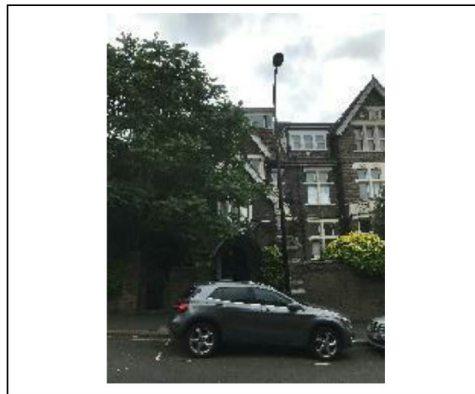


Arboricultural Appraisal Report

Subsidence Damage Investigation at:

13 Arkwright Road
London
NW3 6AA



CLIENT: Crawford & Company
 CLIENT REF: [REDACTED]
 MWA REF: [REDACTED]
 MWA CONSULTANT: George Peters BSc. (Hons), M.Arbor.A
 REPORT DATE: 18/07/2019

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 Camden		



Introduction

Acting on instructions from Crawford & Company, the insured property was visited on 13/07/19 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 5 storey detached house with a full basement built in 1900, which has since been converted into 8 flats. There is a conservatory extension to the rear.

External areas comprise gardens to the front and rear.

The site is generally level with no adverse topographical features.

Damage Description & History

Damage was noted throughout the basement flat (no. 2) where cracking has been recorded throughout. Cracking to the exterior brickwork has also been recorded at the conservatory junction and brickwork above a window. It is unclear when damage was first noticed.

At the time of the engineer's inspection (18/09/2018) the structural significance of the damage was found to fall within Category 5 (very severe) of Table 1 of BRE Digest 251.

The property was inspected when it was on risk with Allianz commercial but a claim was declined due to pre-inception damage and referred back to LV as the property was on risk since 14th of June 2013.

We have not been made aware of any previous claims.



Site Investigations

Site investigations were carried out by FASTRACK on 23/01/2019, when 2 trial pits were hand excavated to reveal the foundations, with a borehole sunk through the base of the trial pit to determine subsoil conditions. Please refer to the Site Investigation report for further details.

Discussion

Opinion and recommendations are made on the understanding that Crawford & Company 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 in TP/BH1 and TP/BH2 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 2500mm bgl in TP/BH1 and TP/BH2, recovered samples have been positively identified (using anatomical analysis) as *Fraxinus* spp., the origin of which will be T6 (Ash) confirming its 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 T6 is the principal cause of or is 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 T6 is removed. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended. Prior to removing T6, the construction date of the conservatory extension to the rear of the property should be confirmed as the tree may predate this structure.

Consideration has been afforded to T4 (Beech) and its possible contribution to the current claim damage, which is currently deemed equivocal. Should movement persist following recommended removals, the future of this tree should be considered further.



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.

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
T6	Ash	16	600 *	14	9	Younger than Property	Policy Holder
Management history		Subject to past management/pruning.					
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
T1	Walnut	9	240 *	8	10*	Younger than Property	Third Party: 11f Arkwright Road NW3 6AA
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T2	Holly	10	380 *	3	2	Younger than Property	Third Party: 11f Arkwright Road NW3 6AA
Management history		No past management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T3	Elder	4	130 *	3	2	Younger than Property	Third Party: 11f Arkwright Road NW3 6AA
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T4	Beech	12 *	700 *	10	4	Younger than Property	Third Party: 11e Arkwright Road NW3 6AA
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T5	Sycamore	10	240 *	6	9 *	Younger than Property	Third Party: 11e Arkwright Road NW3 6AA
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 & Recommendations Cont'd

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
TG1	Species include Hazel and Elder	6	100	8	2	Younger than Property	Third Party: 11f Arkwright Road NW3 6AA
Management history		Subject to past management/pruning.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
TG2	Cherry and Holm Oak	5	190 Ms *	8	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.					
TG3	Sycamore	16	400 Ms *	9	21	Younger than Property	Third Party: 47c Netherhall Gdns NW3 5RJ
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
TG4	Cypress	8	300 Ms *	10	12 *	Younger than Property	Third Party: 47b Netherhall Gdns NW3 5RJ
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
TG5	Beech	9.4	300 *	18	14	Younger than Property	Third Party: 13a Arkwright Road NW3 6AA
Management history		No past 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 & Recommendations Cont'd**

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
SG1	Species include Pyracantha, Acuba and Cherry Laurel	2.5	40 Ms *	5	1	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



Site Plan



Plan not to scale – indicative only

 Approximate areas of damage



Images



View of T6 Ash, current claim.



View of T4 Beech, future risk.





View of TG2 mixed species, future risk.



View of TG4 Cypress, future risk.

