

# Arboricultural Appraisal Report

## Subsidence Damage Investigation at:

7 Farrants Way  
Hornsea  
East Riding  
HU18 1DG



CLIENT:	360Globalnet
CLIENT REF:	LIV-SN-23-006837
MWA REF:	SUB230921-14279
MWA CONSULTANT:	Richard Percival (TechArborA)
REPORT DATE:	17/10/2023

## SUMMARY

Statutory Controls		Mitigation (Current claim tree works)	
TPO current claim	No	Policy Holder	No
TPO future risk	No	Domestic 3 <sup>rd</sup> Party	Yes
Cons. Area	Yes	Local Authority	No
Trusts schemes	No	Other	No
Local Authority: -	East Riding of Yorkshire		

## Introduction

Acting on instructions from 360Globalnet, the insured property was visited on 11/10/2023 to assess the potential role of vegetation in respect of subsidence damage.

We are instructed to provide opinion on whether moisture abstraction by vegetation is a causal factor in the damage to the property and give recommendations on what vegetation management, if any, may be carried out with a view to restoring stability to the property. The scope of our assessment includes opinion relating to mitigation of future risk. Vegetation not recorded is considered not to be significant to the current damage or pose a significant risk in the foreseeable future.

This is an initial appraisal report and recommendations are made with reference to the technical reports and information currently available and may be subject to review upon receipt of additional site investigation data, monitoring, engineering opinion or other information.

This report does not include a detailed assessment of tree condition or safety. Where indications of poor condition or health in accessible trees are observed, this will be indicated within the report. Assessment of the condition and safety of third-party trees is excluded and third-party owners are advised to seek their own advice on tree health and stability of trees under their control.

## Property Description

The property comprises a two-storey detached house of traditional construction built circa 2010. It has been extended with a single-storey addition to the right-flank built in 2016.

External areas comprise a paved driveway to the front with a garden to the right flank and the rear.

The site slopes away downhill to the right side of the property.

## Damage Description & History

Damage relates to the side extension where cracking indicates downward movement.

At the time of the engineer's inspection the structural significance of the damage was found to fall within Category 2 (slight) of Table 1 of BRE Digest 251. For a more detailed synopsis of the damage please refer to the surveyor's technical report.

We have not been made aware of any previous claims.

## Site Investigations

Site investigations were carried out by The Drainage Repair Company Ltd on 11/07/2023, when 2 trial pits were hand excavated to reveal the foundations, with a borehole sunk through the base of the trial pits to determine subsoil conditions. A drains survey was also undertaken.

### Foundations:

Ref	Foundation type	Depth at Underside (mm)
T/H1	Concrete	1100
T/H2	Concrete	2200

### Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
T/H1	Slightly silty CLAY with some medium gravel becoming soft/firm CLAY with some medium gravel then soft/firm brown CLAY with occasional medium gravel	17 - 26	Low - Medium
T/H2	Firm CLAY with some medium gravel becoming soft/firm brown CLAY with some medium gravel	16 - 19	Low

### Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
T/H1	2200	<i>Acer</i>	Present
T/H1	2200	<i>Prunus</i>	Absent
T/H2	No Roots Observed	-	-

*Acer* is a genus of trees which includes sycamore, Norway maple, Japanese maple and field maple.  
*Prunus* is a genus of trees and shrubs which includes cherry, plum and blackthorn.

**Drains:** The drains have been surveyed and no significant defects identified.

**Monitoring:** No information available at the time of writing.

## Discussion

Opinion and recommendations in this report are made on the understanding that 360Globalnet have identified clay shrinkage subsidence as a cause of building movement and damage.

Site investigations and soil test results have confirmed a plastic clay subsoil susceptible to undergoing volumetric change in relation to changes in soil moisture. A comparison between moisture content and the plastic and liquid limits suggests moisture depletion at the time of sampling in T/H1 at depths beyond normal ambient soil drying processes such as evaporation indicative of the soil drying effects of vegetation.

