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	[redacted]	Address	54 Hillway, London, N6 6EP		
Client	Subsidence Management Services	Contact	Benon Flemons	Claim No.	[redacted]
ES Ref	[redacted]	Consultant	Lewis Fraser	Contact No.	0330 380 1036
Report Date	18/12/2018 **Revised:** 07/03/2019				

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. Please note: this is a revised report to include the results of root analysis.

2. Property and Damage Description

The insured structure is a 3 storey mid-terrace house. It has been extended with a conservatory addition to the rear. The property occupies a site that slopes gently downhill from left to right.

Damage relates to the front elevation of the insured dwelling. Please refer to the engineers report for a full description of the claim history and damage.

3. Technical Reports

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

Engineers Report ☑

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	Camden London Borough
TPO / Conservation Area / Planning Protection Searches	Insured: Conservation Area Adjacent & Adjoining properties: Conservation Area
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 is an amended report following issue of site investigation report reference: R24815 dated 15th February 2019.

Please refer to report reference: SA-242043 dated 18th December 2018 for retrospective information.

This report is based upon our understanding at the time of visiting the property that Subsidence Management Services's 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, thereby allowing repairs to be undertaken.

From our observations on site, the footings of the subject property fall within the anticipated rooting range of a quantity of

[redacted]

vegetation located on/near the site, thereby indicating the potential for the observed damage to be the result of clay shrinkage subsidence exacerbated by the influence of vegetation.

Site Investigations revealed the presence of roots in TP/BH1 and TP/BH2 as having emanated from the genus Tilia spp. (Lime) and Pomoideae group spp. (Includes; Quince and Cotoneaster).

Our survey of the site identified T2 (Lime) and SG1 (Mixed Species Shrubs Including; Quince and Cotoneaster), given their position relative to the damage it is in our opinion that the roots identified within TP/BH1 and TP/BH2 will emanate from this vegetation.

Sample trial pits are generally small in size and the recovery of roots from such a small excavation leads us to conclude that these will not be isolated examples; there is significant potential for further root proliferation below the insured structure.

In assessing the extent of damage and the potential drying influence of the vegetation on site, T2 (Lime) is judged to be the dominant feature and accordingly we have identified it as the principal cause of the subsidence.

SG1 (Mixed Species Shrubs) cannot be discounted as contributing to the overall level of soil drying proximate to the area of damage and is therefore also considered to retain a contributory influence, albeit in a limited / secondary capacity when compared to T2.

Considering engineers conclusions, results of site investigations and our observations on site, vegetation management is considered appropriate with a view to restoring stability.
Please refer to Section 6 for management prescriptions.

Vegetation management in the form of removal and appropriate stump treatment will help to promote the restoration of long-term stability to the insured property; pruning should not be considered as representing an effective or reliable long-term alternative solution given the size and proximity of the vegetation in this instance.

Whilst we have given consideration to pruning as a means of mitigating the vegetative influence of the above, 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 T2 (Lime) and SG1 (Mixed Species Shrubs) will offer the most certain and reliable arboricultural solution likely to restore long-term stability.

However, the above tree is scheduled for robust pruning works (full pollard); this work will accord with pruning parameters as advised by published research and as such a meaningful reduction in soil drying from T2 should be expected.

It seems inevitable that the Local Authority will require sufficient time to establish the efficacy of this work following completion; further monitoring to confirm if stability has returned should be undertaken.

Where movement persists, removal of T2 (Lime) would offer the most certain and reliable arboricultural solution likely to restore long-term stability; our management prescriptions assume movement persists despite the recent pruning work.

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.

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 of vegetation management required to restore and maintain long-term stability at this property is high and its impact 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?	See Above
Would DNA profiling be of assistance in this case?	No

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
SG1	Mixed species shrubs: Includes; Quince, Lavender, Cotoneaster & Jasmin.	1	1.9	0.1	C - Insured	Remove	Note: Revised recommendation. Remove close to ground level and treat stumps to inhibit regrowth.
T2	Lime	1	14	14.5	B - Local Authority	Remove	Note: Pruning works scheduled for November 2018. 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.

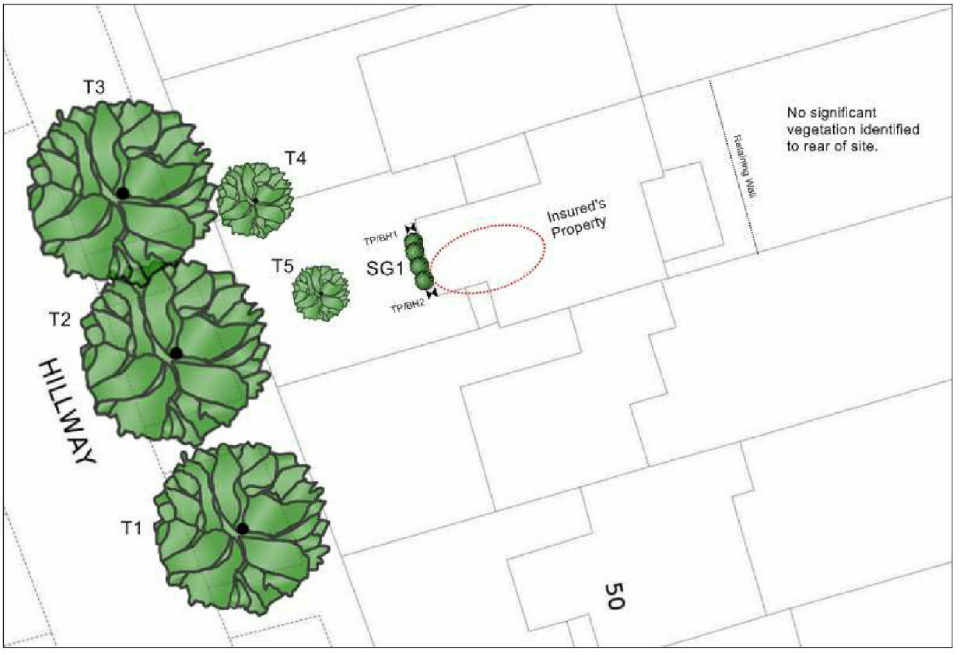
Tree No.	Species	Age Cat	Approx. Height (m)	Distance to Building (m) *	Ownership	Action	Requirement
T1	Lime	1	12.5	16.7	B - Local Authority	Action to avoid future risk	Note: Pruning works scheduled for November 2018. Re-pollard back to points of previous reduction and repeat at 3 year (max) intervals.
T3	Lime	1	14.5	16.7	B - Local Authority	Action to avoid future risk	Note: Pruning works scheduled for November 2018. Re-pollard back to points of previous reduction and repeat at 3 year (max) intervals.
T4	Birch (Silver)	1	6.5	9.8	A - Third Party	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
T5	Cedar (Blue Atlas)	1	4.9	5.2	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

[redacted]

7. Site Plan



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

[redacted]

8. Photographs

General Site

T1 - Lime

T2 - Lime

T3 - Lime

[redacted]

Arboricultural Consultancy for Aviva

T4 - Birch (Silver)

T5 - Cedar (Blue Atlas)

SG1 - Mixed species shrubs

General Site

[redacted]

Date: 07/03/2019 Property: 54 Hillway, London, N6 6EP

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

Insured Property Tree Works	[redacted]	
Third Party Tree Works		
Provisional Sum		

- 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 [redacted]

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"*.

[redacted]