

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

6 Scarsdale Road
Manchester
M14 5PS



CLIENT:	QuestGates
CLIENT REF:	QG1S1250222
MWA REF:	SUB240301-15106
MWA CONSULTANT:	Richard Percival (TechArborA)
REPORT DATE:	15/03/2024

SUMMARY

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

Introduction

Acting on instructions from QuestGates, the insured property was visited on 12/03/2024 to assess the potential role of vegetation in relation to 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 semi-detached house built C.1930's with a partial basement.

External areas comprise a paved driveway with a small street-side garden to the front, with a larger garden to the rear.

The site is generally level with no adverse topographical features.

Damage Description & History

Damage relates to the front elevation and the left-hand flank. Damage is reported to have first been observed around Autumn 2022.

At the time of the initial assessment (15/12/2023) the structural significance of the damage was found to fall within Category 2 (Slight) of Table 1 of BRE Digest 251. Further details of the damage can be obtained from QuestGates.

We have not been made aware of any previous claims.

Site Investigations

Site investigations were carried out by Auger on 19/01/2024, 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	1000

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Fine to medium gravelly silty CLAY	25 - 33	Medium

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	1000	<i>Fagus spp. & Prunus spp.</i>	Present
TP/BH1	1500	<i>Acer spp.</i>	Present

Fagus is a genus of trees which are commonly referred to as beech (common, purple/copper, etc.)

Prunus is a large genus of closely related trees and shrubs which includes plum, cherry, almond, laurel and blackthorn

Acer is a genus of trees and shrubs which includes sycamore, field maple, Norway maple and Japanese maple.

Drains: The drains have been surveyed and defects identified.

Monitoring: Level monitoring is in progress.

Discussion

Opinion and recommendations in this report are made on the understanding that QuestGates has 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. Roots were observed below foundation depth in TP/BH1.

Samples recovered from TP/BH1 have been positively identified (using anatomical analysis) as *Fagus*, *Prunus* and *Acer*, the origin of which will be T1, HG1 and the associated elements of TG1 confirming their influence on the soils below the foundations.

Based on the information currently available, engineering opinion and our own site assessment we conclude there is damage consistent with shrinkage of the clay fraction exacerbated by the soil drying effects of vegetation.

If an arboricultural solution is to be implemented to mitigate the influence of the trees/vegetation considered to be responsible for the movement/damage, works set out at Table 1 below are recommended.

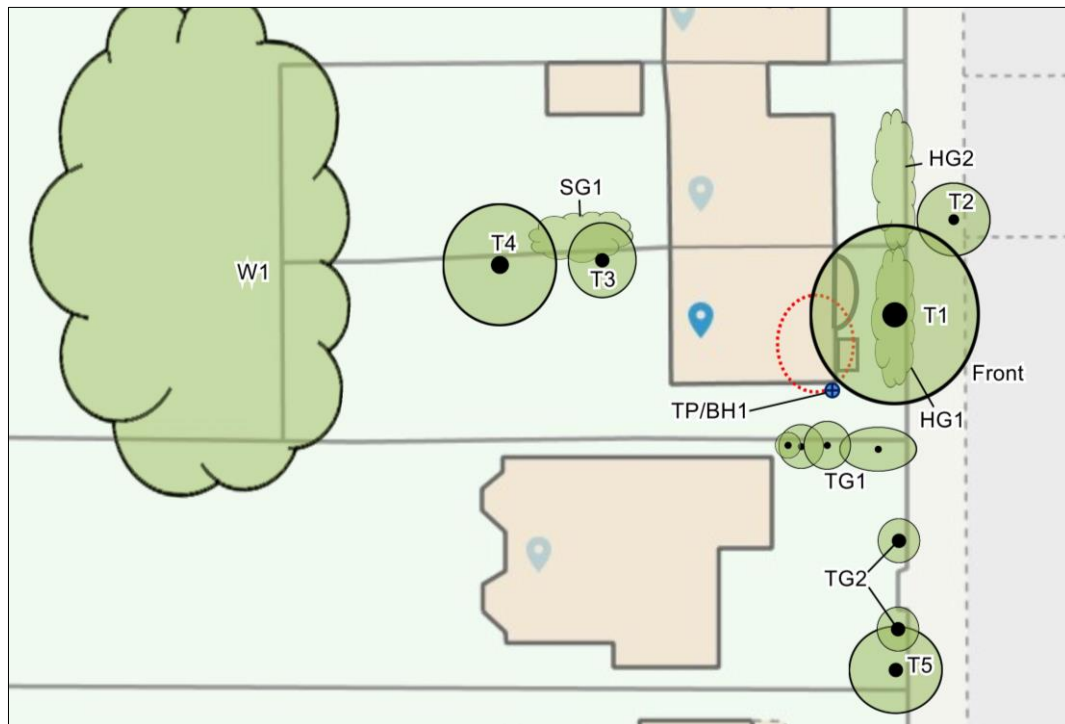
Where other vegetation recorded presents a potential future risk to building stability, management is recommended (see Table 2).

