

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

31 Copse Wood Way
Northwood
Harrow
HA6 2TZ



CLIENT: QuestGates
CLIENT REF: QG1S1210326
MWA REF: SUB230417-12934
MWA CONSULTANT: Giles Mercer B.Sc Hons
REPORT DATE: 03/08/2023

SUMMARY

Statutory Controls		Mitigation (Current claim tree works)	
TPO current claim	Yes – T1	Policy Holder	Yes
TPO future risk	No		No
Cons. Area	No		No
Trusts schemes	No		No
Local Authority: -	London Borough of Hillingdon		

Introduction

Acting on instructions from QuestGates, the insured property was visited on the 10/07/2023 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 2 storey detached house with a single storey extension to the rear.

External areas comprise gardens to the front and rear.

The property occupies a site that slopes gently uphill from front to rear and steeply downhill from right to left.

Damage Description & History

Damage relates to the front left-hand corner of the insured dwelling.

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 Auger on 10/02/2023, when a single trial pit was 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	1300

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Brown fine to medium gravelly silty CLAY	29 - 47	Medium - High

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	1300	Similar to Cistaceae, Lavandula or Caprifoliaceae family	Present

*Cistaceae (includes CISTUS and HELIANTHEMUM (small shrubs with very delicate and shortlived pink, yellow or white-ish flowers));
Lavandula (Lavender).
Caprifoliaceae (the most common members being Viburnum (Laurestinus and Guelder-rose), Weigela, Symphoricarpos (Snowberry), Lonicera (Honeysuckle)).*

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

Monitoring: No information available at the time of writing.

Discussion

Opinion and recommendations in this report are made on the understanding that QuestGates 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 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 1.3m bgl in TP/BH1 and recovered samples have been tentatively identified as a shrub similar to Cistaceae, Lavender or the Caprifoliaceae family, the origin of which will be shrub groups SG1 and/or SG2.

By virtue of their size and species profiles the mixed species shrub groups SG1 and SG2 are not considered to be a material influence in the current subsidence event.

Irrespective of the identification of recovered root samples, the roots of the Oak (T1) are likely to be present below foundation level in proximity to the area of movement/damage and influencing soil moisture and volumes.

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 Oak (T1) is the principal cause of 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 Oak (T1) is 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
T1	Oak	19.9	675 *	20.2	9.4	Older than Property	Policy Holder
Management history		No significant 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
TG1	Laburnum and amelanchier	4 *	35 Ms *	4 *	5.5 *	Younger than Property	Third Party 29 Copse Wood Way HA6 2TZ
Management history		No significant recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG1	Choisya and euonymus	1.85	10 Ms *	1.3	0.25	Younger than Property	Policy Holder
Management history		Managed shrubs.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG2	Mixed species shrubs including viburnum, currant, forsythia	3 *	10 Ms *	1.5 *	3.25 *	Younger than Property	Third Party 29 Copse Wood Way HA6 2TZ
Management history		Managed shrubs.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG3	Viburnum	3.8 *	15 Ms *	2 *	6.5 *	Younger than Property	Policy Holder
Management history		Managed shrubs.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG4	Euonymus	1.55	10 Ms *	1.3	0.25	Younger than Property	Policy Holder
Management history		Managed shrubs					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

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
C1	Ivy	3	10 Ms *	1.2	2.4 *	Younger than Property	Policy Holder
Management history		Managed shrubs.					
Recommendation		Do not allow to exceed current dimensions.					
H1	Laurel	1.4	30 Ms *	1.25	1.1	Younger than Property	Policy Holder
Management history		Managed hedge.					
Recommendation		Do not allow to exceed current dimensions.					

