

Arboricultural Consultancy for Lloyds Bank

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 Roger Wood | Address | 9 Strathbrook Road, London, SW16 3AT | | |
| Client | Subsidence Management Services | Contact | Nigel Buxton | Claim No. | IFS-LBG-SUB-22-0102319 |
| ES Ref | SA-252825 | Consultant | Keith Burgess | Contact No. | 0330 380 1036 |
| Report Date | 11/05/2023 | | | | |

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 semi-detached house. It has been extended with a single-storey extension to the rear. The property occupies a level site with no adverse topographical features.

We understand that the current damage relates to the front elevation 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? | Yes |
| Other third party Mitigation involved? | Yes |
| Recovery | |
| Is there a potential recovery action? | Yes |

| Treeworks | |
|---|--------------------------------|
| Local Authority | Lambeth London Borough 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. | |

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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 adjacent 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 Elder (T1) is considered the dominant feature proximate to the focal area(s) of movement and accordingly, where vegetation is confirmed as being causal, we have identified it as the primary cause of the current subsidence damage.

H1 (Euonymus) is also considered to retain a contributory influence, albeit in a secondary capacity when compared to the above.

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 T1 in conjunction with management, to include partial removal of a section of H1 (as detailed) 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.

| | |
|--|-----|
| 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? | No |

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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 |
|----------|----------|---------|--------------------|----------------------------|-----------------|----------------------|---|
| H1 | Euonymus | 1 | 1.6 | 1.4 | A - Third Party | Maintain as detailed | Remove section of hedge to achieve a minimum clearance of 2.5m to the insured property; do not chemically treat stumps due to translocation risk. Where such a risk exists, we advise that any emergent regrowth is removed annually. Maintain retained section thereafter at broadly current dimensions by way of regular pruning. |
| T1 | Elder | 1 | 2.5 | 1.6 | C - Insured | Remove | Remove close to ground level and treat stump to inhibit regrowth. |

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 |
|----------|----------------------|---------|--------------------|----------------------------|---------------------|-----------------------------|---|
| T2 | Maple (Japanese) | 1 | 1.5 | 3.5 | A - Third Party | Action to avoid future risk | Maintain at broadly current dimensions by way of regular pruning. |
| T3 | Plum (Purple leafed) | 1 | 5 | 6.5 | B - Local Authority | Action to avoid future risk | Maintain at, or below current dimensions by way of regular pruning. |
| TG1 | Mixed species group | 1 | 4 | 2.5 | C - Insured | Action to avoid future risk | Mixed species including Olive & Maple. Maintain at broadly 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

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8. Photographs



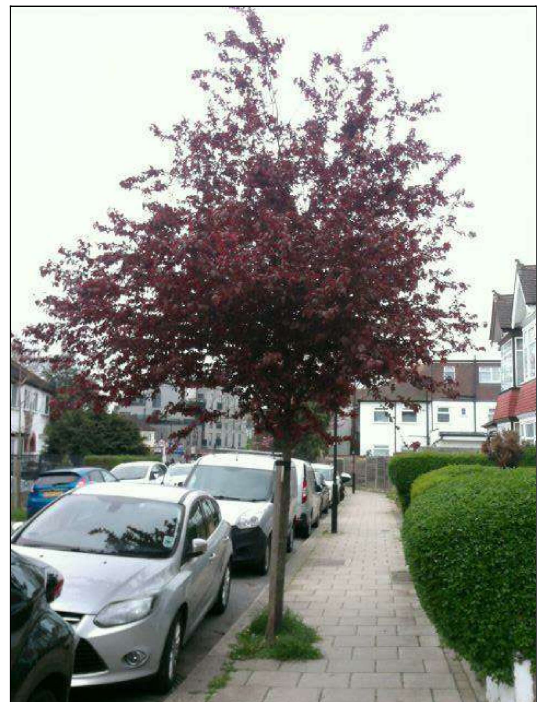
T1 - Elder



H1 - Euonymus



T2 - Maple (Japanese)



T3 - Plum (Purple leaved)

