

Arboricultural Consultancy for Natwest

Note⁽¹⁾: 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 (REVISED)

Insured	Ms Rosalind Franey	Address	78 Marquis Road, London, NW1 9UB	Site Visit Date	20/10/2014
Client	Subsidence Management Services	Contact	Kalwinder Bhatti	Claim No.	IFS-DLG-SUB-14-0053600
ES Ref	NL/0810141444/TP-REV1	Consultant	Will Argent	Contact No.	0330 380 1036
Report Date	29/10/2014 Revised 27/01/2015				

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.

This is a REVISED report in light of recent site investigation results and the discovery of *Leguminosae spp* roots within TP/BH1.

2. Property and Damage Description

The insured structure is a 3 storey mid-terrace house with a full basement. The property occupies a site that slopes steeply downhill from front to rear.

Damage relates to the rear bay window and the rear elevation of the insured dwelling where cracking indicates downward movement. Please refer to the engineers report for a full description of the claim history and damage.

3. Technical Reports (REVISED)

In preparing our report we have had the benefit of the following technical investigations:

Engineers Report	<input checked="" type="checkbox"/>	Roots	<input checked="" type="checkbox"/>	Foundation detail / Borehole log	<input checked="" type="checkbox"/>	Soil Analysis	<input checked="" type="checkbox"/>
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4. Action Plan

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

Tree Works	
Local Authority	Camden London Borough
TPO / Conservation Area / Planning Protection Searches	Insured: Conservation Area Adjacent & Adjoining properties: Conservation Area
Additional Comments	
Awaiting Further Instructions.	

5. Technical Synopsis (REVISED)

This report is based upon our understanding at the time of visiting the property that Subsidence Management Services engineers are satisfied that damage is due to clay shrinkage subsidence exacerbated by vegetation.

We have been instructed to advise on the causal vegetation and to deliver management proposals which will provide on-going and long term stability allowing repairs to be undertaken.

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Site Investigations indicate that the foundations to the rear elevation extend to a depth of 600mm below ground level in TP/BH1.

Foundations bear onto subsoil described within the borehole log as Firm – Brown - CLAY, thereby indicating the potential for the observed damage to be the result of clay shrinkage subsidence exacerbated by the influence of vegetation

NHBC 4.2 (2010) classifies these soils as being of HIGH plasticity i.e. capable of significant volumetric change potential in response to moisture content.

Atterberg testing for soils recovered in TP/BH1 showed the soil moisture content to at, or below, plastic limit from 600mm to 4000mm below ground level.

Moisture content comparison with plastic limit is a reliable indicator of desiccation, whilst moisture depletion at the depths identified are beyond that to which ambient soil drying can be influential and thereby indicate a vegetative influence in the movement / damage.

Site Investigations revealed the presence of roots in Trial Pit / Borehole 1 to a depth of 2600mm; this depth is in excess of foundations which extend to a depth of 600mm.

Samples of these roots were recovered from underside of foundations and throughout the borehole, these roots were identified (using anatomical analysis) as having emanated from the genus *Leguminosae spp.*

Our survey of the site identified T1 (Mimosa), which, given its position relative to the damage, it is our opinion that the roots identified emanate from this tree.

Considering engineers conclusions, results of site investigations and our observations on site, the vegetation identified below is considered causal.

In assessing the extent of damage and the potential drying influence of the vegetation on site, T1 (Mimosa) is judged to be the dominant feature and accordingly we have identified it as the principal cause of the subsidence.

Given the above information, a program of vegetation management would assist in restoring stable conditions.

Please refer to Section 6 for management prescriptions.

In order to mitigate the current damage and allow soils beneath the property to recover to a position such that an effective engineering repair solution can be implemented we recommended a program of removals as listed by this report.

Whilst we have given consideration to pruning as a means of mitigating the vegetative influence, this has been discounted.

Pruning is generally ineffective and in the context of the current claim we consider the above vegetation is simply too large and/or close for pruning to be effective.

Removal of T1 will offer the most certain and reliable arboricultural solution likely to restore long-term stability.

Replacement planting is considered appropriate however due consideration must be given to the ultimate size of the replacement and future management requirements. Species selection should be appropriate for the chosen site and ultimate tree height should not exceed 75% of the available distance to built structures.

We recommend the efficacy of the management recommendations be qualified by means of further monitoring to confirm stability.

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?	See Above
Would DNA profiling be of assistance in this case?	No

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6.0 Recommendations

6.1 Table 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
T1	Mimosa	1	8.5	10	C - Insured	Remove	Remove.
Age Cat: 1 = Younger than property; 2 = Similar age to the property; 3 = Significantly older than property							

