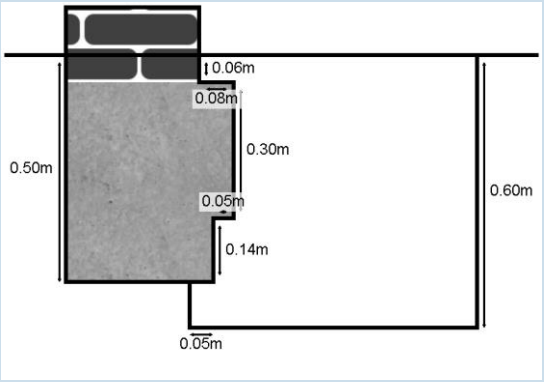
	Borehole		Foul Water Drain	FMH	Foul Manhole		Foul Rodding Point		Foul Vent Pipe
	Trial Pit / Borehole		Surface Water Drain	RMH	Rain Water Manhole		Surface Rodding Point		Rain Water Gully
	Trial Pit		Combined Drain	MH	Combined Manhole				

SubsNetUK

TP/BH1 Foundation Detail and Borehole Log

Foundation Detail

Extension foundation comprised of brick wall to 60mm bgl, bearing on concrete to 360mm bgl, with a total projection of 80mm from the elevation, bearing on concrete to 500mm bgl, with a total projection of 30mm from the elevation. Underside of foundation (USF) was exposed to 50mm back from the face of the foundation and probed 170mm back from the face of the foundation.



WS	Samples Type	Samples Depth (m)	Tests Type	Tests Depth (m)	Tests Results	Legend	Stratum Description and Observations
	R	0.01 - 0.50				0	TOPSOIL. MADE GROUND: Un-compact dark brown very silty CLAY with occasional fine ash and fine to medium concrete.
	D	0.60 - 1.10	PEN	0.60	HP=2.0 (1.5,1.5,1.5,2.0,3.5)	0.5	Soft brown mottled grey slightly sandy very silty CLAY. ...at 0.5m to 1m bgl soils described as being slightly moist. ...at 0.5m to 1.5m bgl occasional roots of live appearance encountered and sampled.
	D	1.10 - 1.60				1.0	Stiff reddish brown mottled grey silty CLAY.
	D	1.60 - 2.10	PEN	1.60	HP=4.5 (4.5,4.5,4.5,4.5,4.5)	1.5	...at 1.5m to 2.8m bgl no roots encountered. Extensive inspection of soil samples encountered no roots. ...at 1.6m bgl becoming very stiff.
▼	D	2.10 - 2.60				2.0	Very stiff dark grey silty CLAY with occasional fine ash.
▽	D	2.60 - 2.80	PEN	2.60	HP=4.5 (4.5,4.5,4.5,4.5,4.5)	2.5	...at 2.4m to 2.8m bgl soils described as being slightly wet. ...at 2.8m bgl unable to retrieve further sample due to friable soils preventing sample recovery.

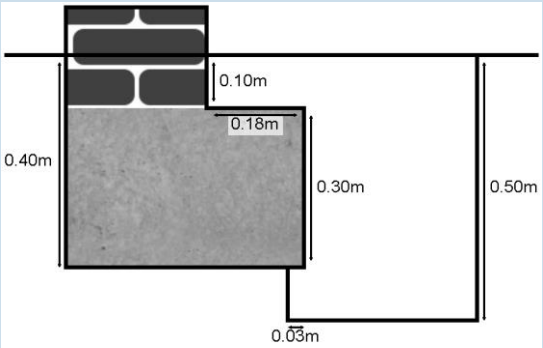
-- End of borehole at 2.80m --
Trial pit excavated to 0.60m bgl. Borehole completed by hand auger. Groundwater encountered at 2m bgl. Standing water level within the exploratory hole at 2.4m bgl on completion.

SubsNetUK

TP/BH2 Foundation Detail and Borehole Log

Foundation Detail

Extension foundation comprised of brick wall to 100mm bgl, bearing on concrete to 400mm bgl, with a total projection of 180mm from the elevation. Underside of foundation (USF) was exposed to 30mm back from the face of the foundation and probed 250mm back from the face of the foundation.



WS	Samples Type	Samples Depth (m)	Tests Type	Tests Depth (m)	Tests Results	Legend	Stratum Description and Observations
	R	0.07 - 0.40				0	PAVING SLAB. CONCRETE. Orange copper pipe (50mm dia) encountered running perpendicular to the wall at 0.07m bgl in . Suspected drain - foul water.
	D	0.50 - 1.00	PEN	0.50	HP=3.1 (3.3,3.3,3.0,3.0,3.0)	0.5	MADE GROUND: Un-compact dark brown gravelly sandy silty CLAY with occasional fine to medium concrete, brick and granite. Firm brown mottled grey sandy silty CLAY. ...at 0.5m to 1.5m bgl rare roots of live appearance encountered and sampled.
	D	1.00 - 1.50				1.0	
	D	1.50 - 2.00	PEN	1.50	HP=3.7 (3.0,3.0,4.3,4.3,4.0)	1.5	...at 1.5m to 2.8m bgl no roots encountered. Extensive inspection of soil samples encountered no roots. ...at 1.7m bgl becoming very stiff.
	D	2.00 - 2.50				2.0	Very stiff dark grey silty silty CLAY with occasional fine ash.
	D	2.50 - 2.80	PEN	2.50	HP=4.0 (4.0,4.0,4.0,4.0,4.0)	2.5	...at 2.8m bgl unable to retrieve further sample due to friable soils preventing sample recovery.