Roots were observed to a depth of 2.2m bgl in T/H1 and recovered samples have been positively identified (using anatomical analysis) as *Acer* and *Prunus*. The exact origin of the *Acer* roots is difficult to exactly determine due to the quantity of Sycamore trees growing in relatively close proximity to the building. TG1, T1, and T3 are considered to be the most likely sources. The *Prunus* roots were found to be dead at the time of testing and no significant *Prunus* vegetation was identified during our survey.

Based on the technical reports currently available, engineering opinion and our own site assessment we conclude the damage is consistent with shrinkage of the clay subsoil related to moisture abstraction by vegetation. Having considered the information currently available, it is our opinion that the trees recorded in Table 1 (see below) are the principal cause of or are materially contributing to the current subsidence damage.

If an arboricultural solution is to be implemented to mitigate the influence of the implicated trees/vegetation we recommend that the works specified in Table 1 are carried out. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended.

It was noted during our visit that a large Sycamore tree was once growing between the property and T1. We are informed that this tree fell during strong winds sometime between 1 and 2 years ago. It is highly likely that the roots of this tree extend below the foundations of the extension, and their influence has now been eliminated or at least greatly reduced. We were unable to visually locate the stump but recommend that any regrowth should be managed regularly to stop the tree from reestablishing.

Consideration has been given to pruning alone as a means of mitigating the vegetative influence, however in this case, this is not considered to offer a viable long-term solution due to the proximity of the responsible vegetation.

Recommended tree works may be subject to change upon receipt of additional information.

## Conclusions

- Conditions necessary for clay shrinkage subsidence to occur related to moisture abstraction by vegetation have been confirmed by site investigations and the testing of soil and root samples.
- Engineering opinion is that the damage is related to clay shrinkage subsidence.
- There is significant vegetation present with the potential to influence soil moisture and volumes below foundation level.
- Roots have been observed underside of foundations and identified samples correspond to vegetation identified on site.

**Table 1**                      **Current Claim - Tree Details & Recommendations**

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T1	Sycamore	17 *	580 *	15	9 *	Older than Property	Third Party 32 Westgate HU18 1BP
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
T3	Sycamore	14 *	460 *	10 *	11 *	Older than Property	Third Party 32 Westgate HU18 1BP
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
TG1	Sycamore	18 *	500 *	14	9.7	Older than Property	Third Party 32 Westgate HU18 1BP
Management history		Ivy infested. No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					

Ms:            multi-stemmed                      \* Estimated value

**Table 2 Future Risk - Tree Details & Recommendations**

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T2	Sycamore	18 *	600 *	15	14.4	Older than Property	Third Party 32 Westgate HU18 1BP
Management history		No recent management noted.					
Recommendation		No works at present. Subject to review if movement persists.					
T4	Ash	9 *	170 *	5	12.5 *	Older than Property	Third Party 32 Westgate HU18 1BP
Management history		No recent management noted.					
Recommendation		Do not allow to exceed current dimensions. Subject to review if movement persists.					
TG2	Cypress (Monterey)	22 *	800 Ms *	12 *	22 *	Older than Property	Third Party 32 Westgate HU18 1BP
Management history		No recent management noted.					
Recommendation		No works at present.					
S1	Hawthorn	5 *	80 Ms *	3	6	Older than Property	Third Party 32 Westgate HU18 1BP
Management history		No recent management noted.					
Recommendation		Reduce height to 3m leaving balanced crown. Prune on a biennial cycle to maintain at broadly reduced dimensions.					
SG1	Bamboo	1.8 *	15 Ms *	2 *	1.5 *	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Do not allow to exceed current dimensions. Subject to review if movement persists.					