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TG1 - Mixed species group

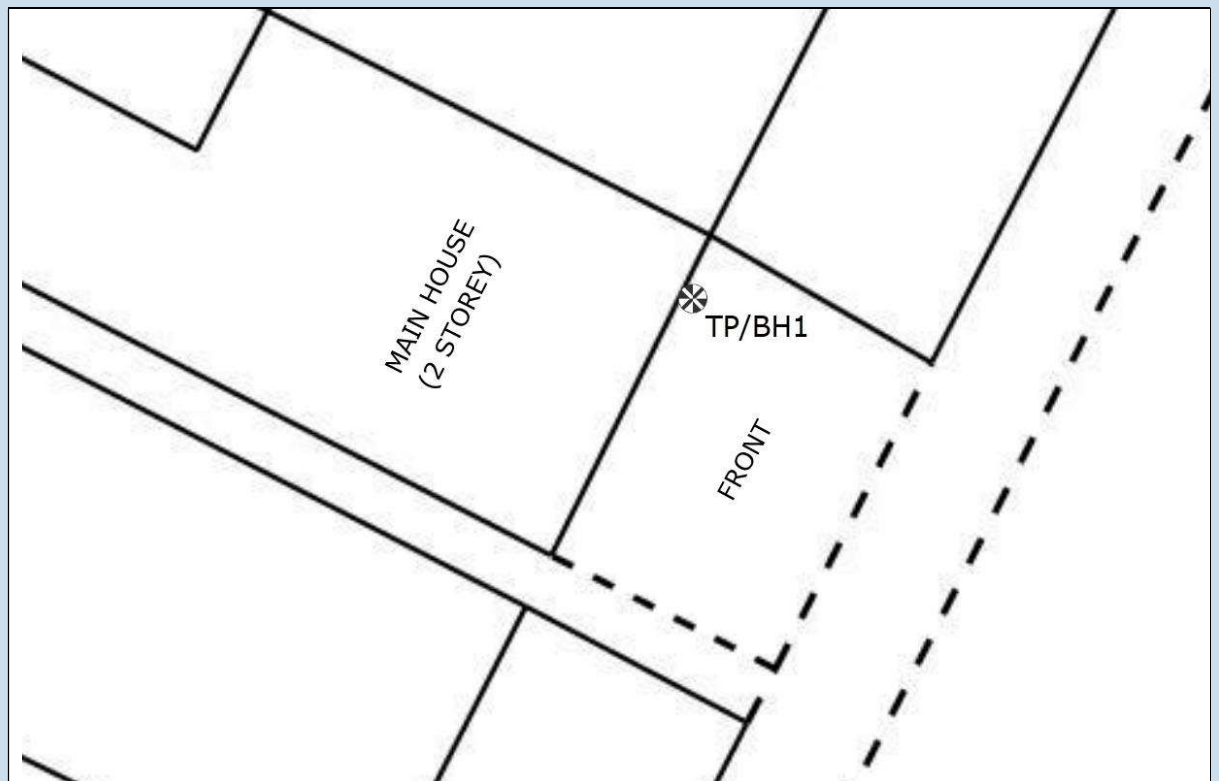
GEOTECHNICAL

for Subsidence Management Services

9 Strathbrook Road, London, SW16 3AT

Client: Subsidence Management Services
Client Contact: Nigel Buxton
Client Ref: IFS-LBG-SUB-22-0102319
Policy Holder: Mr Roger Wood
Report Date: 22 May 2023
Our Ref: C70617G32267

Site Plan

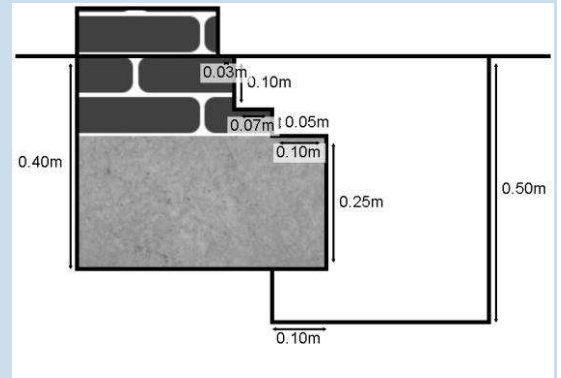


| | | | | | | | | | |
|--|----------------------|--|---------------------|--|--------------------|--|-----------------------|--|------------------|
| | Borehole | | Foul Water Drain | | Foul Manhole | | Foul Rodding Point | | Foul Vent Pipe |
| | Trial Pit / Borehole | | Surface Water Drain | | Rain Water Manhole | | Surface Rodding Point | | Rain Water Gully |
| | Trial Pit | | Combined Drain | | Combined Manhole | | | | |