Ms: multi-stemmed

* Estimated value

Site Plan



Plan not to scale – indicative only

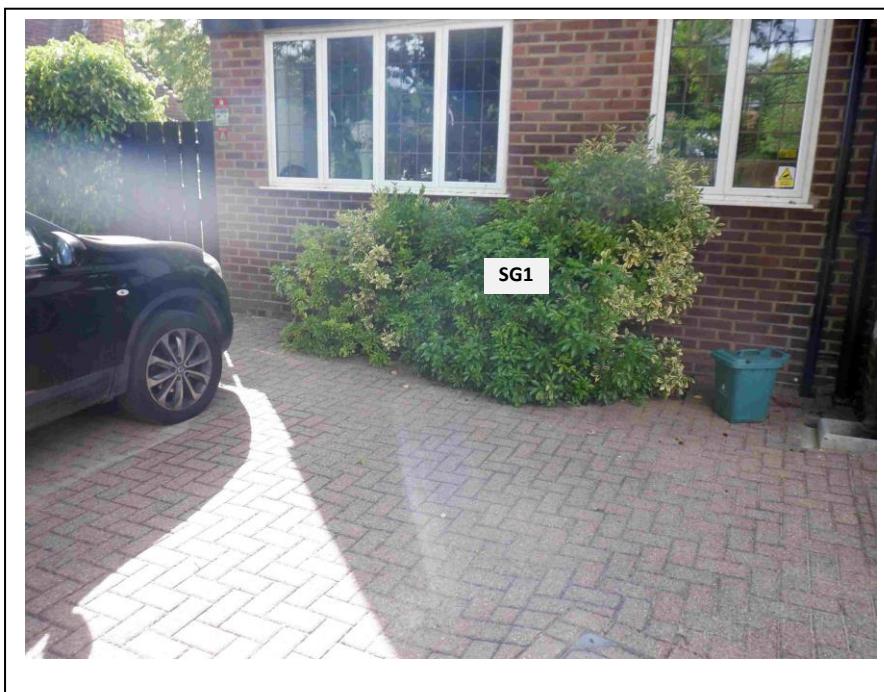


Approximate areas of damage

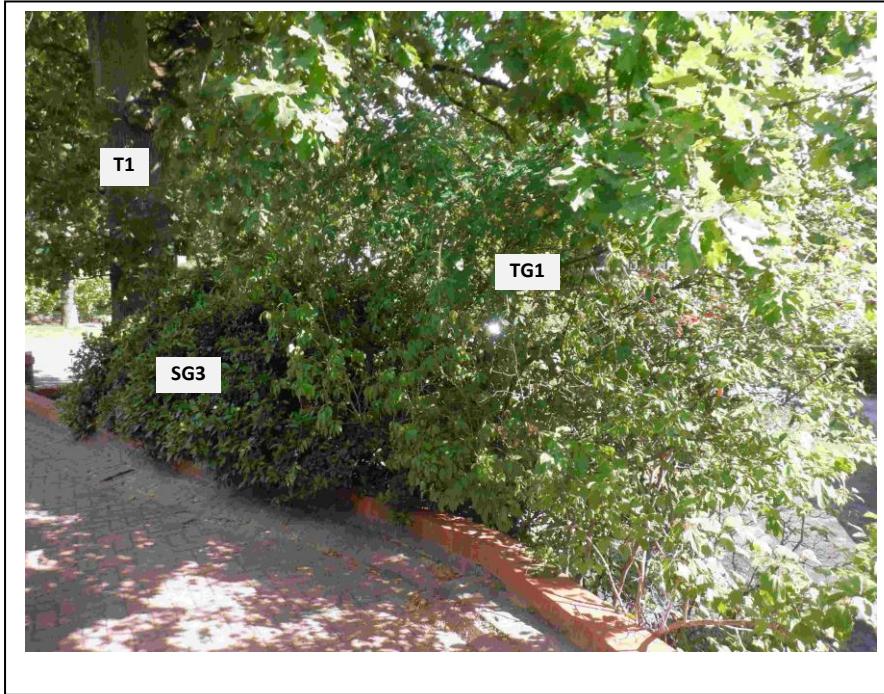
Images



View of C1 & SG2



View of SG1



View of SG3 & TG1



View of T1