

Arboricultural Consultancy for Direct Line Insurance

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

Insured	Dr John Harban	Address	The Gables, Carlton Road, Carlton, Barnsley, S71 3JD		
Client	Subsidence Management Services	Contact	Andrea Godrich	Claim No.	IFS-RBS-SUB-11-0031530
ES Ref	MI/1009151131/AC	Consultant	Andrew Cayley	Contact No.	0330 380 1036
Report Date	30/09/2015				

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.

2. Property and Damage Description

The insured structure is a 2 storey detached house. The property occupies a level site with no adverse topographical features.

Damage relates to the right flank and rear elevation of the detached coach house. 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 (please note site investigations date from 2012 and 2015):

Foundation Detail / Borehole Log Monitoring	☒	Soil Analysis	☒	Engineers Report	☒
	☒	Drain Survey	☒	Root Analysis	☒

4. Action Plan

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

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

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.

This report should be read in conjunction with our previous report MI/1604121352/JG-REV1.

Prior to attending site, TG1 of the above report had been removed (now identified as STG1).

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.

The footings of the subject property fall within the anticipated rooting range of vegetation, all with the capacity to be influencing soil moisture values below foundation level.

Site Investigations (undertaken September 2015) indicate that the foundations to the property extend to a depth of 1000mm below ground level in TP/BH1. Previous site investigations in 2012 identified footing depths of 1400mm in TP/BH1 (2012).

NHBC chapter 4.2 (2010) categorise the underlying subsoil as being of very high plasticity CLAY, i.e. capable of significant volumetric change potential in response to moisture demands.

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Functionally active roots recovered from TP/BH1 (2012) were formally identified as *Fraxinus* and *Acer spp.*

The most likely origin of the roots is T3 (Ash) and T2 (Sycamore), respectively.

Given that the *Acer spp* roots were recovered to a depth of 2.1m it is our opinion that these roots will derive from T2 and not the now removed Sycamore within STG1.

Roots recovered from TP/BH1 (2015) to a depth 2000mm have been identified as *Fraxinus* only, with the likely source being T3 (Ash).

Such circumstances confirm the potential for T3 to be influencing soil volumes and thereby contributing to the damage observed.

We are mindful of the presence of T7 (Ash) which is another significant specimen, but set to the rear of the insured property; given the information provided as to area of damage and also taking level monitoring results into account, it remains our opinion that of the two trees, T3 (Ash) is, on balance of probability, the likely source of the root material found.

We note fresh Level Monitoring is in place however readings are not yet available; in the event this continues to show a cyclical pattern of movement (in the absence of TG1) and confirms that the single storey section of the property is also moving, then this will confirm the role of T7 in the claim. Our advice may be subject to review.

In assessing the potential drying influence of the vegetation on site, T3 is clearly the dominant feature within the front garden of the insured property and accordingly we have identified it as the principal cause of the subsidence.

T2 (Sycamore) 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 T3.

Previous level monitoring (undertaken between 18/08/12 through to 17/11/14) has shown a pattern of movement that is consistent with the known influence of vegetation.

Level monitoring stations 8 and 9 (closest to the focal area of movement) has recorded downwards movement between August and October, thereafter recovery through to April 2013 is noted.

A survey of the property's drainage system has been undertaken and minor defects were recorded, however these minor defects were repaired prior to Level Monitoring commencing; monitoring has confirmed soil recovery which would not be typical in the event that damaged or defective drainage was the principal cause of the movement.

Given the results of monitoring (showing soil recovery) we can confirm that the load bearing capacity of the soil has not been compromised and consequently soil drying by vegetation must be involved.

It is therefore our opinion that vegetation is causal to the current movement / damage and as such management is considered appropriate in this instance with a view to restoring long term stability.

Given the above information and the advised mechanism of movement 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 for soils beneath the property to recover to a position where effective repairs can be implemented we recommend the removal of vegetation as detailed within this report.

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

Pruning should not be considered as representing an effective or reliable long-term alternative solution given the size and proximity of the vegetation.

There is sufficient space to support replacement plantings in this instance; however, species selection should be appropriate for the available space and ultimate height should not exceed 75% of the available distance to built structures.

A review of recommendations may be required if stability is not restored. We recommend the efficacy of this management is determined by further monitoring.

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.

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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 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
T2	Sycamore	1	11	14.6	C - Insured	Remove	Remove and treat stump to inhibit regrowth.
T3	Ash	1	19	19.2	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