TP/BH1 Foundation Detail and Borehole Log

Foundation Detail

Bay foundation comprised of stepped brick to 150mm bgl with a total projection of 100mm from the elevation, bearing on concrete to 400mm bgl with a total projection of 200mm from the elevation. Underside of foundation (USF) was exposed to 100mm back from the face of the foundation and probed 500mm back from the face of the foundation.



| WS | Samples | | Tests | | Legend | Stratum Description and Observations |
|----|---------|-------------|-------|-----------|------------------------------|---|
| | Type | Depth (m) | Type | Depth (m) | | |
| | | | | | 0 | TOPSOIL with white decor stone. |
| | | | | | | MADE GROUND: Compact dark brown sandy gravelly CLAY/ SILT. |
| | R | 0.50 - 1.50 | PEN | 0.50 | HP=1.4 (1.0,1.5,1.5,1.5,1.5) | Soft orangish brown very sandy very silty CLAY. |
| | D | 0.50 - 1.00 | | | | |
| | | | | | 1.0 | Soft orangish brown mottled grey very sandy very silty CLAY with occasional fine to medium sandstone. |
| | D | 1.00 - 1.50 | PEN | 1.00 | HP=1.6 (1.5,1.5,1.5,1.5,2.0) | |
| | | | | | 1.5 | Firm orangish brown mottled grey very sandy very silty CLAY with occasional fine to medium sandstone. |
| | D | 1.50 - 2.00 | PEN | 1.50 | HP=2.1 (2.0,2.0,2.0,2.0,2.5) | |
| | | | | | 2.0 | Firm orangish brown mottled grey very sandy very silty CLAY. |
| | D | 2.00 - 2.10 | PEN | 2.00 | HP=2.5 (2.5,...) | |
| | | | MP | 2.10 | Refusal 50 for 0mm | |

-- End of borehole at 2.10m --
 Trial pit excavated to 0.50m bgl. Borehole completed by mech window sampler. Roots encountered to 1.5m bgl. Groundwater strikes not encountered. PEN = Hand Penetrometer (kg/sq cm). MP = Mackintosh Probe (blows per 75mm).

Site Observations

GENERAL:

Site Investigation works (TP/BH 1) undertaken on 10 May 2023 during dry weather (i.e. no rain).

HEALTH AND SAFETY:

Negative signal obtained in Power, Radio and Genny mode on the Cable Avoidance Tool (CAT) (TP/BH1).

FOUNDATIONS:

Bay foundation was exposed and the underside of foundation (USF) recorded to be 0.4m bgl (TP/BH 1).

BOREHOLE:

Hand Held Percussive Window Sampler and Mackintosh Probe refusal at 2.1m bgl due to density within the clay (TP/BH 1). Borehole terminated. No further works undertaken.

ROOTS:

Roots encountered to 1.5m bgl (TP/BH 1).

IN SITU TESTING:

Hand Penetrometer (PEN) undertaken at 0.5m bgl (TP/BH 1) within the window sampler and thereafter in the window sampler at maximum 0.5m intervals.

Mackintosh Probe (MP) test undertaken at 2.1m bgl (TP/BH 1) within the window sample borehole only with no further Mackintosh Probe (MP) testing undertaken.

WATER STRIKES:

No water strikes (NWS) encountered (TP/BH 1).


SOIL ANALYSIS

for Subsidence Management Services


9 Strathbrook Road, London, SW16 3AT

Client: Subsidence Management Services
Claim Number: 500393172
Policy Holder: Mr Roger Wood
Report Date: 05/06/2023
Our Ref: L25918

Compiled By:

| Name | Position | Signature |
|--------------|-----------------------|--|
| Saira Dougan | Laboratory Technician |  |

Checked By:

| Name | Position | Signature |
|------------|--------------------|---|
| Bob Walker | Laboratory Manager |  |

Date samples received: 12-May-23
Water Content Test Date: 23-May-23
Atterberg Limits Test Date: 01-Jun-23
Suction Test Date: 05-Jun-23



9265

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.

This Soil Analysis Report may not be reproduced, in part or in full, without written approval of the laboratory.

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.

The Filter Paper Suction Test is undertaken in accordance with the BRE paper IP4/93 (corrected) 'A Method of Determining the State of Desiccation in Clay Soils'

Unless otherwise stated the moisture content of the filter paper was determined after 7 days contact with the sample and the test was prepared from a remoulded disturbed sample.