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

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

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

Site Plan



Tree/vegetation locations are indicative



Approximate areas of damage

Tree/vegetation locations are based on what could be determined at the time of the survey. It should be noted that this is not always clear due to lack of access or a restricted view of the trees/vegetation and may be disputed by property owners. Ownership of boundary trees/vegetation may not be entirely clear.

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	Beech	14	530	8	2.3	Similar Age to Property	Policy Holder
Management history		Subject to past management/pruning.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
TG1	Including plum, sycamore, laburnum	3 - 11	80 *	1.5 - 5	3.4	Younger than Property	Third Party 8 Scarsdale Road M14 5PS
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stumps to inhibit regrowth.					
HG1	Laurel	3.5	70 Ms *	2 *	2.5	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and grub out stumps to inhibit regrowth.					

Ms: multi-stemmed * Estimated or approximate value

T - Tree; TG - Tree group; G – Group; H - Hedge; S - Shrub; SG - Shrub group; C - Climber; W – Woodland; ST - stump

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	Rowan	5.5	110	4	7 *	Younger than Property	Local Authority
Management history		No recent management noted.					
Recommendation		No works at present. Subject to review if movement persists.					
T3	Cupressus family	5.8	160 Ms *	2.6	2.6	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T4	Cherry	9.4	180	6	7.7	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T5	Sycamore	12	260 *	5 *	16.5	Younger than Property	Third Party 8 Scarsdale Road M14 5PS
Management history		No recent management noted.					
Recommendation		No works at present.					
TG2	Hawthorn	6	370 *	3.5	10	Similar Age to Property	Third Party 8 Scarsdale Road M14 5PS
Management history		No recent management noted.					
Recommendation		No works at present. Subject to review if movement persists.					

Ms: multi-stemmed * Estimated or approximate value

T - Tree; TG - Tree group; G – Group; H - Hedge; S - Shrub; SG - Shrub group; C - Climber; W – Woodland; ST - stump

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
SG1	Ornamental shrub group	4	10 Ms *	3	4 *	Younger than Property	Third Party 4 Scarsdale Road M14 5PS
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
HG2	Laurel	3.5	70 Ms *	3	3.4	Younger than Property	Third Party 4 Scarsdale Road M14 5PS
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning. Subject to review if movement persists.					
W1	Sycamore	18 *	450 *	16	19	Younger than Property	Third Party J D G Flanagan of 9 Crossway M20 6TU
Management history		No recent management noted.					
Recommendation		No works at present.					

Ms: multi-stemmed * Estimated or approximate value

T - Tree; TG - Tree group; G – Group; H - Hedge; S - Shrub; SG - Shrub group; C - Climber; W – Woodland; ST - stump

Distance to building measurements are to the nearest point of the building unless otherwise stated.

Tree dimensions may be estimated or approximate based on accessibility.

Crown spread values are normally an estimate of the maximum spread but note tree crowns may be asymmetrical.

Images





Management of vegetation to alleviate clay shrinkage subsidence.

All vegetation requires water to survive which is accessed from the soil. Clay soils shrink when water taken up by vegetation exceeds inputs from rainfall, which is at its maximum during the summer months. When deciduous vegetation enters dormancy and loses its leaves, and rainfall increases during the winter months, soil moisture increases and the clay swells. (Evergreen trees and shrubs use minimal/negligible amounts of soil water during the winter).

Buildings founded on clay soils are susceptible to movement as the clay shrinks and swells which when exacerbated by vegetation can result in cracking to walls.

Where damage does occur, pruning (reducing leaf area) can in some circumstances be effective in restoring stability however, removal of the influencing vegetation (trees, shrubs, climbers) causing the ground movement offers the most reliable and quickest solution in reducing seasonal volumetric changes in the clay and restoring building stability, and for this reason is frequently initially recommended as the most appropriate solution.

Often this is unavoidable due to the size or number of influencing trees, shrubs etc and their proximity to the building. Very heavy pruning of some species to a level required to effectively control its water use can result in the trees decline and ultimately death and is one factor considered when making recommendations for remedial and future management of tree. Pruning alone, whilst reducing soil moisture uptake is often an unpredictable and unreliable management option in restoring building stability, either in the short or long term.

In some circumstances however, where vegetation initially recommended for removal is subsequently pruned and monitoring indicates the building has stabilised, removal becomes unnecessary with decisions based on best evidence available at the time.