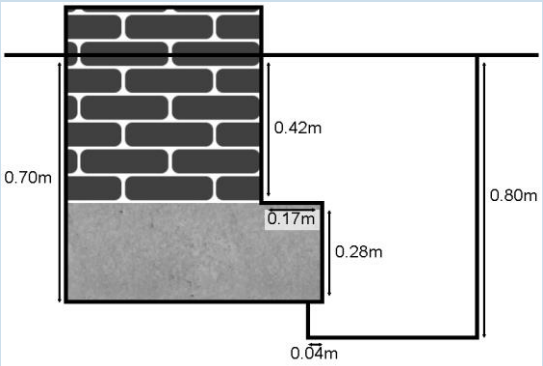
-- End of borehole at 2.80m --
Trial pit excavated to 0.50m bgl. Borehole completed by hand auger.

SubsNetUK

TP/BH3 Foundation Detail and Borehole Log

Foundation Detail

House foundation comprised of brick wall to 420mm bgl, bearing on concrete to 700mm bgl, with a total projection of 170mm from the elevation. Underside of foundation (USF) was exposed to 40mm back from the face of the foundation and probed 250mm back from the face of the foundation.



WS	Samples Type	Samples Depth (m)	Tests Type	Tests Depth (m)	Tests Results	Legend	Stratum Description and Observations
						0	PAVING SLAB.
							CONCRETE.
	R	0.26 - 0.70					SUB-BASE resembling MOT/DTp Type 1.
						0.5	MADE GROUND: Un-compact dark brown sandy very silty CLAY with occasional fine to coarse concrete and granite.
							Black plastic pipe (30mm dia) encountered running perpendicular to the wall at 0.560m bgl in . Confirmed electricity supply.
	D	0.80 - 1.30	MP	0.80	11,8,11,8,17,22		Un-compact wet brown mottled grey slightly sandy very silty CLAY.
							...at 0.7m to 1.8m bgl rare roots of live appearance encountered and sampled.
						1.0	...at 0.950m bgl becoming firm.
	D	1.30 - 1.80					...at 1.4m bgl becoming reddish brown.
						1.5	
	D	1.80 - 2.10	MP	1.80	Refusal 50,50,50,50 for 133mm		...at 1.8m bgl becoming very stiff.
							...at 1.8m to 2.1m bgl no roots encountered. Extensive inspection of soil samples encountered no roots.
						2.0	...at 2.1m bgl unable to retrieve further sample due to suction in the borehole and friable soils preventing sample recovery.

-- End of borehole at 2.10m --
Trial pit excavated to 0.80m bgl. Borehole completed by hand auger. Groundwater encountered at 0.68m bgl. Standing water level within the exploratory hole at 0.75m bgl on completion.

SubsNetUK

Site Observations

HEALTH AND SAFETY:
Negative signal obtained in Power, Radio and Genny mode on the Cable Avoidance Tool (CAT) (TP/BH1).
Negative signal obtained in Power, Radio and Genny mode on the Cable Avoidance Tool (CAT) (TP/BH2).
Negative signal obtained in Radio and Genny mode, Positive signal obtained in Power mode on the Cable Avoidance Tool (CAT) (TP/BH3).
Orange copper pipe (50mm dia) encountered running perpendicular to the wall at 0.07m bgl in TP/BH2. Suspected drain - foul water.
Black plastic pipe (30mm dia) encountered running perpendicular to the wall at 0.560m bgl in TP/BH3. Confirmed electricity supply.

BOREHOLE:
At 2.8m bgl unable to retrieve further sample due to friable soils preventing sample recovery in TP/BH1.
At 2.8m bgl unable to retrieve further sample due to friable soils preventing sample recovery in TP/BH2.
At 2.1m bgl unable to retrieve further sample due to suction in the borehole and friable soils preventing sample recovery in TP/BH3.

SOILS:
At 0.5m to 1m bgl soils described as being slightly moist in TP/BH1.
At 1.6m bgl becoming very stiff in TP/BH1.
At 2.4m to 2.8m bgl soils described as being slightly wet in TP/BH1.
At 1.7m bgl becoming very stiff in TP/BH2.

At 0.950m bgl becoming firm in TP/BH3.
At 1.4m bgl becoming reddish brown in TP/BH3.
At 1.8m bgl becoming very stiff in TP/BH3.

ROOTS:
At 0.5m to 1.5m bgl occasional roots of live appearance encountered and sampled in TP/BH1.
At 1.5m to 2.8m bgl no roots encountered. Extensive inspection of soil samples encountered no roots in TP/BH1.
At 0.5m to 1.5m bgl rare roots of live appearance encountered and sampled in TP/BH2.
At 1.5m to 2.8m bgl no roots encountered. Extensive inspection of soil samples encountered no roots in TP/BH2.
At 0.7m to 1.8m bgl rare roots of live appearance encountered and sampled in TP/BH3.
At 1.8m to 2.1m bgl no roots encountered. Extensive inspection of soil samples encountered no roots in TP/BH3.

WATER STRIKES:
Groundwater encountered at 2m bgl. Standing water level within the exploratory hole at 2.4m bgl on completion TP/BH 1.
Groundwater encountered at 0.68m bgl. Standing water level within the exploratory hole at 0.75m bgl on completion TP/BH 3.