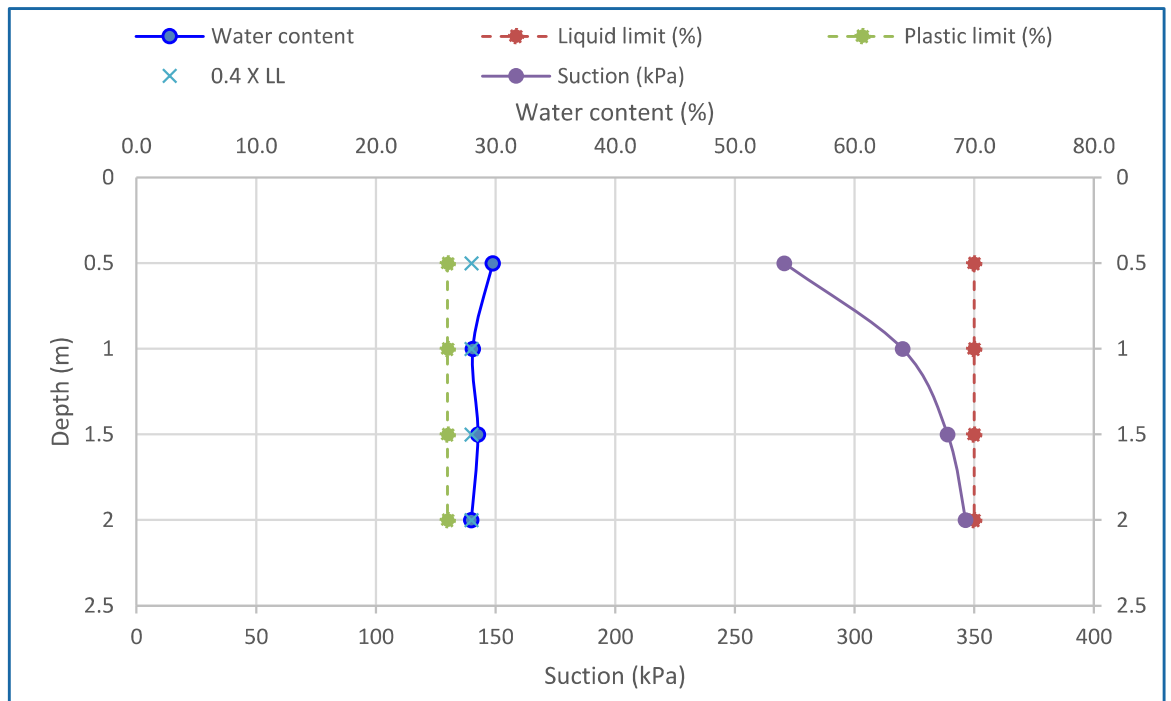
The Filter Paper Suction Tests are conducted in a controlled environment within a temperature range of 18°C and 22°C

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.

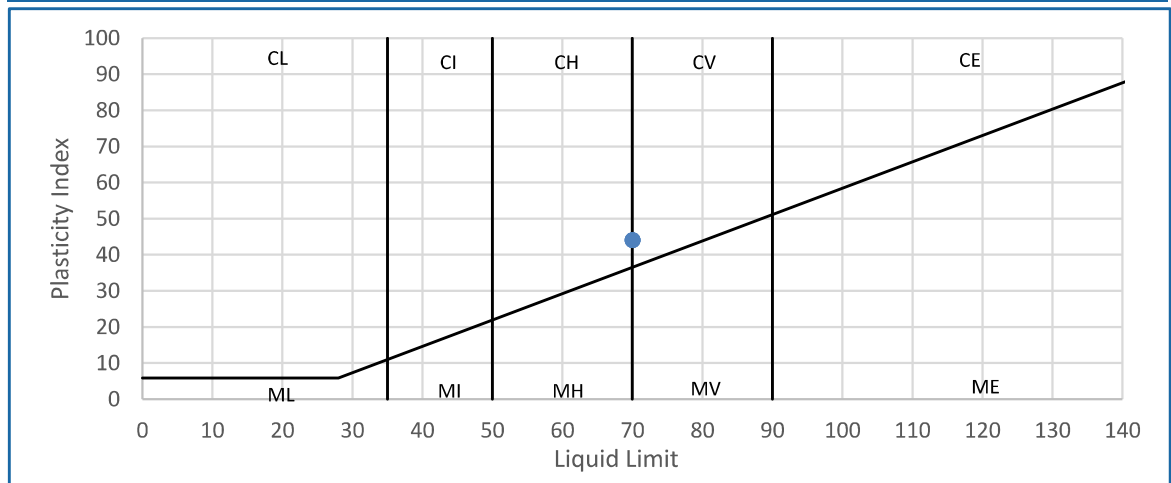
[Laboratory feedback form](#)

