Arboricultural Appraisal Report

Subsidence Damage Investigation at:

5a Moorland Road
Drighlington
Bradford
BD11 1JY

CLIENT:	360Globalnet
CLIENT REF:	085120277
MWA REF:	SUB230809-13881
MWA CONSULTANT:	John Graham B.Sc. Hons PhD
REPORT DATE:	31/08/2023

SUMMARY

Statutory Controls			Mitigation (Current claim tree works)	
TPO current claim	Yes – T5		Policy Holder	Yes
TPO future risk	Yes – T2, T4		Domestic 3rd Party	Yes
Cons. Area	No		Local Authority	No
Trusts schemes	No		Other	No
Local Authority: -	Leeds City Council			

MWA Arboriculture Ltd
Bloxham Mill Business Centre
Barford Rd, Bloxham
Banbury
OX15 4FF

[redacted]

Introduction

Acting on instructions from 360Globalnet, the insured property was visited on 15/08/2023 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 detached 2 storey house, built in 1990, with conservatory to the left. External areas comprise gardens to the front and rear. The site is generally level with no adverse topographical features.

Damage Description & History

The current damage affects the main house and conservatory and was first noticed in October 2022. For a more detailed synopsis of the damage please refer to the building surveyor's technical report.

At the time of the building surveyor's inspection the structural significance of the damage was found to fall within Category 2 (slight) of Table 1 of BRE Digest 251.

We have not been made aware of any previous claims.

Site Investigations

Site investigations were carried out by Drainage Repair Company on 19/04/2023, when 2 trial pits were hand excavated to reveal the foundations, with a borehole sunk through the base of the trial pit to determine subsoil conditions. A drains survey was also undertaken.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP/BH1	Concrete	300
TP/BH2	Concrete	1,800

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Soft brown slightly silty CLAY with occasional medium gravel	16 - 22	Low - Medium
TP/BH2	Soft brown slightly silty CLAY with some medium gravel	10 - 18	Low

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	700	Fraxinus	Positive
TP/BH1	1,000	Fraxinus	Negative
TP/BH2	No roots observed		

Fraxinus spp. include common ash

Drains: The drains have been surveyed and defects identified, although, leaking drains are concluded not to be a cause of the current damage.

Monitoring: Level and crack monitoring is in progress for too few readings to draw observations.

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 TP/BH1 and plastic limit only in TP/BH2 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 1,000mm bgl in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as ash, the origin of which will be T5 and/or T6.

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 T5 and T6 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, we recommend that T5 and T6 are removed. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended.

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.

Replacement planting may be considered subject to species choice and planting location.

Table 1 Current Claim - Tree Details & Recommendations

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T5	Ash	19	1120	15	8.5	Older than Property	Policy Holder
Management history		Subject to past management/pruning. This tree has a large wound/cavity with rot/soft wood that extends into the roots. The tree is a serious hazard that requires urgent management. See images.					
Recommendation		Remove (fell) on health and safety ground irrespective of being implicated in subsidence damage.					
T6	Ash	19 *	700 *	13 *	11	Older than Property	Third Party 7 Moorland Road BD11 1JY
Management history		Subject to past management/pruning.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					