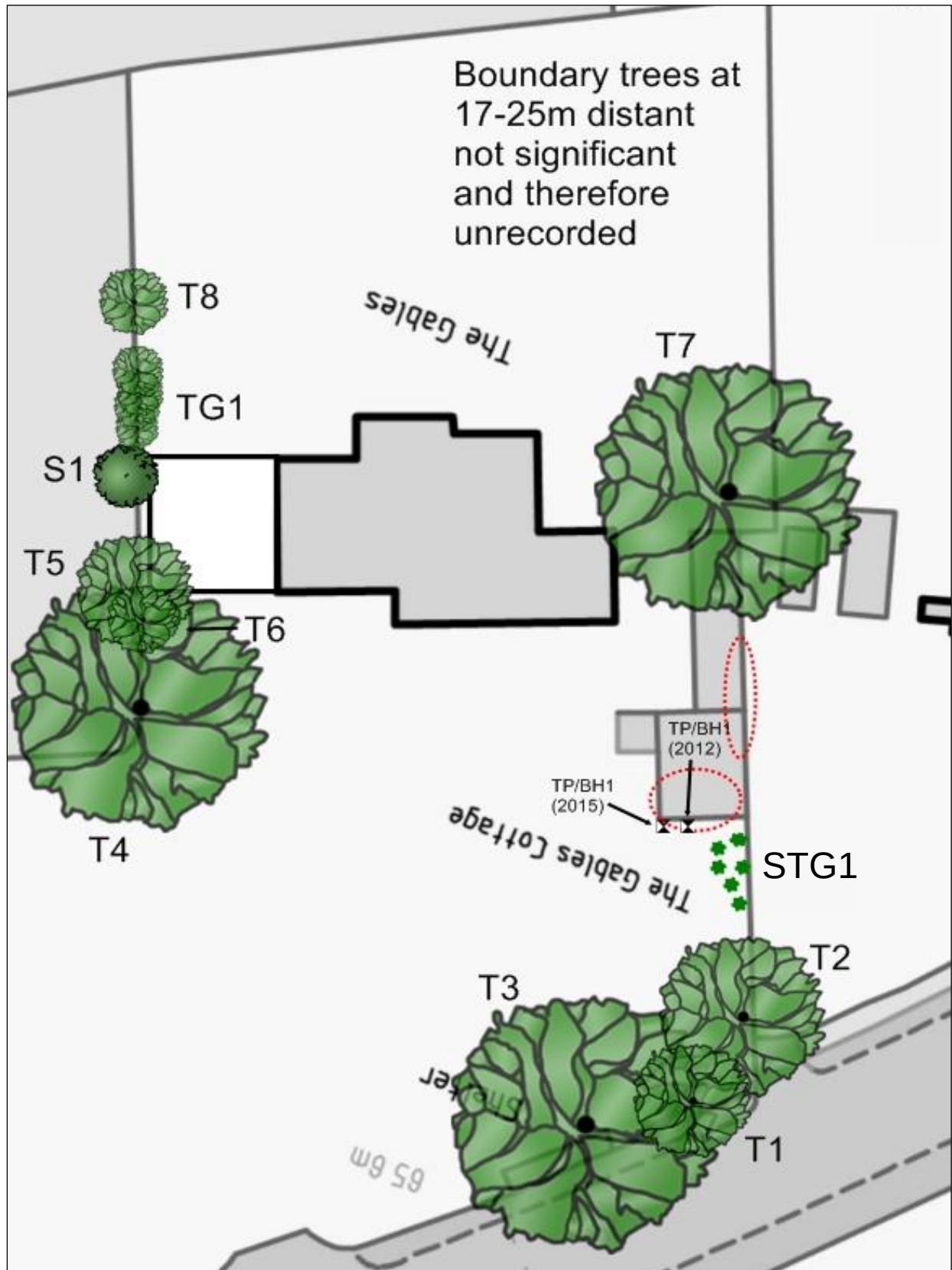
Tree No.	Species	Age Cat	Approx. Height (m)	Distance to Building (m)	Ownership	Action	Requirement
S1	Elder	1	5.4	1.2*	E - Boundary Veg (ownership to be confirmed)	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
STG1	Mixed species group (Sycamore, Holly, Ash)	1	1.6	1.7	C - Insured	Action to avoid future risk	Manage stumps to inhibit regrowth.
T1	Ash	1	10.7	17.4	C - Insured	Action to avoid future risk	Do not allow to exceed 14m max height by way of regular pruning.
T4	Plane (London)	3	15	8	C - Insured	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
T5	Ash	2	10.5	1.9	E - Boundary Veg (ownership to be confirmed)	Action to avoid future risk	Remove.
T6	Holly	1	5.4	1.5	C - Insured	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
T7	Ash	2	16	2.4	C - Insured	Action to avoid future risk	Remove.
T8	Cypress (Lawson)	1	8.5	10	C - Insured	Action to avoid future risk	Do not allow to exceed current dimensions by way of regular pruning.
TG1	Cypress (Leyland)	1	3.5	1	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



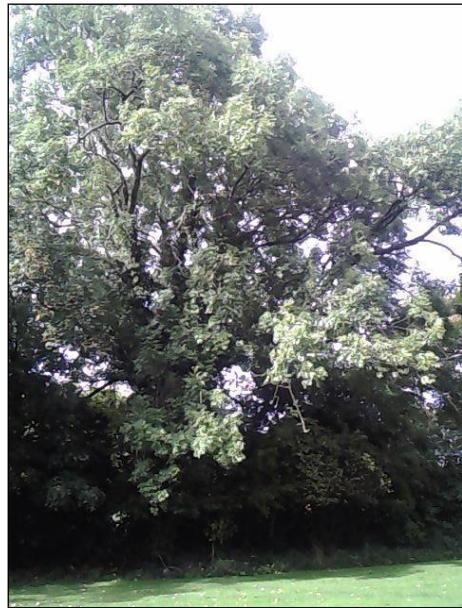
T7 - Ash



STG1 - Mixed species group



T2 - Sycamore



T3 - Ash

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T1 - Ash



STG1 - Mixed species group



TG1 - Cypress (Leyland)



T8 - Cypress (Lawson)

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T4 - Plane (London)



T5 - Ash



T6 - Holly



General Site

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Date: 30/09/2015

Property: The Gables, Carlton Road, Carlton, Barnsley, S71 3JD

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

Insured Property Tree Works	£1850
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".