

Arboricultural Consultancy for Aviva - Commercial

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	Ms Krycia Fedorowitz	Address	12 Park Avenue, London, N22 7EX		
Client	Subsidence Management Services	Contact	Chris Sherwin	Claim No.	IFS-AVI-SUB-21-0091858
ES Ref	SA-249941	Consultant	Keith Burgess	Contact No.	0330 380 1036
Report Date	10/05/2022 Revised: 13/09/2022				

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. The is a revised report based on the results of further site investigations

2. Property and Damage Description

The insured structure is a 3 storey semi-detached house. It has been extended with a conservatory addition to the rear. The property occupies a level site with no adverse topographical features.

We have been advised that the current damage relates to the rear left-hand area of the insured dwelling where cracking indicates downwards movement.

3. Technical Reports

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

Soil Analysis	☒	Drain Report	☒	Foundation Detail	☒
Root Analysis	☒	Borehole Log	☒	Monitoring	☒

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	Haringey London Borough
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' engineers are satisfied that damage is due to clay shrinkage subsidence exacerbated by vegetation.

The conditions necessary for clay shrinkage subsidence to manifest have been established by site investigations.

The supporting subsoil (TP/BH1 & TP/BH2) has been analysed by a UKAS accredited Laboratory (to relevant BS, EN and ISO standards); NHBC chapter 4.2 (2021) categorises the supporting subsoil as being of predominately high plasticity, i.e. capable of significant volumetric change potential in response to moisture content.

The footings of the subject property are within the normally accepted influencing distance of vegetation on site and roots have been recovered within TP/BH3, TP/BH4 & TP/BH5.

Samples of these roots were recovered from underside of foundations and throughout the borehole, these roots were identified

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(using anatomical analysis) as having emanated from the genera *Populus* spp., *Clematis* spp., *Vitaceae* spp. and *Leguminosae* spp.

Populus spp. are Poplars and Aspens.

Clematis spp. are common flowering, garden climbers.

Vitaceae spp. include creepers such as *Parthenocissus* (Virginia creeper), *Vitis* (grape vine) and *Ampelopsis*.

Leguminosae spp. include *Laburnum*, *Robinia* (False Acacia or Locust), Broom, the Pagoda Tree and the climber *Wisteria*.

The role of vegetation is further supported by the results of level monitoring; whilst limited to just two readings, the results have confirmed a pattern of movement consistent with the known influence of vegetation.

Where vegetation is involved it produces a characteristic 'seasonal' pattern of foundation movement (subsidence through the summer, recovery through the winter); no other cause produces a similar pattern. If it is occurring soil drying by vegetation must be involved, unless the foundations are less than 300mm in depth, which in this case they are not.

Given the above, vegetation is deemed to retain the capacity to be causal to the current movement / damage.

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

In assessing the potential drying influence of the vegetation on site, we have considered species profile, normally accepted influencing distance and the position of vegetation relative to the observed damage.

Our survey of the site identified the Poplar (T1), Mixed Species Hedge (H1) and *Wisteria* (C1) given their position relative to the damage it is our opinion that the *Populus* spp., *Clematis* spp. and *Leguminosae* spp. roots identified will emanate from this vegetation.

Based on our observations on site and with due regards to species profile, the Poplar (T1) is considered the dominant feature proximate to the area of movement and accordingly we have identified it as the primary cause of the subsidence damage.

Given the recovery of roots likely to derive from the Mixed Species Hedge (H1) and *Wisteria* (C1), this vegetation 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 T1.

The size and proximity of the above vegetation is consistent with the location of damage; accordingly, we have identified their collective / cohesive influence as the primary cause of the subsidence damage.

With regards to the *Vitaceae* spp. roots, given their low of starch content and lack of a plausible source, it is our opinion that these roots will emanate from previously removed vegetation and do not represent a material consideration in the current subsidence event.

Given the above and considering the advised 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.

The recommendations contained within this report are prescribed to give the most reliable arboricultural solution likely to restore long-term stability.

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 too large and close for pruning to be viable.

Consequently, complete removal of T1, H1 and C1 will offer the most certain arboricultural solution likely to restore long-term stability.

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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 / 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.

Whilst replacement planting is considered appropriate, 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.

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

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
C1	Wisteria	1	4	0.1	C - Insured	Remove	Remove close to ground level and treat stump to inhibit regrowth.
H1	Mixed Species Hedge: includes Holly, Ivy, Clematis & Rose.	1	4	1.8	C - Insured	Remove	Remove close to ground level and treat stumps to inhibit regrowth.
T1	Poplar	1	25	31	B - Local Authority	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

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6.2 Future Risk Recommendations