Environmental Services

SOIL ANALYSIS

for Subsidence Management Services

36 Yeomead, Bristol, BS48 1JA

Client:	Subsidence Management Services
Claim Number:	4502072477
Policy Holder:	Mr Gordon Lindley
Report Date:	30/01/2023
Our Ref:	L24497

Compiled By:

Name	Position	Signature
Saira Dougan	Laboratory Technician	

Checked By:

Name	Position	Signature
Bob Walker	Laboratory Manager	

Date samples received:	03-Jan-23
Water Content Test Date:	22-Jan-23
Atterberg Limits Test Date:	30-Jan-23

UKAS TESTING

9265

Environmental Services

Notes relating to soils testing

Unless otherwise stated, all soil testing was undertaken by Environmental Services at unit 10H Maybrook Business Park, B76 1AL for SubsNetUK of Unit 4 Linnet Court, Cawledge Business Park, Alnwick, NE66 2GD

Soil samples have been prepared in accordance with BS1377:Part 1: 2016 Section 7

Descriptions of soil samples within the laboratory have been undertaken generally in accordance with BS5930:2015. Descriptions of soil samples fall outside of the scope of UKAS accreditation and may have been shortened to remove tertiary components for ease of reference.

The graphical representation of 40% of the LL and the numerical representation of the modified plasticity index (mod. PI) fall outside of the scope of UKAS accreditation.

Following the issue of this soil analysis report, samples will be retained for at least 28 days should additional testing, or referencing, be required. It should be noted that any tests undertaken on soils retained subsequent to the issue of this report may not give an accurate indication of the in-situ conditions of the sample.

The results contained herein relate only to items tested and no others. Additionally as the laboratory is not responsible for the sampling process it takes no responsibility for the condition of the samples and all samples are tested "as received".

Where samples of the same test type are not tested on the same day, or the testing spans multiple days, the test date states the day of the final test or the test date of the final sample.

All information above the laboratory reference on the cover page of this report are as provided by the customer and the laboratory is not responsible for any errors or omissions therein.

Water Content Tests are undertaken in accordance with ISO 17892:Part 1:2014

The Liquid Limit test is undertaken in accordance with BS1377:Part 2:1990 Section 4.4 using an 80g cone with a 30° tip. Sieve percentages reported in blue denote that the sample has been sieved otherwise it has been prepared from its natural state. Sieve percentage reported in BOLD denote that the sample has been oven-dried prior to testing.
Unless otherwise specified herein, the one-point cone penetrometer method has been used with increasing water content. Atterberg results depicted in green have not been tested and are duplicates of the preceding sample, included for reference only.

The Plastic Limit test and the determination of the Plasticity Index is undertaken in accordance with BS1377:Part 2:1990. Where a plastic limit has been denoted with an asterisk (*) then it has been derived from the liquid limit and has not been tested.

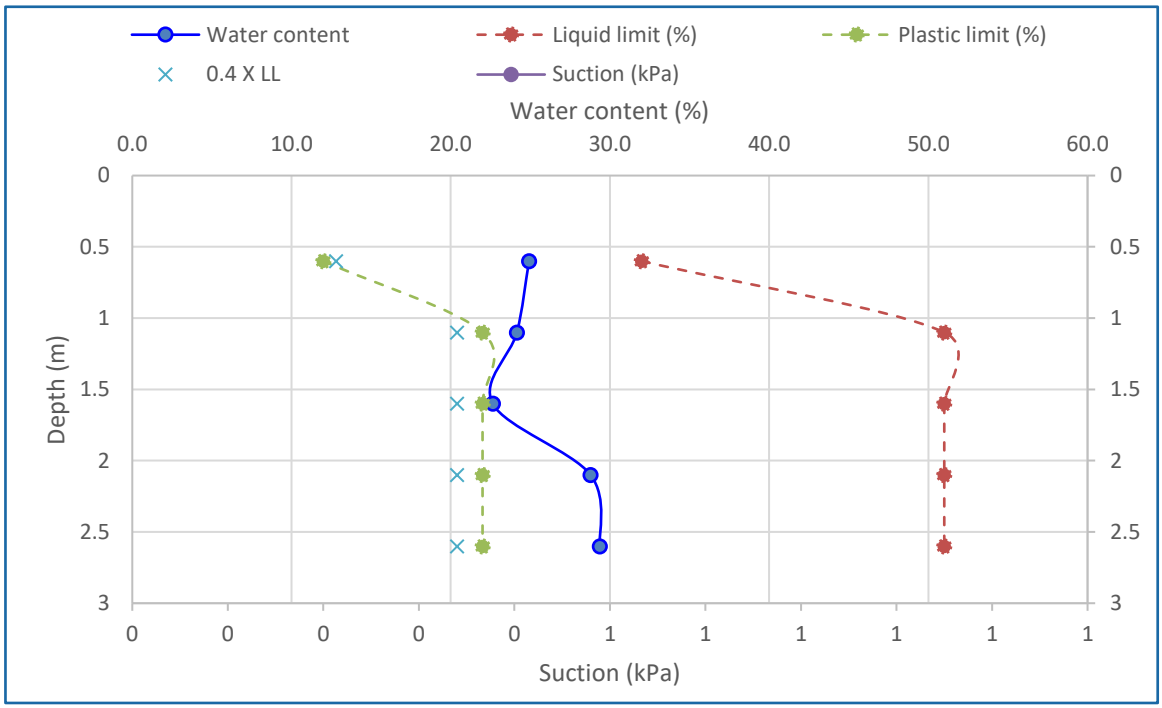
If you would like to provide feedback on this report or any laboratory services or performance, please complete the form below. All appropriate feedback will be used in the continual improvement of laboratory services.