Samples from BH1

| Lab Ref | Depth (m) | WC (%) | LL (%) | PL (%) | PI (%) | .425 mm(%) | mod. PI (%) | Av. Suc. (kPa) | Description |
|---------|-----------|--------|--------|--------|--------|------------|-------------|----------------|---|
| 1 | 0.5 | 29.8 | 70 | 26 | 44 | 98 | 43 | 271 | Firm brown CLAY with rare gravel. Gravel is fine. |
| 2 | 1 | 28.1 | 70 | 26 | 44 | 98 | 43 | 320 | Firm brown CLAY with rare gravel. Gravel is fine. |
| 3 | 1.5 | 28.5 | 70 | 26 | 44 | 98 | 43 | 339 | Firm brown CLAY with rare gravel. Gravel is fine. |
| 4 | 2 | 28.0 | 70 | 26 | 44 | 98 | 43 | 346 | Firm brown CLAY with rare gravel. Gravel is fine. |



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 | | | | | |

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

9 Strathbrook Road, London, SW16 3AT

Client: Subsidence Management Services
Client Contact: Nigel Buxton
Claim Number: 500393172
Client Reference: IFS-LBG-SUB-22-0102319
Policy Holder: Mr Roger Wood
Report Date: 17 May 2023
Our Ref: R50996



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 | <i>Euonymus</i> spp. | 1 | 1 mm Moderate |

Comments:

1 - Plus 3 others also identified as *Euonymus* spp.

Euonymus spp. are deciduous or evergreen garden shrubs, including spindleberries.

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.