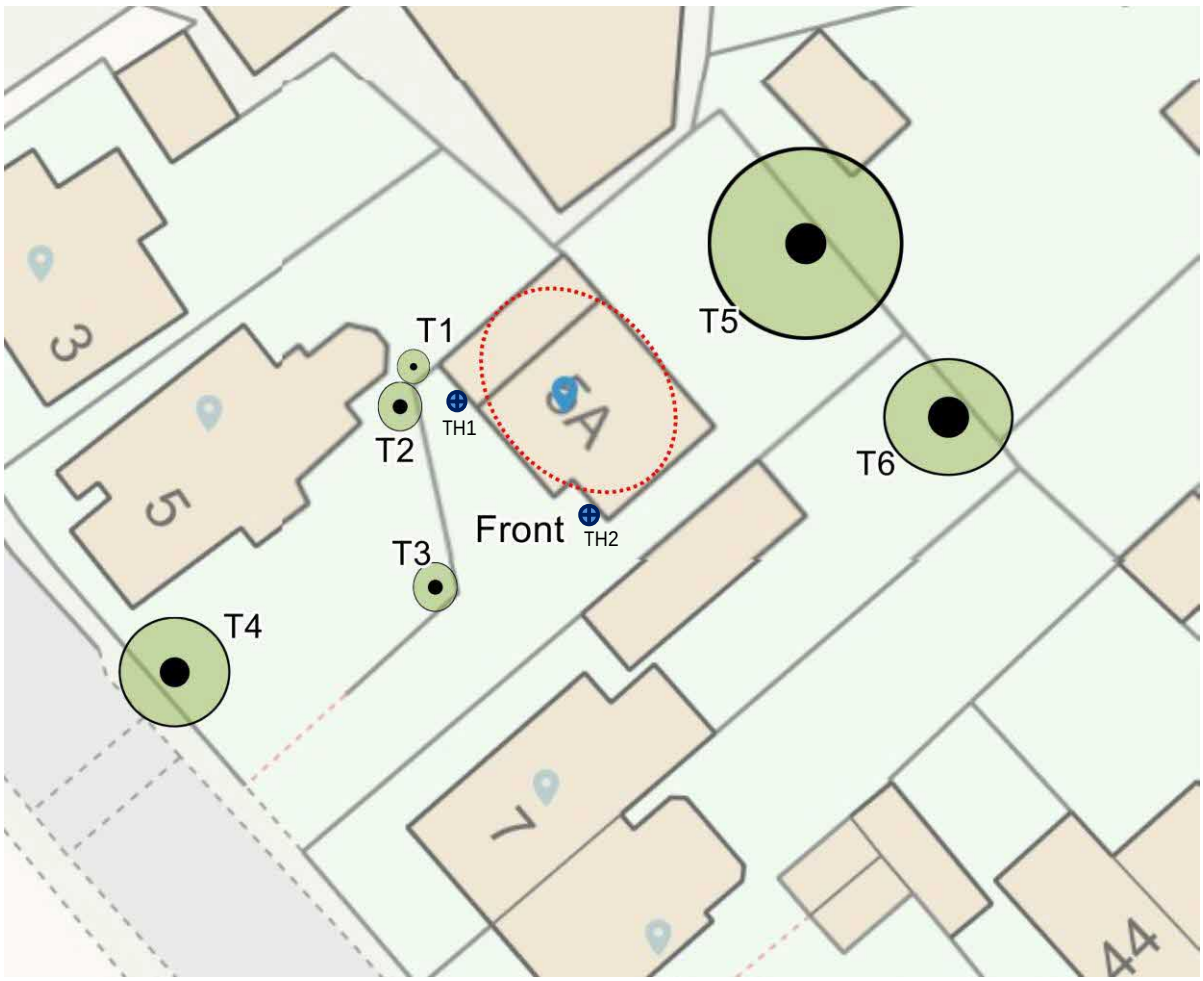
Ms: multi-stemmed * Estimated value

Table 2 Future Risk - Tree Details & Recommendations

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T1	Plum	5 *	100 Ms *	2	3.5	Younger than Property	Third Party Moorland House BD11 1JY
Management history		Subject to past management/pruning.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T2	Holly	6 *	350 Ms *	4	5	Similar Age to Property	Third Party Moorland House BD11 1JY
Management history		Subject to past management/pruning.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T3	Sycamore	6 *	200 Ms *	4	8	Similar Age to Property	Third Party Moorland House BD11 1JY
Management history		Subject to past management/pruning.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T4	Sycamore	18 *	650 *	12	21	Similar Age to Property	Third Party Moorland House BD11 1JY
Management history		Subject to past management/pruning.					
Recommendation		No works required at present (subject to review if movement persists).					