Laboratory feedback form

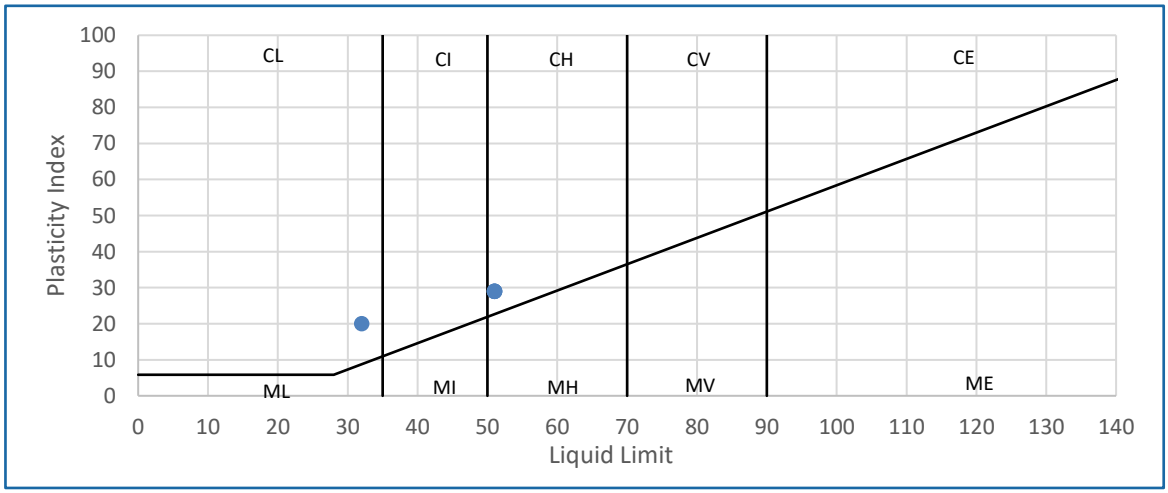
Environmental Services

Samples from BH1

Lab Ref	Depth (m)	WC (%)	LL (%)	PL (%)	PI (%)	.425 mm(%)	mod. PI (%)	Av. Suc. (kPa)	Description
1	0.6	24.9	32	12	20	92	18		Soft orange-brown/grey sandy CLAY with rare gravel. Gravel is fine and medium.
2	1.1	24.2	51	22	29	90	26		Soft to firm reddish-brown/grey silty CLAY with rare gravel. Gravel is fine and medium.
3	1.6	22.6	51	22	29	90	26		Firm dark grey silty CLAY with rare gravel. Gravel is fine and medium.
4	2.1	28.8	51	22	29	90	26		Soft to firm dark grey silty CLAY with rare gravel. Gravel is fine and medium.
5	2.6	29.4	51	22	29	90	26		Soft to firm dark grey silty CLAY with rare gravel. Gravel is fine and medium.



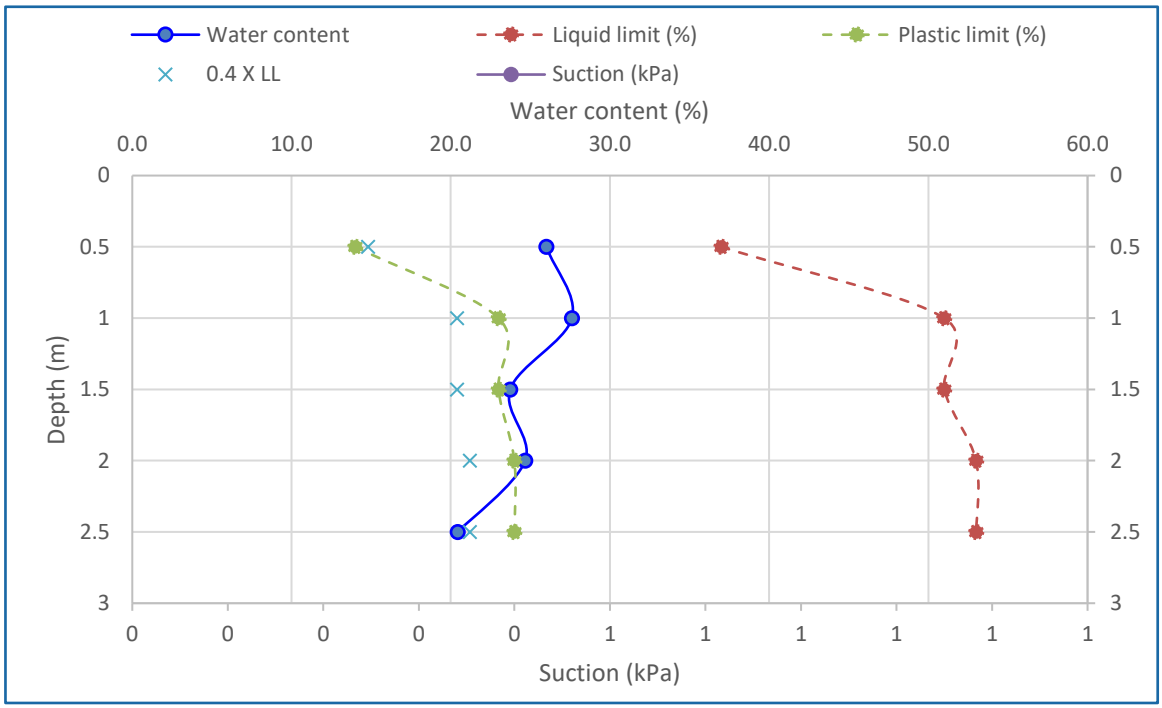
Plasticity Chart for Casagrande Classification



