Revised

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

138 Haverstock Hill
London
NW3 2AY

CLIENT:	Pyle Consulting
CLIENT REF:	[redacted]
MWA REF:	
MWA CONSULTANT:	Andy Clark
REPORT DATE:	13/04/2023
REVISED REPORT DATE:	21/09/2023

SUMMARY

Statutory Controls			Mitigation (Current claim tree works)	
TPO current claim	Yes – T4		Policy Holder	No
TPO future risk	Yes – TG3		Domestic 3rd Party	Yes
Cons. Area	Yes		Local Authority	No
Trusts schemes	No		Other	No
Local Authority: -	London Borough of Camden			

[redacted]

Introduction

This is a revision to our original report issued when, subsequent to submission of a S211 notification, a Tree Preservation Order was served on T4 False Acacia.

Acting on instructions from Pyle Consulting, the insured property was visited on 06/04/2023 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 4 storey mid-terrace house of traditional construction, subdivided into four self-contained flats.

External areas comprise gardens to the front and rear.

The site is generally level with no adverse topographical features.

Damage Description & History

Damage relates to the vaulted front steps and portico, where cracking indicates downward movement. Damage is reported to have first been observed during the summer of 2022.

At the time of the engineer's inspection 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 building surveyor's technical report.

We have not been made aware of any previous claims.

[redacted]

Site Investigations

Site investigations were carried out by FASTRACK on 14/02/2023, 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 remote borehole was also sunk. Please refer to the Site Investigation report for further details.

Discussion

Opinion and recommendations in this report are made on the understanding that Pyle Consulting are satisfied that clay shrinkage subsidence is a cause of the current building movement and associated 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 indicates moisture depletion at the time of sampling at depths beyond normal ambient soil drying processes, such as evaporation, which is indicative of the soil drying effects of vegetation.

Roots were observed below foundation depth in TP/BH1 and BH2 and recovered samples have been positively identified (using anatomical analysis) as Pittosporum spp. and Leguminosae spp.; the origins of which will be the Pittosporum of HG1 and the False Acacia T4, 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.

If an arboricultural solution is to be implemented to mitigate the influence of the implicated trees/vegetation we recommend that the T4 False Acacia is removed and that HG1 hedgerow group is subject to significant crown management. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended. Recommended tree works may however be subject to change upon receipt of additional information.

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 to the building.

[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
T4	False Acacia	15.5	600 *	13.0	7.6	Younger than Property	Third Party 136 & 136A Haverstock Hill NW3 2AY
Management history		No significant past management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
HG1	Mixed spp. hedgerow group of mostly Rose, Pittosporum, Holly and Bay	5.0	80 * Ms	5.0	0.2	Younger than Property	Third Party 136 & 136A Haverstock Hill NW3 2AY
Management history		No significant recent management noted.					
Recommendation		Reduce height to 2.0m and cut back sides to leave no wider than 1.0m. Trim thereafter on an annual cycle to maintain at broadly reduced dimensions.					

Ms: multi-stemmed * Estimated or approximate 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
T1	Lime	8.0 *	550 *	3.0	5.5	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - previously pollarded at approx. 7.0m.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T2	Sycamore	17.0	650 *	12.5 *	16.5 *	Younger than Property	Third Party 140 Haverstock Hill NW3 2AY
Management history		No significant past management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T3	Oak	20.0	800 *	18.5 *	26.0 *	Similar Age to Property	Third Party 132 Haverstock Hill NW3 2AY
Management history		No significant past management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T5	Fig	5.5 *	100 Ms *	6.0	3.1	Younger than Property	Third Party 140 Haverstock Hill NW3 2AY
Management history		No significant past management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
TG1	Birch group	7.0 *	110 Ms *	6.0	5.9	Younger than Property	Policy Holder
Management history		No significant past management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated or approximate value

[redacted]

