Arboricultural Appraisal Report

Subsidence Damage Investigation at:

11 Oakhill Avenue
London
NW3 7RD

CLIENT:	[redacted]
CLIENT REF:	
MWA REF:	
MWA CONSULTANT:	Richard Percival (TechArborA)
REPORT DATE:	29/11/2022

SUMMARY

Statutory Controls			Mitigation (Current claim tree works)	
TPO current claim	No		Policy Holder	Yes
TPO future risk	Yes – T5		Domestic 3rd Party	No
Cons. Area	Yes		Local Authority	Yes
Trusts schemes	No		Other	No
Local Authority: -	London Borough of Camden			

[redacted]

Introduction

Acting on instructions from Graham High Group Ltd, the insured property was visited on 24/11/2022 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 three-storey, semi-detached house which appears to have been constructed c.1900. To the rear of the ground floor and basement area is a two-storey conservatory/extension which was added by a previous owner.

The property has been converted into three separate flats with the subject property containing the ground floor, the basement area and the conservatory. The upper floors are split into two further flats with their own separate entrance.

External areas comprise gardens to the front, right flank and the rear. There is a detached garage with a driveway found at the southernmost end of the plot.

The site slopes downhill from left to right and front to rear.

Damage Description & History

Damage relates to the front porch and front entrance steps where cracking indicates downward movement. There is also an area of damage to the rear of the property where the bay window adjoins the extension/conservatory.

At the time of the engineer's inspection (02/09/2022) 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.

[redacted]

Site Investigations

Site investigations were carried out by Bradgate Surveying Limited on 02/09/2022, when 3 trial pits were hand 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)
TH/BH1	Stone pad and mortar	210
TH/BH2	Stone pad and mortar	250
TH/BH3	No foundation to step, built off the ground	NA

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TH/BH1	Brown silty, sandy CLAY containing orange mottle and grey mottle	26 - 29	Medium
TH/BH2	Made ground (Stone, Brick etc.) Borehole closed at 1000mm - unable to penetrate	NA	NA
TH/BH3	NA	NA	NA

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TH/BH1	1780	*Cupressaceae* spp.	Present

Cupressaceae spp. include Lawson cypress, western red cedar, Monterey cypress, Leyland cypress and junipers.

Drains: No information available at the time of writing.

Monitoring: No information available at the time of writing.

[redacted]

Discussion

Opinion and recommendations are made on the understanding that Graham High Group Ltd are satisfied that the current building movement and the associated damage is the result of clay shrinkage subsidence and that other possible causal factors have been discounted.

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 to a depth of 1.78m bgl in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as *Cupressaceae* spp., the origin of which will be elements of TG1 confirming their influence on the soils below the foundations.

Irrespective of the identification of recovered root samples, the roots of T1 oak and elements of TG2 & TG3 are also likely to be present below foundation level in proximity to the area of movement/damage and influencing soil moisture and volumes. The council will require evidence which implicates T1 in damage.

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 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 detailed in Table 1 are carried out. 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.

The area of damage to the rear of the property has been considered, however the lack of structural foundations present would suggest that an arboricultural solution would not be effective in this instance. This, as well as our other recommendations are subject to review upon receipt of additional information.

[redacted]

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.

[redacted]

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	11	251	10	9	Younger than Property	Local Authority
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					
TG1	Mixed coniferous group Group of *Cupressaceae*.	Up to 7	Up to 175	Up to 4	2.3	Younger than Property	Policy Holder
Management history		Subject to past management/pruning.					
Recommendation		Remove (fell) to near ground level and treat stumps to inhibit regrowth.					
TG2	Mixed group Group including camelia, olive, mimosa and laurel.	Up to 9	Up to 170	Up to 3	1.5	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stumps to inhibit regrowth.					
TG3	Mixed group Group including camellia, prunus, red oak, Japanese maple, buddleia, tamarix.	Up to 5 *	Up to 120	Up to 4	0.8	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) prunus, red oak and camellia to near ground level and treat stumps to inhibit regrowth. Maintain other vegetation at broadly at no more than current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated value

[redacted]

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	Oak	12	275	11.5	18	Younger than Property	Local Authority
Management history		No recent management noted.					
Recommendation		No works at present.					
T3	Oak	11	187	7	9	Younger than Property	Local Authority
Management history		No recent management noted.					
Recommendation		No works at present.					
T4	Magnolia	7	191 Ms	6	4.8	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.					
T5	Oak	14	900 *	14	2.6	Older than Property	Policy Holder
Management history		Subject to past management/pruning.					
Recommendation		Do not allow to exceed current dimensions. Subject to review if movement persists.					
T6	Magnolia	3 *	120 *	3 *	6.5	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated value

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

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T7	Oak	16 *	680 *	15 *	25*	Similar Age to Property	Local Authority
Management history		No recent management noted.					
Recommendation		No works at present.					
TG4	Mixed group	Up to 18 *	Up to 800 *	Up to 15 *	25*	Older than Property	Third Party 10 & 10a Oakhill Avenue NW3 7RE
Management history		No recent management noted.					
Recommendation		No works at present.					
TG5	Mixed group Group including apple and prunus.	Up to 5 *	Up to 200 *	Up to 6 *	Up to 12 *	Younger than Property	Policy Holder
Management history		Subject to past management/pruning.					
Recommendation		No works at present. Subject to review if movement persists.					
SG1	Mixed shrub group Group including laurel, camellia, philadelphus.	Up to 4 *	Up to 50 Ms *	Up to 4	2.7	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG2	Mixed shrub group	Up to 3.5 *	Up to 40 Ms *	Up to 2	1.6	Younger than Property	Policy Holder
Management history		Regularly trimmed.					
Recommendation		No works at present. Subject to review if movement persists.					