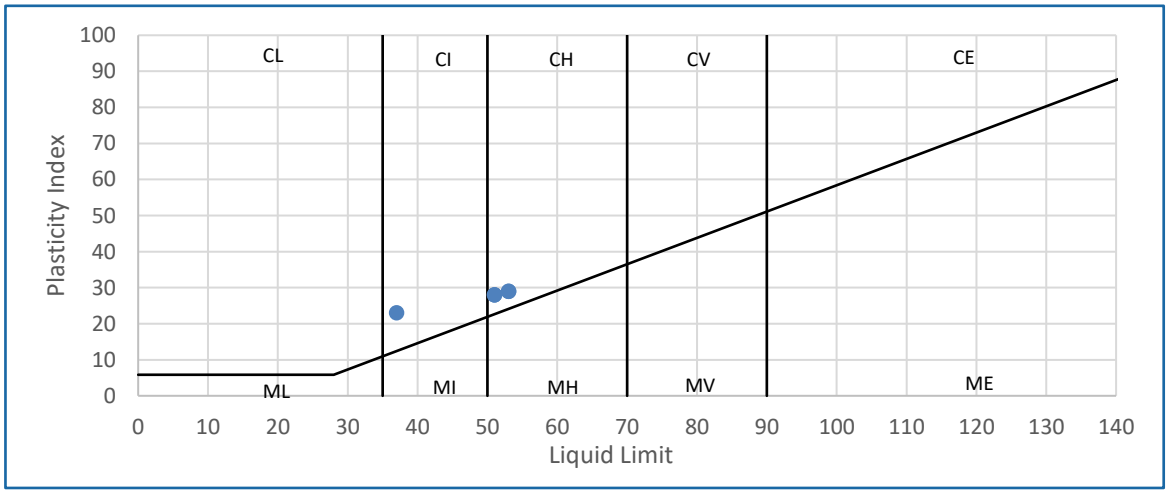
Environmental Services

Samples from BH2

Lab Ref	Depth (m)	WC (%)	LL (%)	PL (%)	PI (%)	.425 mm(%)	mod. PI (%)	Av. Suc. (kPa)	Description
6	0.5	26.0	37	14	23	93	21		Soft orange-brown sandy CLAY with rare gravel. Gravel is fine and medium.
7	1	27.6	51	23	28	97	27		Soft to firm reddish-brown/grey silty CLAY with rare gravel. Gravel is fine and medium.
8	1.5	23.7	51	23	28	97	27		Soft to firm reddish-brown/grey silty CLAY with rare gravel. Gravel is fine and medium.
9	2	24.7	53	24	29	99	29		Soft dark grey/black silty CLAY with rare gravel. Gravel is fine and medium.
10	2.5	20.4	53	24	29	99	29		Soft dark grey silty CLAY with rare gravel. Gravel is fine and medium.



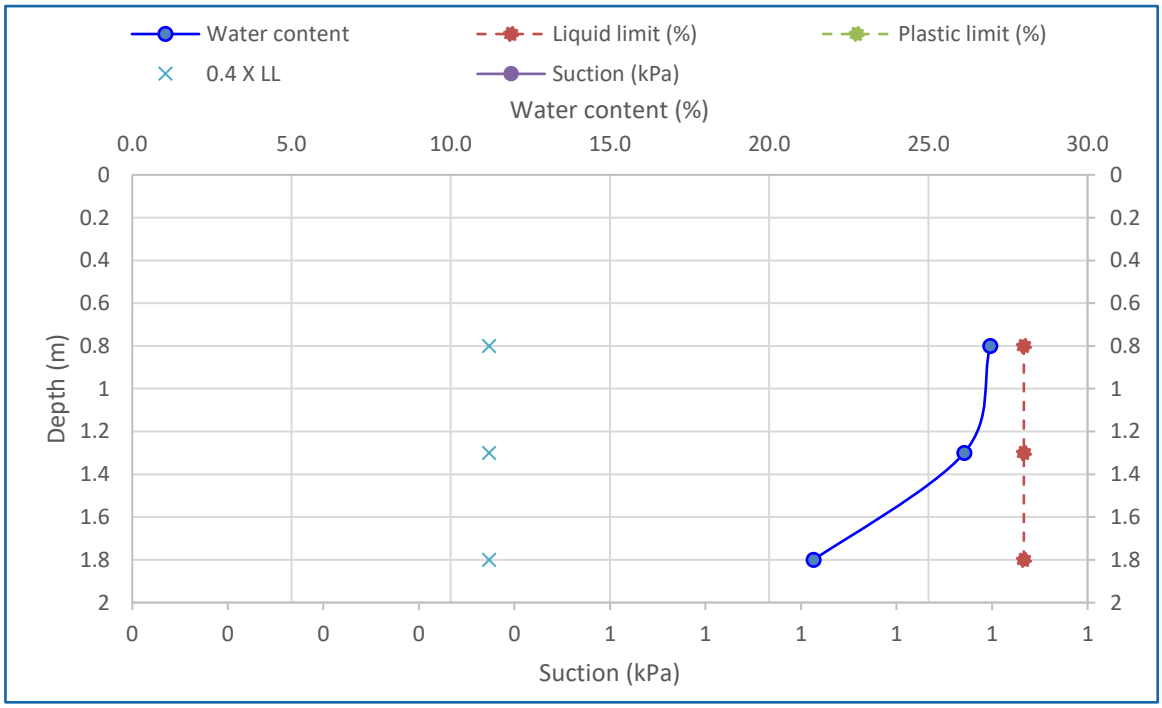
Plasticity Chart for Casagrande Classification