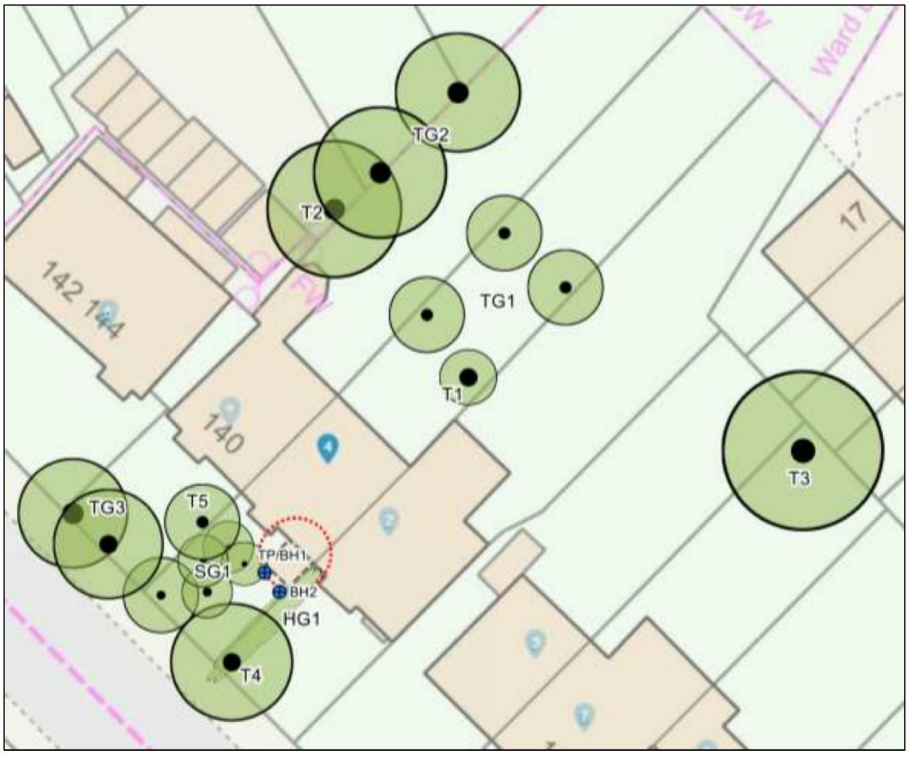
Table 2 **Future Risk** - Tree Details & Recommendations Cont'd

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
TG2	Horse Chestnut group	19.5	750 Ms *	13.0 *	19.0 *	Younger than Property	Boundary 140 Haverstock Hill NW3 2AY &/or 6 Upper Park Road NW3 2UP
Management history		No significant past management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
TG3	Horse Chestnut group	12.5 *	500 Ms *	7.5	10.0	Younger than Property	Third Party 140 Haverstock Hill NW3 2AY
Management history		Subject to past management/pruning - previously crown reduced.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG1	Mixed spp. shrub group of mostly Yew, Aucuba, Rose, Date Palm, Cherry and Elder	5.0	400 Ms *	5.0	3.0	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated or approximate value

[redacted]

Site Plan



Tree/vegetation locations are indicative Approximate areas of damage

Location / Ownership

Tree/vegetation locations are based on what could be determined at the time of the survey and should be regarded as indicative. It should be noted that boundaries are not always clear and the ownership of trees/vegetation may be disputed by property owners.

Ownership of recorded vegetation can be investigated further by MWA through Land Registry searches where required.

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

[redacted]

Images

Overview of T4 False Acacia, HG1 hedgerow group and SG1 mixed spp. shrub group

View of TG3 Horse Chestnut group

[redacted]

View of SG1 shrub group

View of HG1 hedgerow group and T4 False Acacia

[redacted]

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 abstracted by vegetation exceeds inputs from rainfall, which typically occurs 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 are susceptible to movement as the clay shrinks and swells which can result in cracking or other damage.

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 reliable 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.

[redacted]