Ms: multi-stemmed * Estimated value

[redacted]

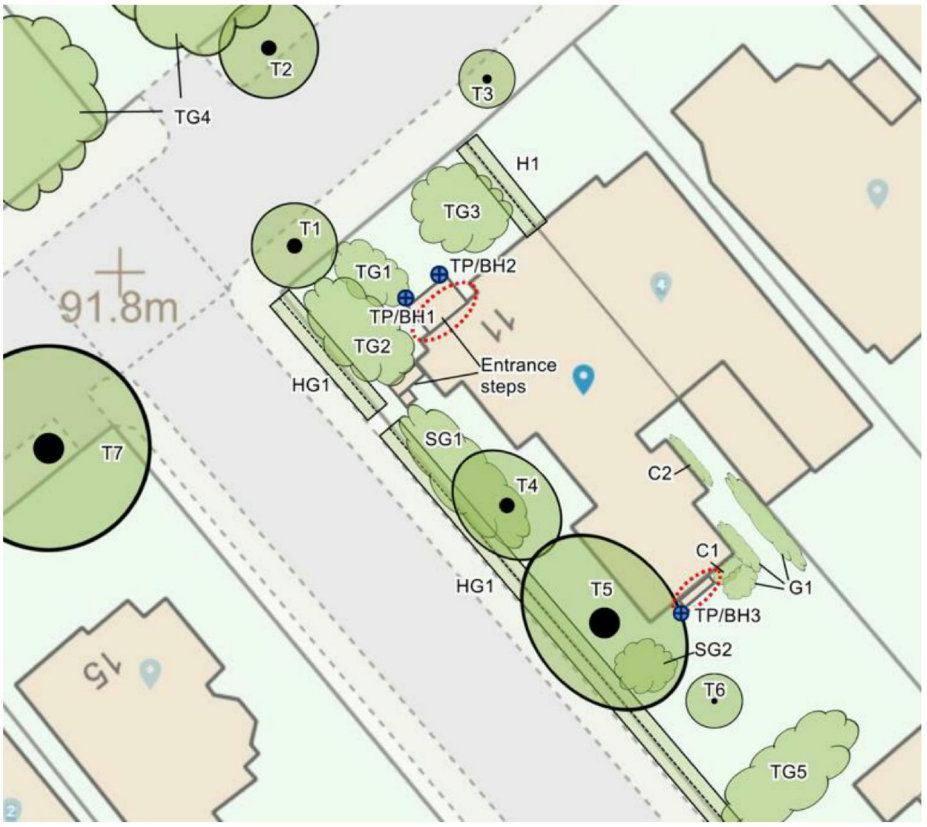
Table 2 **Future Risk** - Tree Details & Recommendation Cont'd

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
C1	Rose	5	30 Ms *	4	0.3	Younger than Property	Policy Holder
Management history		Subject to past management/pruning.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
C2	Jasmine	3.5	10 Ms *	6	0	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Do not allow to exceed current dimensions.					
G1	Tree and shrub group Group including olive, camelia, fuchsia and hydrangea.	Up to 6	Up to 100 *	Up to 2	0.4	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
H1	Yew	3	130 *	1	0.5 *	Younger than Property	Boundary Policy Holder &/or 9 Oakhill Avenue NW3 7RD
Management history		Regularly trimmed.					
Recommendation		No works at present. Subject to review if movement persists.					
HG1	Mixed hedge group Group including laurel and photinia.	Up to 4	Up to 50 Ms *	Up to 1.5 *	4 *	Younger than Property	Policy Holder
Management history		Subject to past management/pruning.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated value

[redacted]

Site Plan

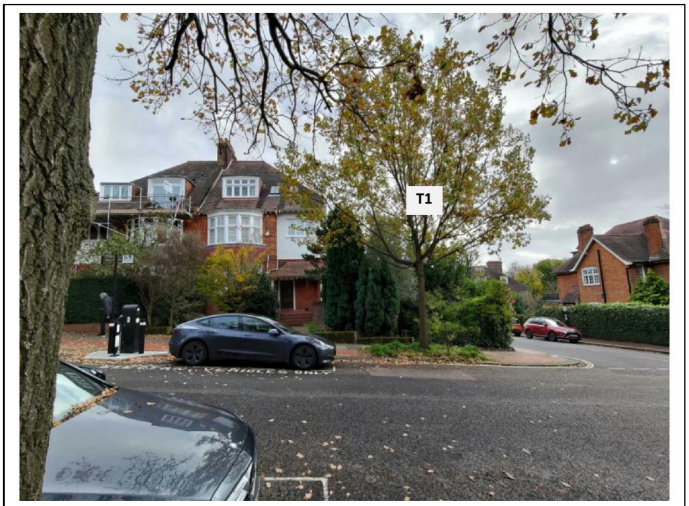


Plan not to scale – indicative only

Approximate areas of damage

[redacted]

Images




TG3


11
TG2

[redacted]