6.2 Table 2 - Future Risk Recommendations

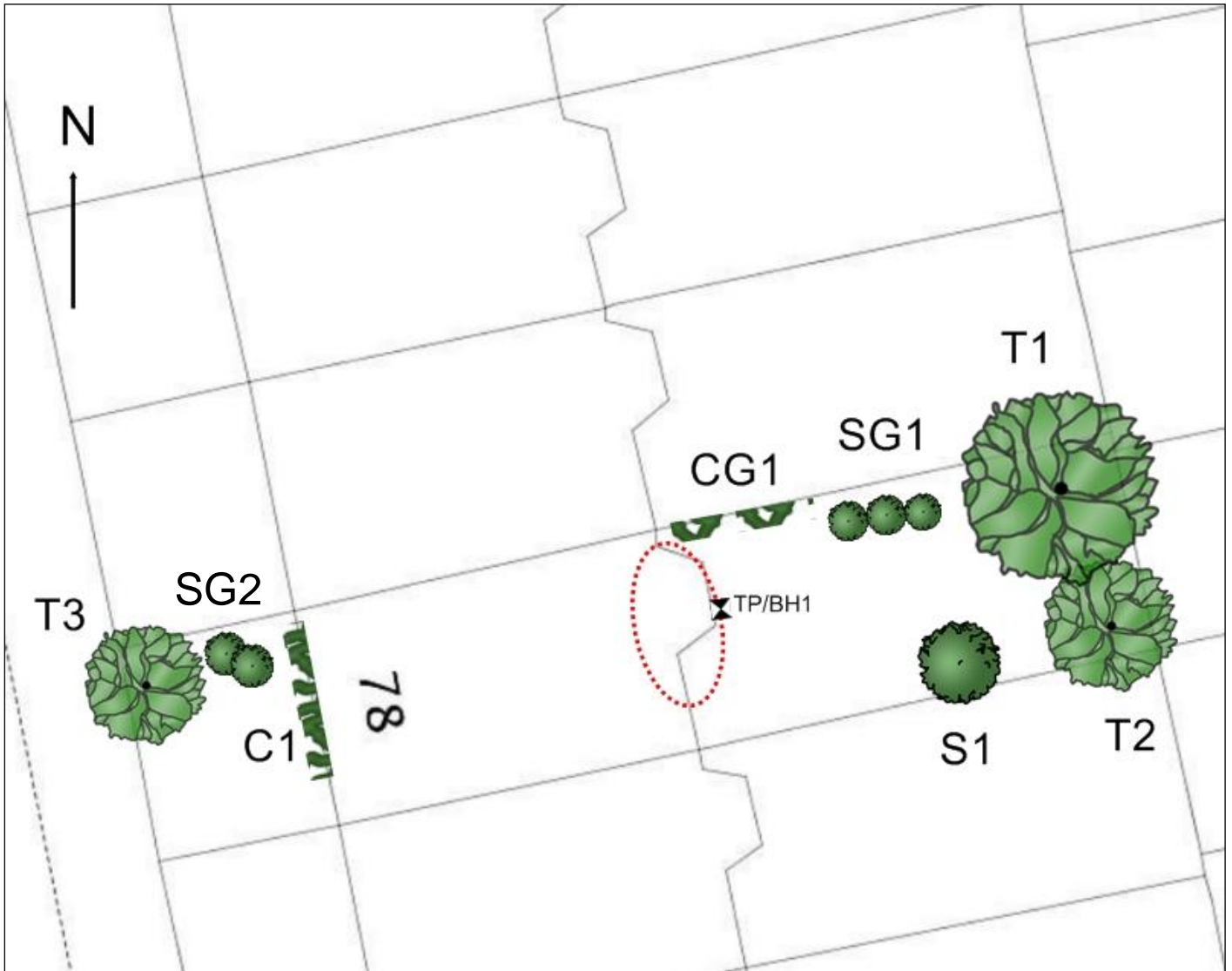
Tree No.	Species	Age Cat	Approx. Height (m)	Distance to Building (m)	Ownership	Action	Requirement
C1	Wisteria	1	4.5	0.5	C - Insured	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
CG1	Mixed species climbers (Includes; Rose and Jasmin)	1	2.5	1.7	C - Insured	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
S1	Viburnum	1	3	9.1	C - Insured	No Action	No works.
SG1	Mixed species shrubs (Includes; Willow Leafed Pear, Buxus and Privet)	1	2.8	4.4	C - Insured	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
SG2	Mixed species shrubs (Includes; Bay Laurel and Buxus)	1	2	1.4	C - Insured	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
T2	Laurel	1	5.5	10.8	C - Insured	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
T3	False Acacia	1	4.5	4.7	C - Insured	Action to avoid future risk	Do not allow to exceed 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

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7. Site Plan



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

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8. Photographs



S1 - Viburnum



T1 - Mimosa



T2 - Laurel



T2 - Laurel

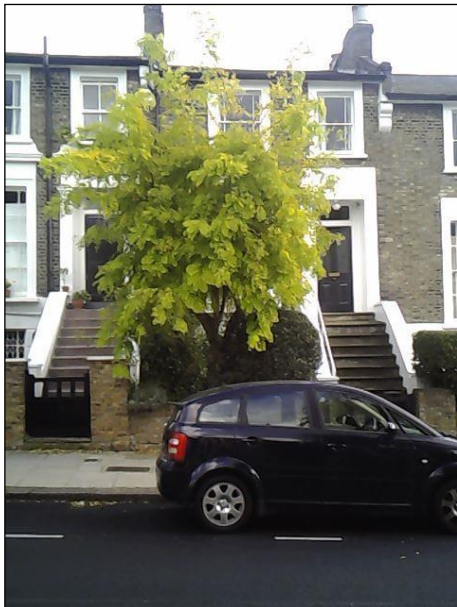
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SG1 - Mixed species shrubs



CG1 - Mixed species climbers



T3 - False Acacia



C1 - Wisteria

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SG2 - Mixed species shrubs

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Date: 27/01/2015

Property: 78 Marquis Road, London, NW1 9UB

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

Insured Property Tree Works	£950
Third Party Tree Works	£0
Provisional Sum	£0

- 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 treeworks 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 re-growth. 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".