Drainage Investigation Report

For Subsidence Management Services

Client Lloyds Banking Group

Risk Address: 9 Strathbrook Road, London, SW16 3AT

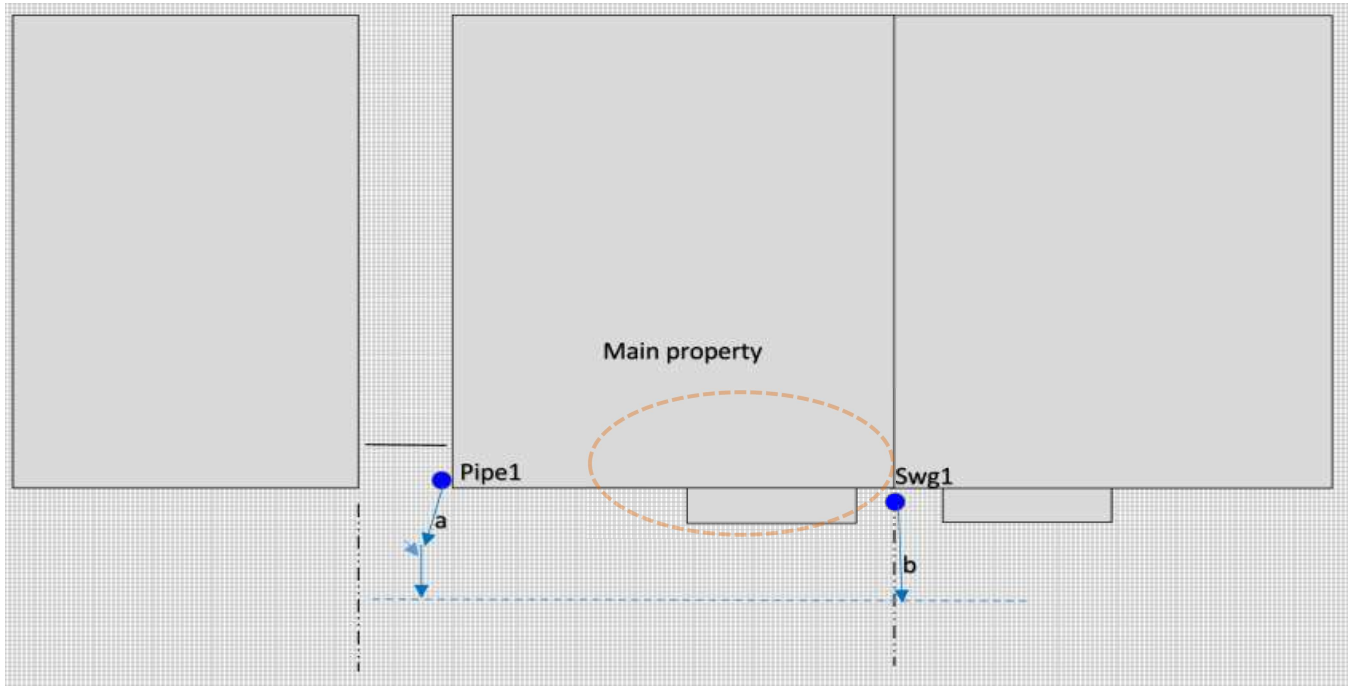
Visit Date: 24/02/2023

Client Reference: IFS-LBG-SUB-22-0102319




















Our Reference: C70617 D24788

Report Date: 13/04/2023

Report Content: Front Page
Site Plan
CCTV Coding
Drain Overview
Quote



Key

| | | | | | | | |
|---|----------|---|--------------|---|------------------|---|-------------------|
|  | Tree |  | Building |  | Combined Drains |  | Unsurveyed Drains |
|  | Shrubs |  | Water Supply |  | Foul Drains |  | Unsurveyed Drains |
|  | Bushes |  | Launch Pit |  | Storm Drains |  | Excavation |
|  | Boundary |  | Stop Valve |  | WC |  | Area of Concern |
| | |  | Soak-Away |  | Exploratory Hole | | |
| | | | |  | Bore Hole | | |

Notes:

Address:

9 Strathbrook Road, London, SW16 3AT

| | | | | | | |
|-----------------|--------------------------|---|--------------------------|------------|------------------------|------------------|
| RUN | Start From : | Pipe1 | Finish at : | Main line | Pipe Ø: | 75mm |
| A | Invert Level (m): | n/a | Invert Level (m): | n/a | Material: | Clay |
| STORM | Condition grade: | C | Direction: | Downstream | Responsibility: | Home Owner / LWA |
| <i>Distance</i> | <i>Code</i> | <i>Hydraulic Test - Fail</i> | | | | |
| 0.00 | SN | Start Node from Pipe1 | | | | |
| 0.40 | BP | Broken Pipe | | | | |
| 1.98 | JX | Defective Junction | | | | |
| 1.98 | REM | Remark - Run becomes shared from this point | | | | |
| 2.88 | BP | Broken Pipe | | | | |
| 4.07 | FN | Finish Node at Main line | | | | |
| RUN | Start From : | SWG1 | Finish at : | Main line | Pipe Ø: | 100mm |
| B | Invert Level (m): | n/a | Invert Level (m): | n/a | Material: | Plastic |
| STORM | Condition grade: | A | Direction: | Downstream | Responsibility: | Local Authority |
| <i>Distance</i> | <i>Code</i> | <i>Hydraulic Test - Pass</i> | | | | |
| 0.00 | SN | Start Node from SWG1 | | | | |
| 0.49 | MC | Material of drain changes at this point to Clay | | | | |
| 0.69 | FN | Finish Node at Main line | | | | |
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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: Pipe1 Downstream to Main line

Pipe Diameter: 75mm

Responsibility: Home Owner / Local Water Authority

Hydraulic Pressure Test: Fail

CCTV Survey Result: Structural damage

Recommended Repair:

- 1) To excavate and replace existing Rest bend at base of RWP including 1m of adjacent pipework.
- 2) To back-fill and reinstate and ensure all is left clean and tidy on completion.

Drain Run B: SWG1 Downstream to Main line

Pipe Diameter: 100mm

Responsibility: Local Water Authority

Hydraulic Pressure Test: Pass

CCTV Survey Result: No structural damage

Recommended Repair:

No repairs have been recommended as the drain line was found to be free from defects.

| Water Main Test | Water Meter | Result | Notes |
|-----------------|-------------|--------|----------------------------------|
| | | PASS | No movement found on water meter |

Address:

9 Strathbrook Road, London, SW16 3AT