Arboricultural Appraisal Report

Subsidence Damage Investigation at:

11 Shirlock Road
London
NW3 2HR

CLIENT:	Crawford & Company
CLIENT REF:	[redacted]
MWA REF:	
MWA CONSULTANT:	Andy Clark
REPORT DATE:	08/08/2018

SUMMARY

Statutory Controls			Mitigation (current claim works)	
TPO current claim	Yes, T1		Policy Holder	No
TPO future risk	No		3rd Party	Yes
Cons. Area	Yes		Local Authority	Yes
Trusts schemes	No		Other	No
Local Authority: -	London Borough of Camden			

[redacted]

Introduction

Acting on instructions received from Crawford & Company, the insured property was visited on 03/08/2018 for the purpose of assessing 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 3-storey end-terrace house of traditional construction.

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 front elevation of the insured dwelling and the front bay window where cracking indicates downward movement of the front of the property. Damage is believed to have first been noticed during 2014.

We have not been made aware of any previous claims.

[redacted]

Site investigations

Site investigations were carried out by CET on 03/07/2018, 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.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP1	Brick corbel on crushed brick	550
TP2	Brick corbel on crushed brick	575

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Suspected MADEGROUND: medium compact becoming medium compact to compact orange-brown silty sandy CLAY with gravel and brick fragments	Not tested	-
TP/BH2	MADEGROUND: medium compact dark brown-orange silty sandy CLAY with brick fragments	Not tested	-

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	1500	Pomoideae gp.	Present
TP/BH2	1500	Pomoideae gp. Populus or Salix spp. [very decayed]	Present Absent

Pomoideae gp include apple, cotoneaster, hawthorn, pear, pyracantha, quince, rowan, snowy mespil and whitebeam.
Populus spp. are poplars and aspen;
Salix spp. are willows.

Drains: No information available at the time of writing.

Monitoring: Crack and level monitoring is ongoing, commencing on 30/09/2014, with 18 subsequent readings over an approx. 8 week monitoring interval.

Both crack and level monitoring readings demonstrate a seasonal trend to movement, indicative of the shrink and swell movement associated with vegetation influence.

[redacted]

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 the presence of a plastic clay subsoil component, which will be susceptible to undergoing volumetric change in relation to changes in soil moisture.

Roots were observed to a depth of 1.5m bgl in TP/BH1 and in TP/BH2, and recovered live samples [positive starch test] have been positively identified (using anatomical analysis) as Pomoideae gp.; the origin of which will be the Local Authority Whitebeam tree, formerly located at ST1 on our site plan, confirming the influence of this tree on the soils below the foundations prior to its recent removal.

Given the size and relative proximity to the property of T1 Strawberry Tree, the roots of this tree will also be present below the property foundations and influencing soil moisture content.

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 available information, it is our opinion that the Local Authority Whitebeam, formerly at ST1, was a contributory cause of the current subsidence damage prior to its recent removal, with T1 Strawberry Tree also being significant.

If an arboricultural solution is to be implemented to mitigate the current damage and allow the soils beneath the property to recover to a position such that an effective repair solution can be put in place, we recommend that T1 Strawberry tree is removed. No further action is required in respect of ST1

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.

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

[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 root samples retrieved from below the property foundations.

- 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 which has recently stood on site.

- Crack and Level monitoring demonstrate a seasonal pattern of movement associated with vegetation induced moisture abstraction.

[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	Strawberry Tree	9.5	350	6.5	4.1	Younger than Property	Third Party: 13 Shirlock Road, NW3
Management history		No past management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth					
ST1	Vacant street tree pit	N/A	N/A	N/A	N/A	N/A	Local Authority
Management history		Former location of Local Authority Whitebeam Stump appears to have been recently ground-out					
Recommendation		No works required					