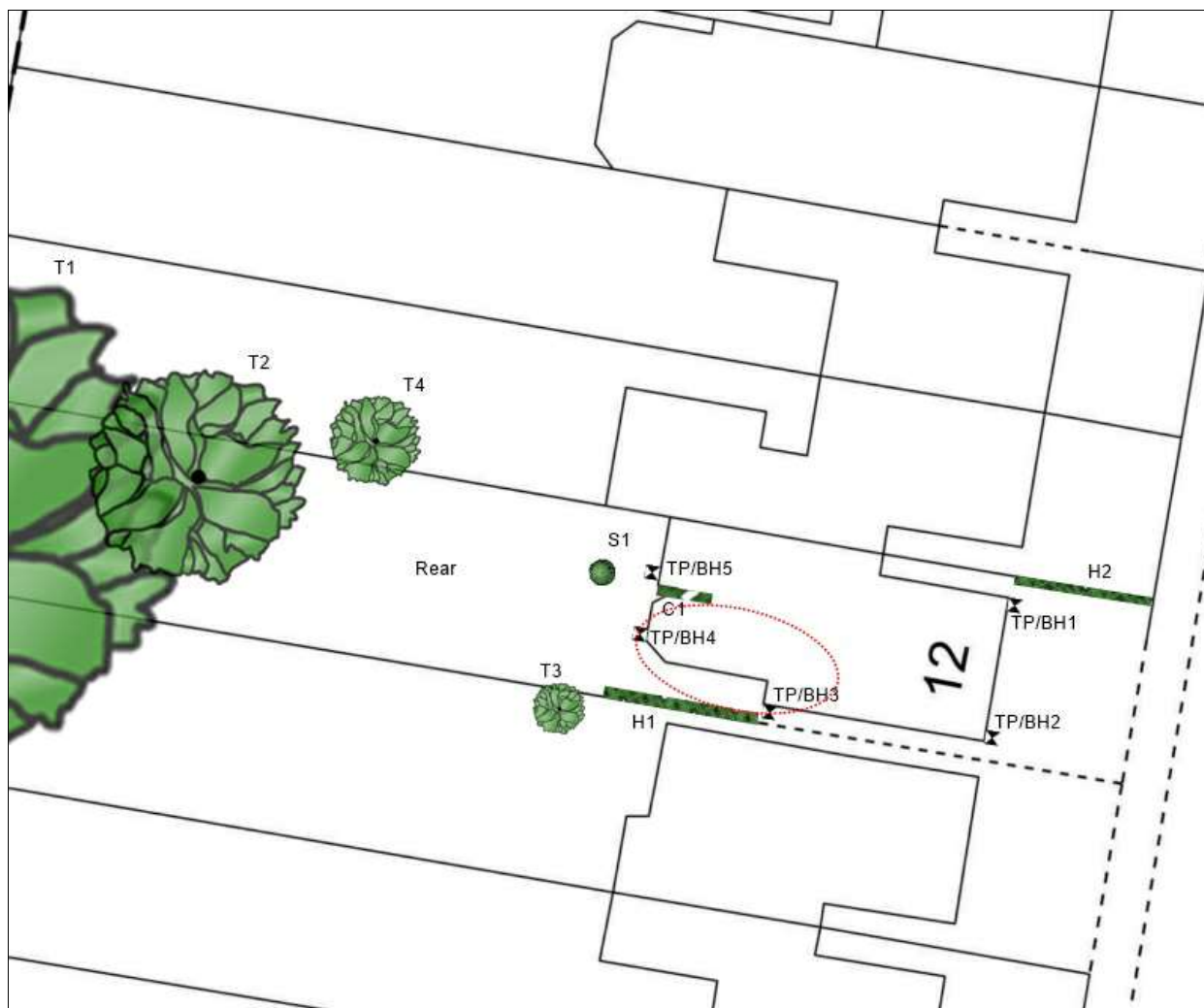
These recommendations may be subject to review following additional site investigations.

Tree No.	Species	Age Cat	Approx. Height (m)	Distance to Building (m) *	Ownership	Action	Requirement
H2	Privet	1	3	1.0	C - Insured	Action to avoid future risk	Reduce hedge to height of 1.8m and maintain at reduced dimensions by way of regular pruning.
S1	Aucuba	1	1	2.3	C - Insured	Action to avoid future risk	Maintain below 2m max height / spread by way of regular pruning.
T2	Ash	1	14	20	C - Insured	Action to avoid future risk	Maintain at broadly current dimensions by way of regular pruning.
T3	Magnolia	1	4	4.7	A - Third Party	Action to avoid future risk	Maintain at broadly current dimensions by way of regular pruning.
T4	Ash	1	12	12.0	A - Third Party	Action to avoid future risk	Crown reduce overall canopy by 30% (minimum) to achieve a crown volume reduction in line with BRE IP7/06. Maintain at reduced dimensions by re-pruning back to points of previous reduction on a 3 year cycle.
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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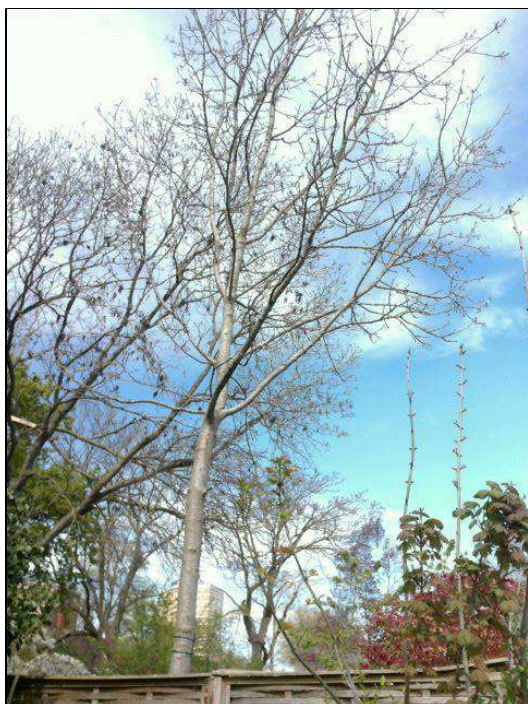
8. Photographs



T1 - Poplar (Hybrid Black)



T2 - Ash



T4 - Ash



T3 - Magnolia

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H1 - Mixed species hedge



S1 - Aucuba



C1 - Wisteria



H2 - Privet

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Date: 13/09/2022

Property: 12 Park Avenue, London, N22 7EX

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

Insured Property Tree Works	£720.00
Third Party Tree Works	£0.00
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".