

Revised

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

135 Dukes Avenue
London
N10 2QD



CLIENT:	Pyle Consulting
CLIENT REF:	BRC/sp/9002
MWA REF:	SUB220720-10313Rev01
MWA CONSULTANT:	Andy Clark
REPORT DATE:	09/08/2022
REVISED REPORT DATE:	16/09/2022

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: -	London Borough of Haringey		

Introduction

This is a revision to our original report dated 09/08/2022 amending the ownership of T2 Beech and T4 Pear following information received from Pyle Consulting.

Acting on instructions from Pyle Consulting, the insured property was visited on 04/08/2022 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 2 storey end-terrace house of traditional construction, built C.1902 and since extended with a conservatory to the rear.

External areas comprise gardens to the front and rear.

The property occupies a site that slopes slightly downward from left to right, however this is not considered to pose an adverse topographical feature.

Damage Description & History

Damage relates to the front right-hand sections of the insured dwelling, with internal and external cracking indicative of downward movement. Damage is reported to have first been observed during early 2022.

At the time of the engineer's inspection the structural significance of the damage was found to fall within Category 1 (Very 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.

Site Investigations

Site investigations were carried out by FASTRACK on 11/05/2022, 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. A drains survey was also undertaken.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP/BH1	Concrete	950
TP/BH2	Concrete	750
TP/BH3	Concrete	1000

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Mid brown silty sandy CLAY containing gravel, with horizon of dark brown/black silty sandy GRAVEL between 800mm and 900mm and GRAVEL below 2100mm	10 – 24	Low – Medium
TP/BH2	Dark brown/black silty sandy GRAVEL to 850mm, becoming mid brown silty sandy CLAY containing gravel to BH end at 1800mm	17 – 28	Low – Medium
TP/BH3	Mid brown silty sandy CLAY containing gravel with grey mottle at depth	35	Medium

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	1500	Fagus spp. and broadleaved species, too juvenile for positive identification [possibly also Fagus spp.]	Present
TP/BH2	750	Fagus spp.	Present
TP/BH3	1000	Fagus spp.	Present

Fagus spp. include common beech and copper beech

Drains: The drains have been surveyed and no significant defects identified.

Monitoring: No information available at the time of writing.

Discussion

Opinion and recommendations are made on the understanding that Pyle Consulting 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. A comparison between moisture content and the plastic and liquid limits suggests 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 to a depth of 1.5m bgl in TP/BH1, to 0.75m bgl in TP/BH2 and to 1.0m bgl in TP/BH3, and recovered samples have been positively identified (using anatomical analysis) as *Fagus* spp. and broadleaved species, too juvenile for positive identification [possibly also *Fagus* spp.]; the origin of which will be T2 Beech, confirming its influence on the soils below the foundations.

Irrespective of the identification of recovered root samples, the roots of the T1 Hazel will also be present below foundation level in proximity to the area of movement/damage and contributing to the influence of soil moisture and volumes. T3 Maple and T4 Pear may also be involved however, the degree of their involvement is difficult to fully assess while the influence of the much larger T2 Beech remains.

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 T2 Beech and T1 Hazel are removed in the first instance. If movement persists, or if further information comes to light to confirm their involvement, then attention will need to turn to T3 Maple and T4 Pear.

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 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.

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.

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	Hazel [with Ivy and Clematis growth]	4.5	20 Ms *	3.5	1.5	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Remove (fell) all to near ground level and treat stump to inhibit regrowth.					
T2	Beech	10.0	900 *	8.0	7.5	Similar Age to Property	Third Party 1a The Avenue N10 2QE
Management history		Subject to past management/pruning - previously pollarded at varying heights approx. 3.0m and 5.0m and since crown reduced.					
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
T3	Maple	9.0	270	8.0	9.0	Younger than Property	Local Authority
Management history		Subject to past management/pruning - previously crown reduced.					
Recommendation		Re-prune to previous points and thereafter re-prune on a triennial cycle to maintain at reduced dimensions. - or - Remove (fell) to near ground level and treat stump to inhibit regrowth if evidence confirms its involvement					
T4	Pear	8.5 *	500 *	6.5	4.5 *	Younger than Property	Third Party 1a The Avenue N10 2QE
Management history		Subject to past management/pruning - previously pollarded at approx. 5.0m.					
Recommendation		Re-prune to previous points at approx. 5.0m and thereafter re-prune on a triennial cycle to maintain at reduced dimensions. - or - Remove (fell) to near ground level and treat stump to inhibit regrowth if evidence confirms its involvement.					
SG1	Mixed spp. shrub group of mostly Wisteria, Euonymus, Philadelphus, Garrya, Contorted Hazel, Plum and Mahonia	4.5	130	6.0	0.4	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned. Wisteria is rooted in neighbouring third party property (133 Dukes Avenue) but trained over subject property conservatory.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG2	Mixed spp. shrub group of mostly Rose, Ivy, Hydrangea, Holly, Japanese Maple, Bamboo, Garrya and Berberis	5.5	70 Ms *	5.0	1.7	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.					