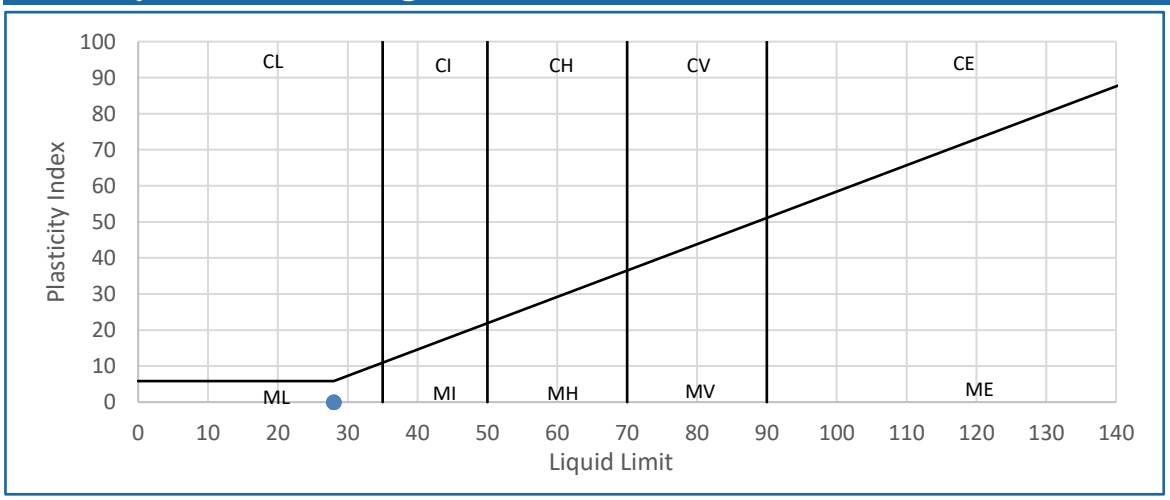
Environmental Services

Samples from BH3

Lab Ref	Depth (m)	WC (%)	LL (%)	PL (%)	PI (%)	.425 mm(%)	mod. PI (%)	Av. Suc. (kPa)	Description
11	0.8	26.9	28	NP	NP	82	NP		Wet orange-brown clayey SAND with rare gravel. Gravel is fine and medium.
12	1.3	26.1	28	NP	NP	82	NP		Wet orange-brown clayey SAND with rare gravel. Gravel is fine and medium.
13	1.8	21.4	28	NP	NP	82	NP		Wet orange-brown clayey SAND with rare gravel. Gravel is fine and medium.



Plasticity Chart for Casagrande Classification



Deviating Samples

The table below details any samples deviating from laboratory procedure or deviating in condition to an extent whereby the validity of results may be affected. A test denoted "I" is likely to have had testing abandoned but where a test result has been provided a non-standard procedure may have been used, details of which will be provided upon request.

LAB REF	CONDITION	WC	ATT	SUC	OED
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

Key

D	Delay in sample receipt
C	Contaminated sample
B	Sample not bagged correctly
S	Sample too sandy (unsuitable for testing)
G	Sample too gravelly (unsuitable for testing)
V	Sample too soft (unsuitable for preparation)
L	Sample too silty
I	Insufficient sample
O	Too much organic content (unsuitable for testing)
N	Non-standard procedure used
H	Sample depth too shallow
X	Testing result too similar to above sample

References

The following provides a brief interpretation of the test results by comparison of the results to published classifications. The Atterberg Limit test may be used to classify the plasticity of soils; the plasticity classes defined in BS5930:2015 "Code of Practice for Site Investigations" are as follows.

CL (ML)	CLAY and CLAY/SILT of Low plasticity
CI (MI)	CLAY and CLAY/SILT of Intermediate plasticity
CH (MH)	CLAY and CLAY/SILT of High plasticity
CV (MV)	CLAY and CLAY/SILT of Very High plasticity
CE (ME)	CLAY and CLAY/SILT of Extremely High plasticity
O	The letter O is added to prefixes to symbolise a significant proportion of organic matter.
NP	Non-plastic

The Plasticity Index (PI) Result obtained from the Atterberg Limit tests may also be used to classify the potential for volume change of fine soils, in accordance with the National House Building Council's standards - Chapter 4.2 (2003) "Building Near Trees", as summarised below.

Modified PI < 10	Non Classified.
Modified PI = 10 to <20	Low volume change potential.
Modified PI = 20 to <40	Medium volume change potential.
Modified PI = 40 or greater	High volume change potential.

The 2003 edition of Chapter 4.2 also permits use of the Plasticity Index without modification. The classifications for this are grouped by soil type (soils with similar visual soils description and using unmodified Plasticity Indices.

ROOT IDENTIFICATION

for Subsidence Management Services

36 Yeomead, Nailsea, Bristol, BS48 1JA

Client:	Subsidence Management Services
Client Contact:	Brad Jenkins
Claim Number:	4502072477
Client Reference:	IFS-AVI-SUB-22-0101951
Policy Holder:	Mr Gordon Lindley
Report Date:	9 January 2023
Our Ref:	R48277

Intec
Parc Menai, Bangor,
Gwynedd, North Wales
LL57 4FG
Tel: 01248 672652

Sub Sample	Species Identified		Root Diameter	Starch
TP/BH1:				
0.5-1.5m	*Quercus* spp.	1	6 mm	Abundant
TP/BH2:				
0.5-1.5m	*Quercus* spp.	2	1 mm	Abundant
TP/BH3:				
0.8-1.8m	*Quercus* spp.	3	2 mm	Abundant

Comments:

1 - Plus 3 others also identified as *Quercus* spp.
2 - Plus 3 others also identified as *Quercus* spp.
3 - Plus 1 other also identified as *Quercus* spp.

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

Signed: M D Mitchell

Unless we are otherwise instructed in writing, the above sample material will normally be disposed of 6 years after the date of this report.