Ms: multi-stemmed * Estimated value

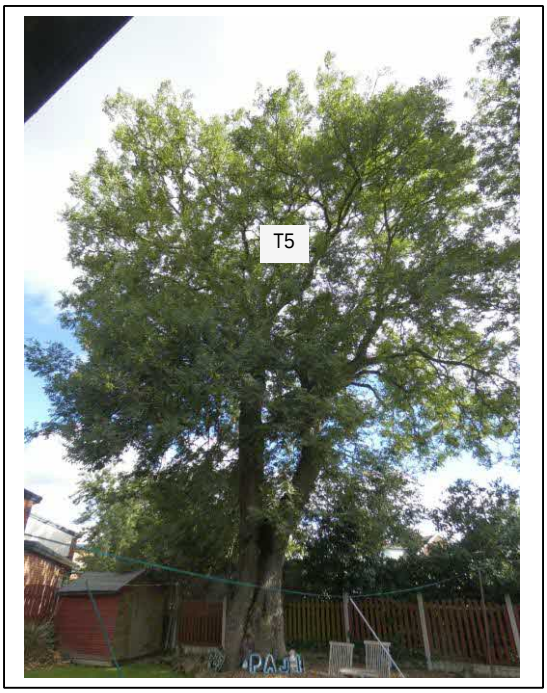
Site Plan



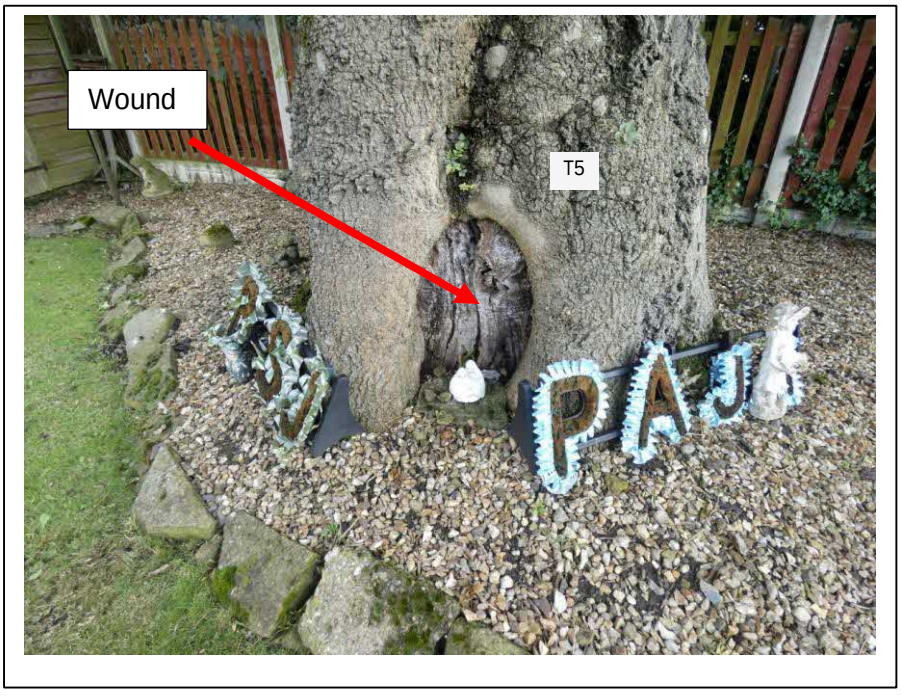
Plan not to scale – indicative only

Approximate areas of damage

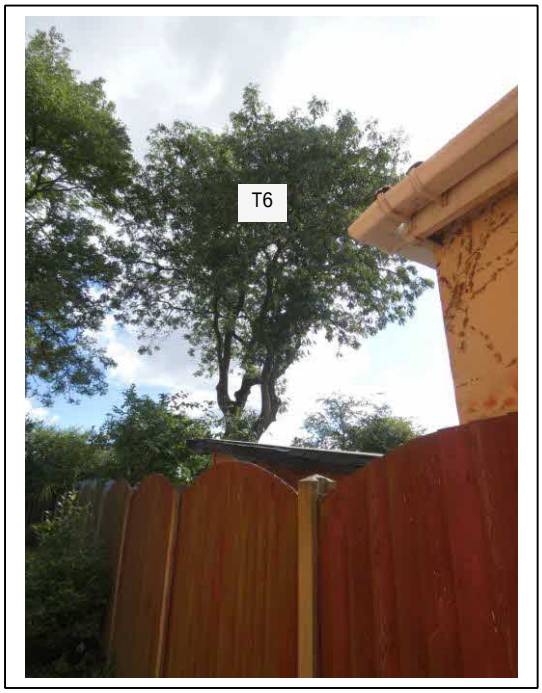
Images



View of T5.



View of wound on T5.



View of T6.

View of T1 and T2.

View of T3.

View of T4.