Ms: multi-stemmed * Estimated value

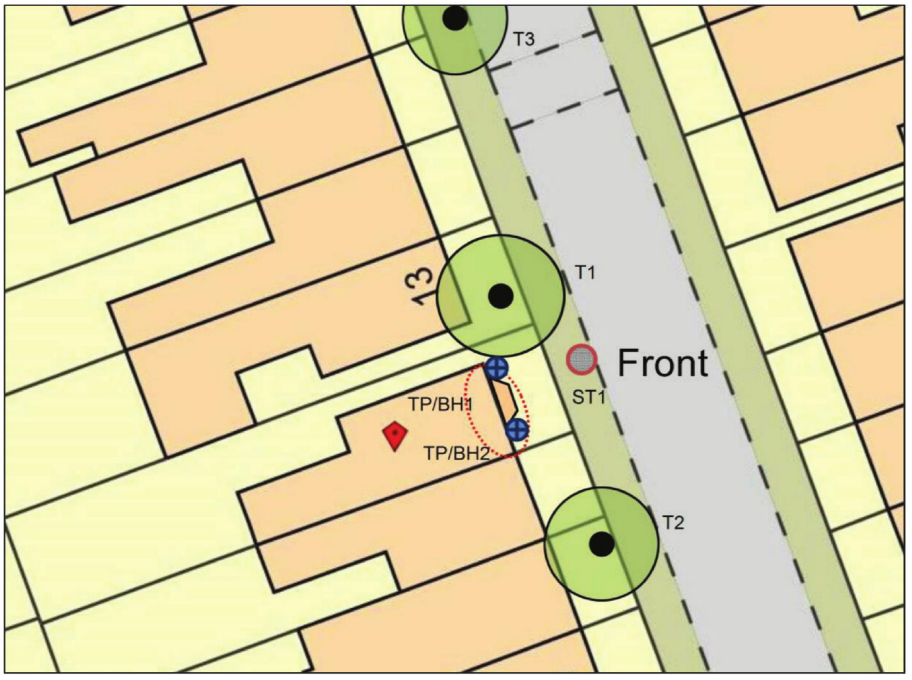
Table 2 **Future Risk** - Tree Details & Recommendations

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T2	Magnolia	8.5	300	7.0	7.0	Younger than Property	Third Party: 7 Shirlock Road, NW3
Management history		Subject to past management – previously pollarded at approx. 5.0m. Regrowth appears <10yrs.					
Recommendation		Do not allow to exceed current dimensions					
T3	Maple	9.5	290	6.5	15.9	Younger than Property	Local Authority
Management history		Previously heavily reduced – regrowth appears <5yrs					
Recommendation		Do not allow to exceed current dimensions					

Ms: multi-stemmed * Estimated value

[redacted]

SITE PLAN



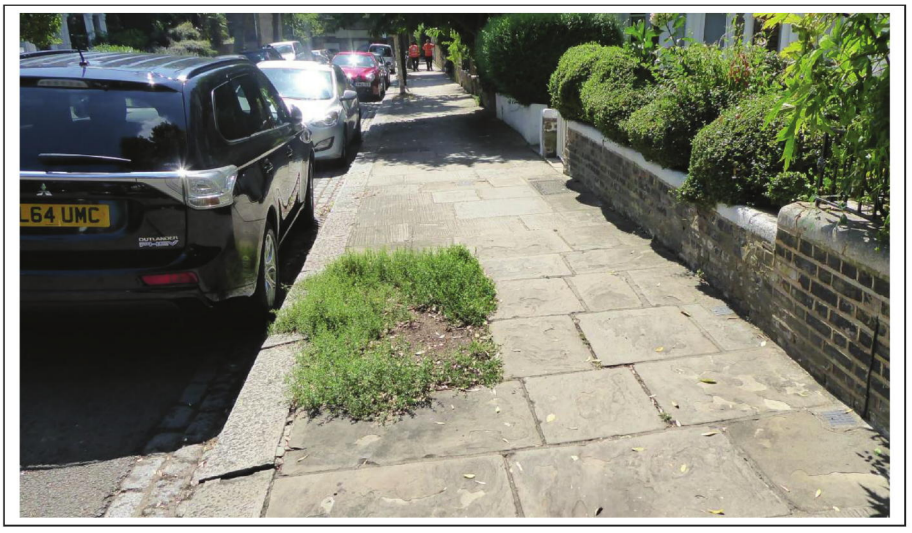
Plan not to scale – indicative only

Approximate areas of damage

[redacted]

Images

View of T1 Strawberry Tree



View of ST1 Vacant street tree pit – former location of LA Whitebeam

[redacted]

View of ST1 Local Authority Whitebeam prior to removal
[Google Streetview image date June 2015 - showing recent crown reduction]

View of T2 Magnolia

[redacted]