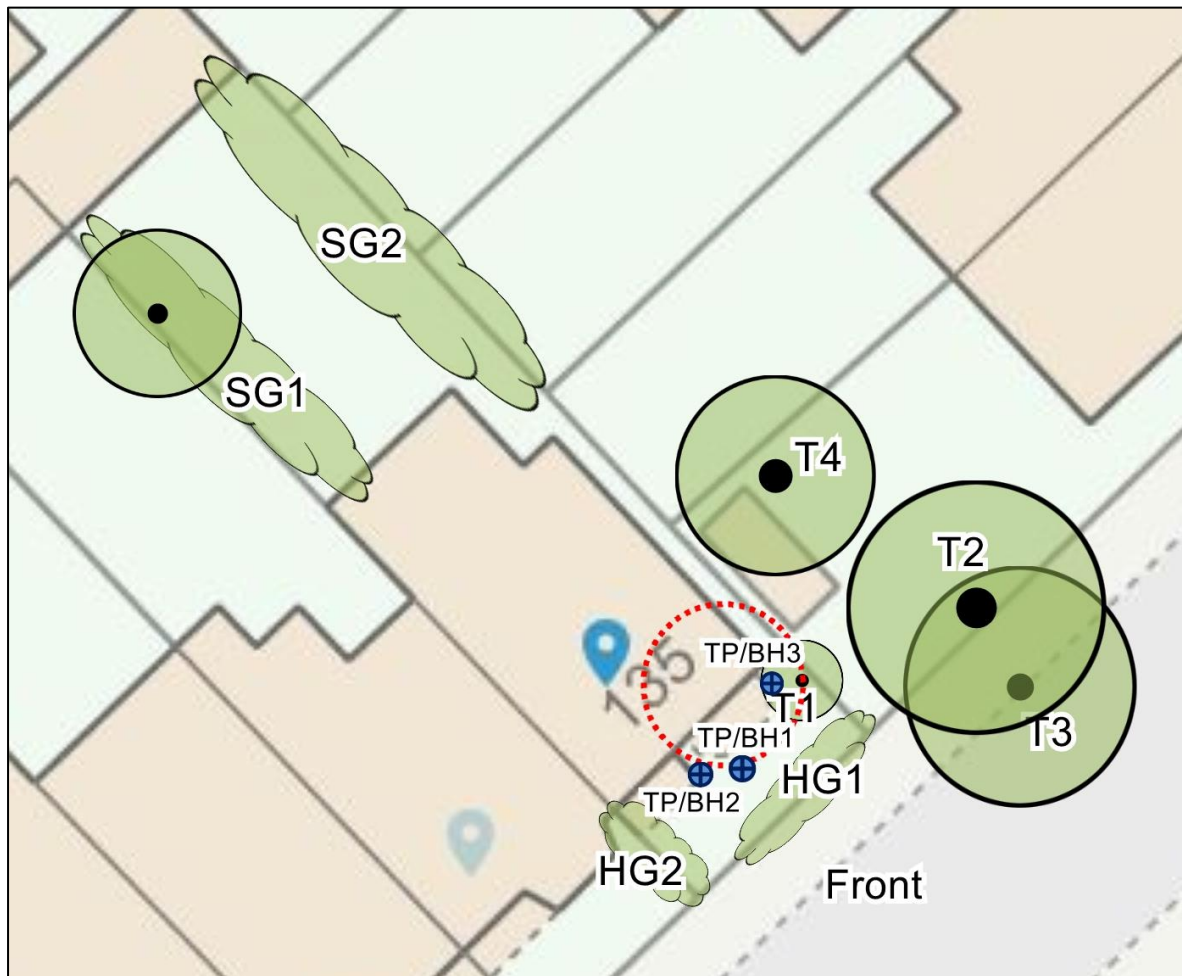
Ms: multi-stemmed * Estimated value

Table 2 **Future Risk - Tree Details & Recommendations (contd.)**

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
HG1	Photinia hedge	2.5	30 Ms *	1.0	2.8	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.					
HG2	Privet hedge	2.0	10	1.5	1.5	Younger than Property	Joint Boundary Policy Holder & 133 Dukes Avenue N10 2QD
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Cut back width to leave hedge no wider than 0.5m and trim on an annual cycle thereafter to maintain at broadly reduced dimensions.					