Ms: multi-stemmed \* Estimated value

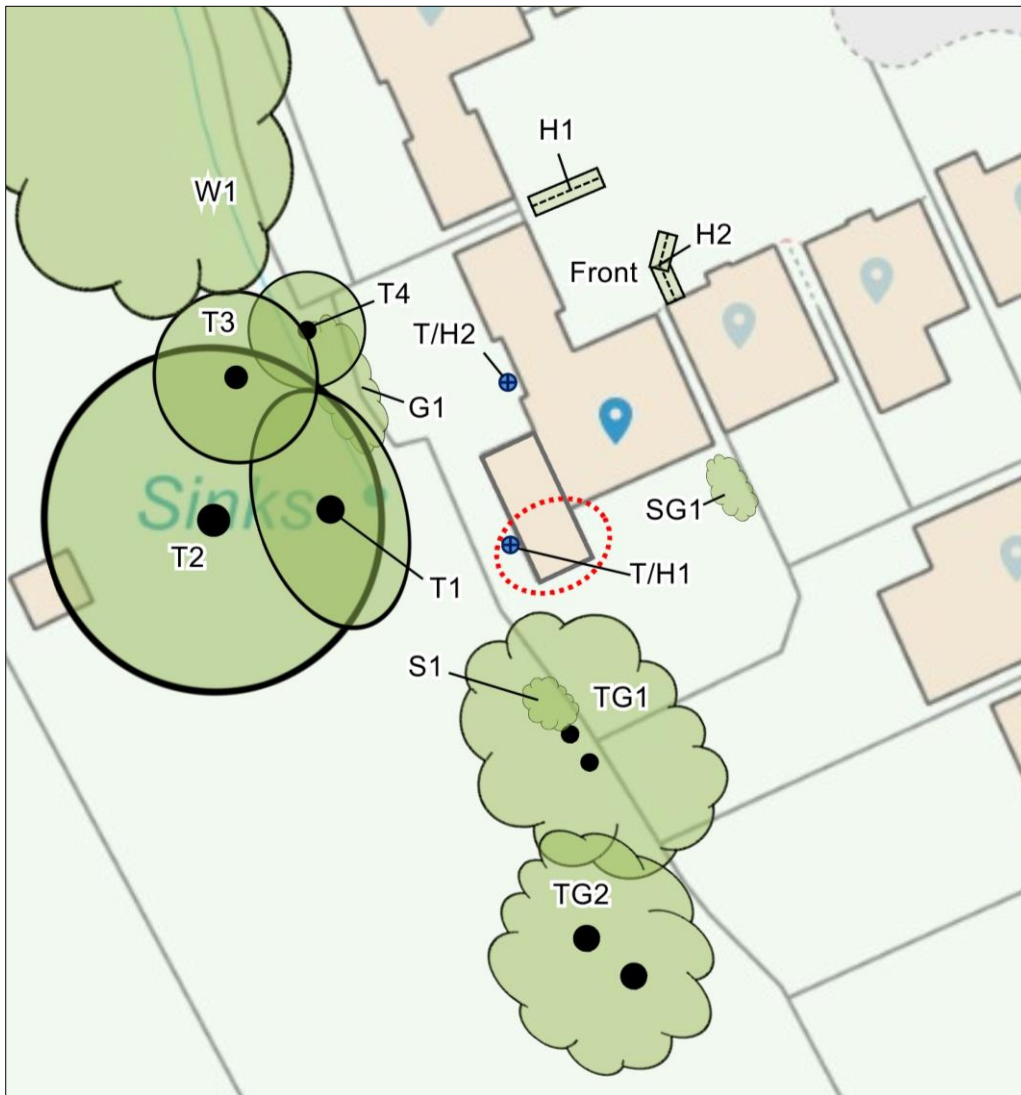
**Table 2 Future Risk - Tree Details & Recommendations Cont'd**

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
G1	Including Elder, Hawthorn	Up to 7 *	Up to 120 Ms *	Up to 3	6.1	Older than Property	Third Party 32 Westgate HU18 1BP
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
H1	Laurel	1.5 *	50 Ms *	1.2 *	2 *	Similar Age to Property	Third Party 8 Farrants Way HU18 1DG
Management history		Regularly trimmed.					
Recommendation		Continue current pruning regime.					
H2	Laurel	1.8 *	50 Ms *	1 *	1.6 *	Similar Age to Property	Third Party 6 Farrants Way HU18 1DG
Management history		Regularly trimmed.					
Recommendation		Continue current pruning regime.					
W1	Sycamore	Up to 16 *	Up to 500 *	Up to 13 *	12.7	Older than Property	Third Party 32 Westgate HU18 1BP
Management history		No recent management noted.					
Recommendation		No works at present.					


Ms: multi-stemmed \* Estimated value



**Site Plan**



Plan not to scale – indicative only

 Approximate areas of damage

Images





View of windthrown Sycamore stem