SubsNetUK

Drainage Investigation Report

For Subsidence Management Services

Client Mr G Lindley

Risk Address: 36 Yeomead, Bristol, BS48 1JA

Visit Date: 18th November 2022

Client Reference: IFS-AVI-SUB-22-0101951

Our Reference: C67595 D23713

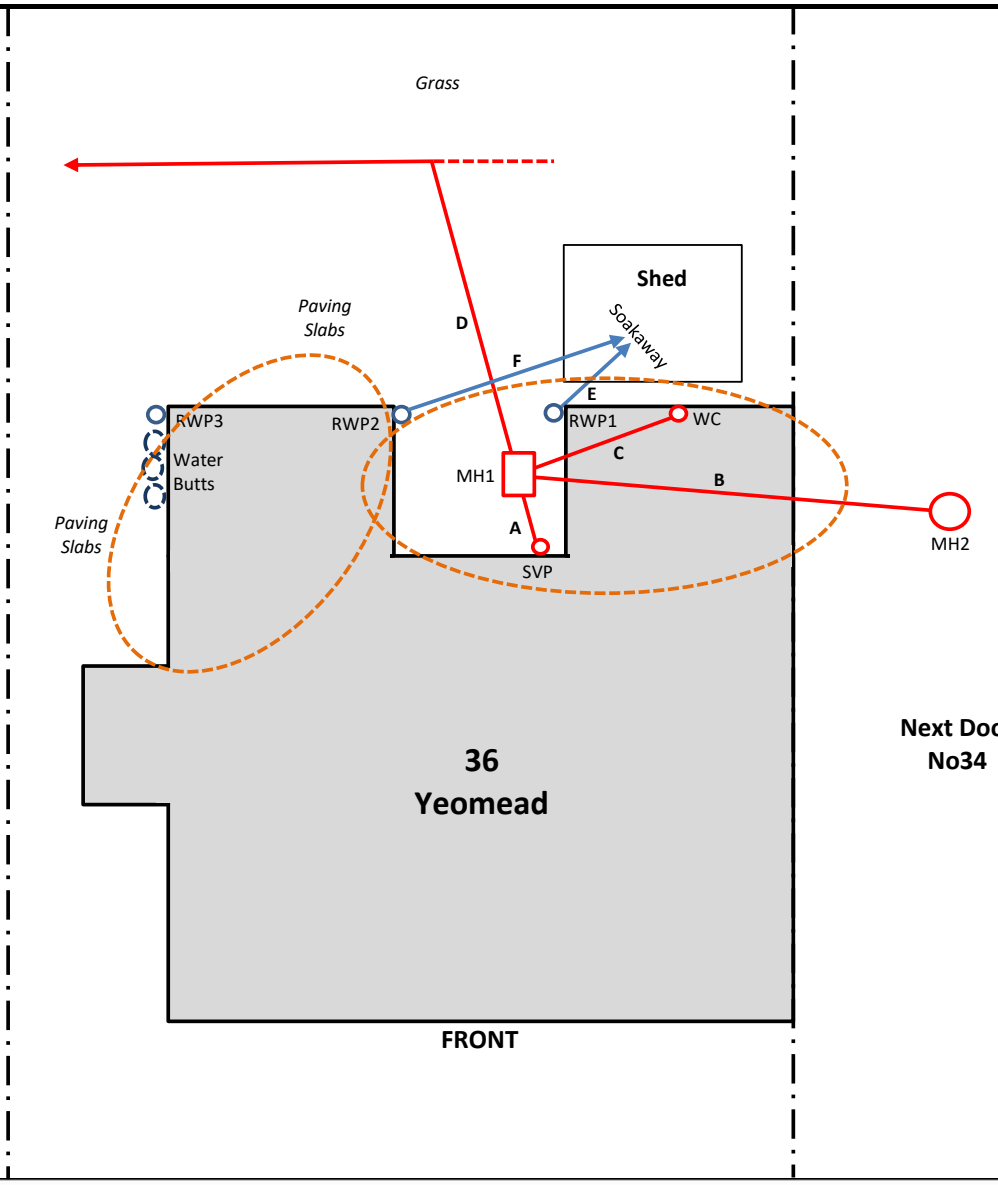
Report Date: 23rd November 2022

Report Content:

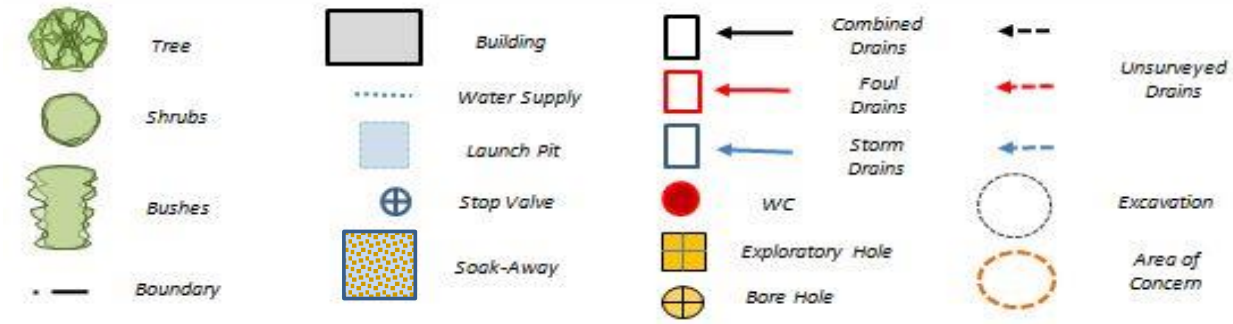
SubsNetUK

Site Plan

SubsNetUK



Key



Notes:	
Address:	36 Yeomead, Bristol, BS48 1JA

CCTV Survey

RUN	Start From :	MH1	Finish at :	SVP	Pipe Ø:	100mm
A	Invert Level (m):	0.2	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner
Distance	*Code*	*Hydraulic Test - Not Tested*				
0.00	SN	Start Node from MH1				
0.00	WL	Water Level 0%				
0.80	FN	Finish node at SVP				
RUN	**Start From :**	MH1	**Finish at :**	MH2	**Pipe Ø:**	100mm
B	Invert Level (m):	0.2	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Local Authority
Distance	*Code*	*Hydraulic Test - Pass*				
0.00	SN	Start Node from MH1				
0.00	WL	Water Level 0%				
11.30	FN	Finish node at MH2				
RUN	**Start From :**	MH1	**Finish at :**	WC	**Pipe Ø:**	100mm
C	Invert Level (m):	0.2	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	B	Direction:	Upstream	Responsibility:	Home Owner
Distance	*Code*	*Hydraulic Test - Fail*				
0.00	SN	Start Node from MH1				
0.00	WL	Water Level 0%				
0.20	JDM	Joint Displaced (Medium)				
0.40	JDM	Joint Displaced (Medium)				
2.40	FN	Finish Node at WC				
RUN	**Start From :**	MH1	**Finish at :**	Downstream Node	**Pipe Ø:**	100mm
D	Invert Level (m):	0.2	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	B	Direction:	Downstream	Responsibility:	Local Authority
Distance	*Code*	*Hydraulic Test - Not Tested*				
0.00	SN	Start Node from MH1				
0.00	WL	Water Level 0%				
0.15	CC	Crack Circumferential				
6.00	FN	Finish Node - Beyond Area of Concern				
RUN	**Start From :**	RWP1	**Finish at :**	Soakaway	**Pipe Ø:**	100mm
E	Invert Level (m):	N/a	Invert Level (m):	N/a	Material:	Clay
STORM	Condition grade:	A	Direction:	Downstream	Responsibility:	Home Owner
Distance	*Code*	*Hydraulic Test - Not Tested*				
0.00	SN	Start Node from RWP1				
0.00	WL	Water Level 0%				
1.60	FN	Finish node at Soakaway				
RUN	**Start From :**	RWP2	**Finish at :**	Soakaway	**Pipe Ø:**	100mm
F	Invert Level (m):	N/a	Invert Level (m):	N/a	Material:	Clay
STORM	Condition grade:	A	Direction:	Downstream	Responsibility:	Home Owner
Distance	*Code*	*Hydraulic Test - Not Tested*				
0.00	SN	Start Node from RWP2				
0.00	WL	Water Level 0%				
1.60	FN	Finish node at Soakaway				

Address: 36 Yeomead, Bristol, BS48 1JA

SubsNetUK

Drainage Overview

SubsNetUK

Following the receipt of your instruction, we attended site to carry out a CCTV survey.

The CCTV survey was undertaken in general accordance with the Manual of Sewer Classification and the WRc Drain Repair Book.

The following presents a summary of the findings with recommendations to repair and/ or return the drains to a serviceable state, where necessary.

Drain Run A: MH1 Upstream to SVP
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Not Tested
CCTV Survey Result: No structural damage
Recommended Repair:
No repairs have been recommended as the drain line was found to be free from defects.

Drain Run B: MH1 Upstream to MH2
Pipe Diameter: 100mm
Responsibility: LWA
Hydraulic Pressure Test: Pass
CCTV Survey Result: No structural damage
Recommended Repair:
No repairs have been recommended as the drain line is shared and is therefore a transferred asset. The responsibility and maintenance of this drain falls with the Local Water Authority.

Drain Run C: MH1 Upstream to WC
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Fail
CCTV Survey Result: Structural damage
Recommended Repair:
Prepare the drain and line from MH1 upstream to WC, approx 2.5m

Drain Run D: MH1 to Downstream
Pipe Diameter: 100mm
Responsibility: LWA
Hydraulic Pressure Test: Not tested
CCTV Survey Result: Structural damage
Recommended Repair:
No repairs have been recommended as the drain line is shared and is therefore a transferred asset. The responsibility and maintenance of this drain falls with the Local Water Authority.

Drain Run E: RWP1 Downstream to Soakaway
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Not Tested
CCTV Survey Result: No structural damage
Recommended Repair:
No repairs have been recommended as the drain line was found to be free from defects.

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Drainage Overview 2

SubsNetUK

Drain Run F: RWP2 Downstream to Soakaway
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Not Tested
CCTV Survey Result: No structural damage
Recommended Repair:
No repairs have been recommended as the drain line was found to be free from defects.

NOTE: The re-instatement will be carried out on a like-for-like basis but where concrete or tarmac has been re-instated these surfaces will not match to the existing surface and will be seen as its new material.

NOTES
RWP3 is discharging into a water butt - see photos

		Result	Notes
Water Main Test		**PASS**	

Address: 36 Yeomead, Bristol, BS48 1JA

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Photographs

SubsNetUK

Address: 36 Yeomead, Bristol, BS48 1JA

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Quote

SubsNetUK

RUN / LOCATION: Run C

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1135	Drain Lining - Initial Set-Up Fee (0-3.0m)	nr	£332.64	1.00	£332.64
UK1133	Van pack HPWJ & CCTV in preparation of lining	nr	£148.44	1.00	£148.44
				Total (Excl VAT)	£481.08

Address: 36 Yeomead, Bristol, BS48 1JA