Ms: multi-stemmed * Estimated value

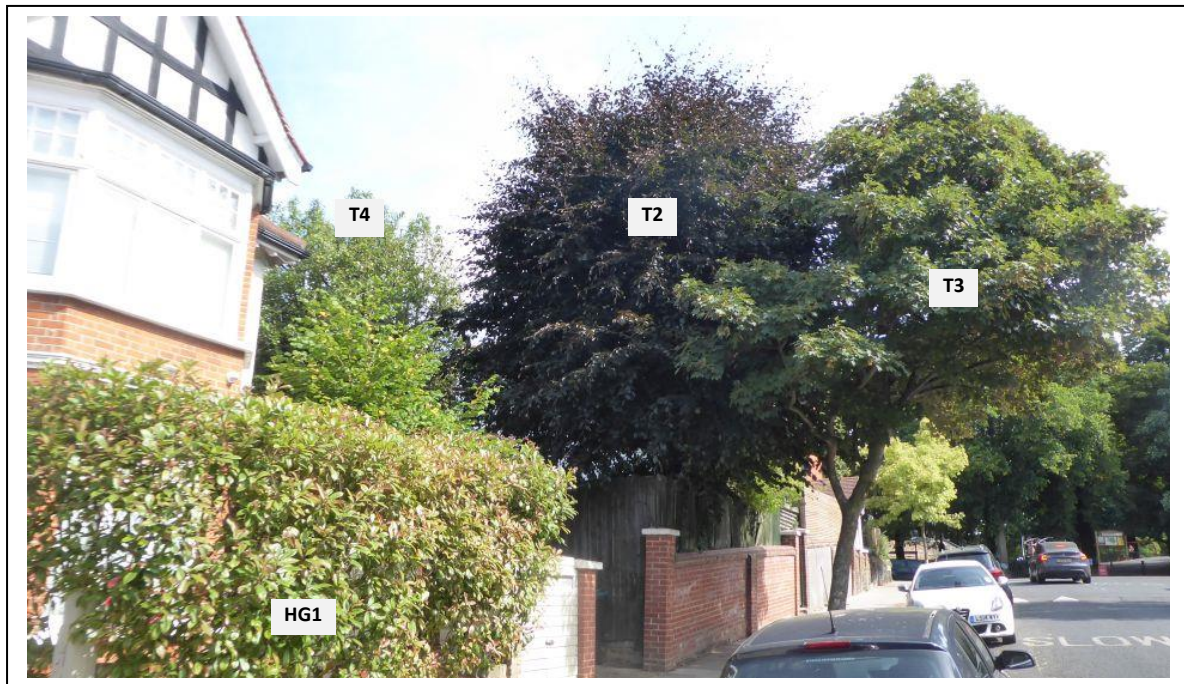
Site Plan



Plan not to scale – indicative only

 Approximate areas of damage

Images



View of T2 Beech and T3 Maple, with HG1 Photinia hedgerow to foreground and T4 Pear visible beyond



View of T1 Hazel and HG1 Photinia hedgerow with T2 Beech visible beyond



View of T1 Hazel to foreground, with T2 Beech to right of frame and T4 Pear visible beyond



View of HG2 Privet hedgerow