

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

Silverton Lodge
118 Church Road
London
SE19 2UE



CLIENT:	QuestGates
CLIENT REF:	QG1S1141035
MWA REF:	SUB230911-14214
MWA CONSULTANT:	Mark Bisley (BSc Hons)
REPORT DATE:	25/10/2023

SUMMARY

Statutory Controls		Mitigation (Current claim tree works)	
TPO current claim	No	Policy Holder	Yes
TPO future risk	No	Domestic 3 rd Party	No
Cons. Area	Yes	Local Authority	No
Trusts schemes	No	Other	No
Local Authority: -	London Borough of Croydon		

Introduction

Acting on instructions from QuestGates, the insured property was visited on 05/10/2023 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 subject building comprises a two-storey, detached block of flats at the rear of the site, built c. in the early 20th century. Additional flats are located towards the front of the site.

External areas comprise amenity areas on all sides, primarily used as vehicle access. The site slopes down from the front to the rear.

Damage Description & History

The current damage affects the front left corner of the block. Other damage to the interior stairwells has not been attributed to subsidence.

At the time of the engineer's inspection the damage was assessed as being the result of clay shrinkage subsidence due to moisture abstraction by vegetation and was found to fall within Category 2 - 3 (slight – moderate) of Table 1 of BRE Digest 251.

For a more detailed synopsis of the damage please refer to the building surveyor's technical assessment.

Site Investigations

Site investigations were carried out by Geocore on 13/07/2023, 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.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP1	Concrete	600

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Stiff to very stiff with depth, slightly sandy CLAY to 2.30m. Ends at 2.30m due to refusal.	32 – 38	Medium

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	2300	<i>Acer spp.</i> <i>Quercus spp. or Castanea spp.</i>	Present Present

Acer spp. are maples and includes sycamore and box elder.

Quercus spp. are oaks.

Castanea spp. includes sweet chestnut.

Drains: No information available at the time of writing.

Monitoring: Level monitoring commenced on 18/08/2023 but no comparative readings were 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 2300mm bgl in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as *Acer spp.* and either *Quercus sp.* or *Castanea spp.*, the origin of which will be T8 and T9 respectively, confirming their influence on the soils below the foundations.

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 T8 and T9 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 T8 and T9 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. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended

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
T8	Sycamore	21 *	700 *	15 *	7	Younger than Property	Policy Holder
Management history		Subject to periodic reduction as part of an ongoing management regime.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					
T9	Oak	15 *	700	17 *	10	Younger than Property	Policy Holder
Management history		Subject to periodic reduction as part of an ongoing management regime.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					

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	Willow	8.5	240 Ms	9 *	8	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Do not allow to exceed current dimensions (subject to review if movement persists).					
T2	Raywood ash	20	525 *	16 *	17 *	Younger than Property	Local Authority
Management history		No significant recent management noted. Closest and largest tree to dwelling in Park.					
Recommendation		No works required.					
T3	Pine	17	460	7	10	Younger than Property	Policy Holder
Management history		No significant past management noted.					
Recommendation		Do not allow to exceed current dimensions (subject to review if movement persists).					
T4	Sycamore	16	640	15 *	15	Younger than Property	Policy Holder
Management history		Subject to periodic reduction as part of an ongoing management regime.					
Recommendation		Do not allow to exceed current dimensions (subject to review if movement persists).					
T5	Oak	16	640	15 *	13	Younger than Property	Policy Holder
Management history		Subject to periodic reduction as part of an ongoing management regime.					
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
T6	Sycamore	16	630	15 *	8 front of block 13 rear of block	Younger than Property	Policy Holder
Management history		Subject to periodic reduction as part of an ongoing management regime.					
Recommendation		Do not allow to exceed current dimensions (subject to review if movement persists).					
T7	Oak	21 *	710	15 *	7	Younger than Property	Policy Holder
Management history		Subject to periodic reduction as part of an ongoing management regime.					
Recommendation		Do not allow to exceed current dimensions (subject to review if movement persists).					
T10	Bay	11 *	420	9 *	8	Younger than Property	Policy Holder
Management history		Subject to periodic reduction as part of an ongoing management regime.					
Recommendation		Do not allow to exceed current dimensions (subject to review if movement persists).					
TG1	Sycamore	18	640	14 *	6	Similar Age to Property	Policy Holder
Management history		No significant recent management noted. Approx 8 stems of varying size.					
Recommendation		Do not allow to exceed current dimensions (subject to review if movement persists).					
TG2	Sycamore	16	650	14 *	8	Similar Age to Property	Policy Holder
Management history		No significant recent management noted. Approx 7 stems of varying size.					
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	Owership
G1	Includes Pittosporum, Hydrangea, Fatsia	2	25 Ms *	2	0	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Do not allow to exceed current dimensions.					
G2	Includes Cotoneaster, Hydrangea	1	3 Ms *	2	0	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Do not allow to exceed current dimensions.					
G3	Cherry-laurel, Yew, Holly, Lime	5.5	220 Ms	7 *	8	Similar Age to Property	Policy Holder
Management history		Subject to periodic reduction as part of an ongoing management regime.					
Recommendation		Do not allow to exceed current dimensions (subject to review if movement persists).					

Ms: multi-stemmed

* Estimated value

Site Plan



Plan not to scale – indicative only

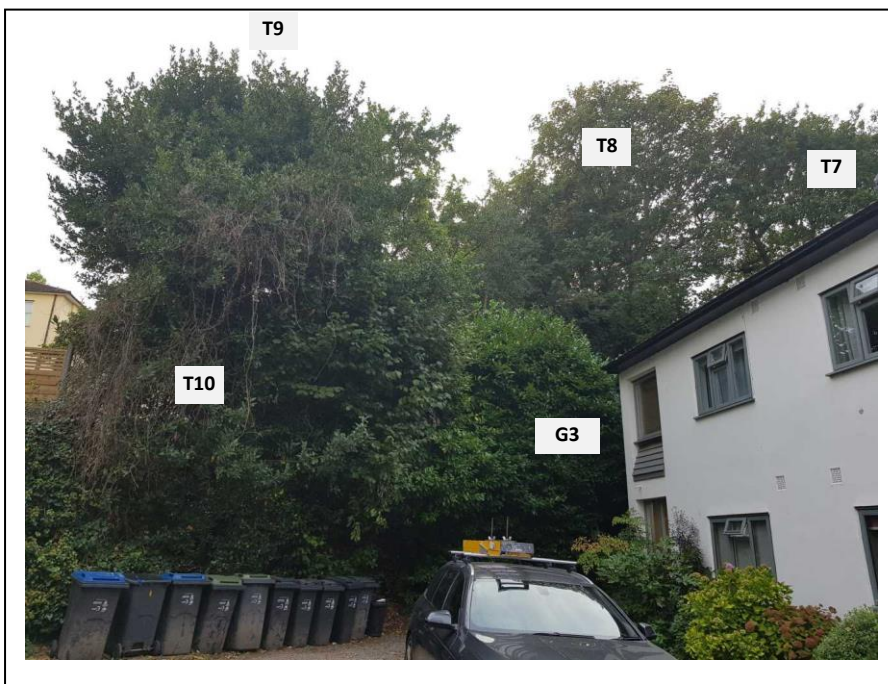


Approximate areas of damage

Images



View of T7 and T8 from rear



View of front left corner of block



View of G1