Arboricultural Appraisal Report

Subsidence Damage Investigation at:

38 Steele's Road
Hampstead
London
NW3 4RG

CLIENT:	Crawford & Company
CLIENT REF:	[redacted]
MWA REF:	
MWA CONSULTANT:	Mark Johnson (FdSc; MArborA)
REPORT DATE:	01/11/2019

SUMMARY

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

[redacted]

Introduction

Acting on instructions from Crawford & Company, the insured property was visited on 23/10/2019 to assess the potential role of vegetation in respect of subsidence damage.

There was previous subsidence claim in 2016 with damage affecting the rear projection. The site was visited by MWA on 07/06/2017 and recommendations for tree management were made in the MWA Arboricultural Appraisal Report dated 08/06/2017. Following the removal of various trees repairs were carried out in October with renewed cracking reported in January 2019.

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.

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 detached house built in c.1873. It has been extended with a two-storey 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 relates to the rear projection with internal and external cracking recorded by engineers. Damage was first noticed January 2019.

Cracking is evident internally to the left and right sides of the bay window in the first floor meeting room. Externally there is vertical cracking to the right flank, tapering cracks to the left side bay window and vertical tapering cracks to the right side of the bay.

At the time of the engineer's inspection (01/10/2019) the structural significance of the damage was found to fall within Category 3 (moderate) of Table 1 of BRE Digest 251.

For a more detailed synopsis of the damage please refer to the surveyor's technical report.

[redacted]

Site Investigations

Site investigations were carried out by CET on 10/04/2017 when two trial pits were hand excavated to reveal the foundations, each with a borehole being sunk through the base of the trial pit to determine subsoil conditions.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP1	Concrete	1250
TH2	Concrete	1350

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	MADE GROUND: Medium compact, mid brown, silty clay with numerous brick rubble to 0.65m. MADE GROUND: Medium compact, mid brown, silty clay with occasional brick fragments to 1.25m. Very Stiff orange-brown silty CLAY to 3.00m. Terminated at 3.00m.	48 - 49	High
TP/BH2	MADE GROUND: Medium compact, mid brown, silty clay with occasional brick fragments to 1.35m. Very Stiff orange-brown silty CLAY to 3.00m. Terminated at 3.00m.	49 - 54	High

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	1500	*Acer* spp. *Betula* spp.	Present Present
TP/BH2	1600	*Acer* spp.	Present

Drains: No information available at the time of writing.

Monitoring: Crack monitoring carried out from 31.01.2017 to 18.04.2017.

[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 a plastic clay subsoil susceptible to undergoing volumetric change in relation to changes in soil moisture. Previous site investigation indicated desiccation in April 2017.

Recommendations set out in MWA Arboricultural Appraisal Report 08/06/2017 have been carried out.

With respect to the further damage, of the remaining vegetation T5 and T8 are considered to be most significant. Whilst no roots from T8 have been identified these are likely to be present based on the trees height and proximity. The continuing movement in the building suggests the reduction of T8 has not been sufficient to mitigate its influence and on this basis removal is now recommended together with T5.

Based on the information currently available, engineering opinion and our own site assessment we conclude the damage is consistent with shrinkage of the clay fraction due to the soil drying effects of vegetation.

If an arboricultural solution is to be implemented to mitigate the influence of the trees considered to be responsible for the damage we recommend that T5 and T8 are removed

Consideration has been given to pruning alone as a means of mitigating the vegetative influence, however due to the return of movement/damage following tree works this is not considered to offer a viable long-term solution.

Recommended tree works may be subject to change upon receipt of additional information.

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

[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	Sycamore	18	450*	7	3.3	Younger than property	Third Party: 39 Steele's Road NW3 4RG
Management history		Removed since last visit.					
Recommendation		N/A					
T2	Silver Birch	18	420	8	1.2	Younger than property	Policy Holder
Management history		Removed since last visit.					
Recommendation		N/A					
T5	Pear	10.5	420 *	8.5 *	7.1	Younger than Property	Third Party: 39 Steele's Road NW3 4RG
Management history		Subject to past management/pruning.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
T8	Plane (London)	21 *	800 *	17	16	Similar Age as Property	Third Party: 37 Steele's Road NW3 4RG
Management history		Reduced following initial report.					
Recommendation		Remove (fell) to near ground level.					
SG3	Multiple species	4	Ms 150	5 x 7	1.6	Younger than property	Policy Holder
Management history		Removed since last visit					
Recommendation		N/A					

Ms: multi-stemmed * Estimated value

[redacted]

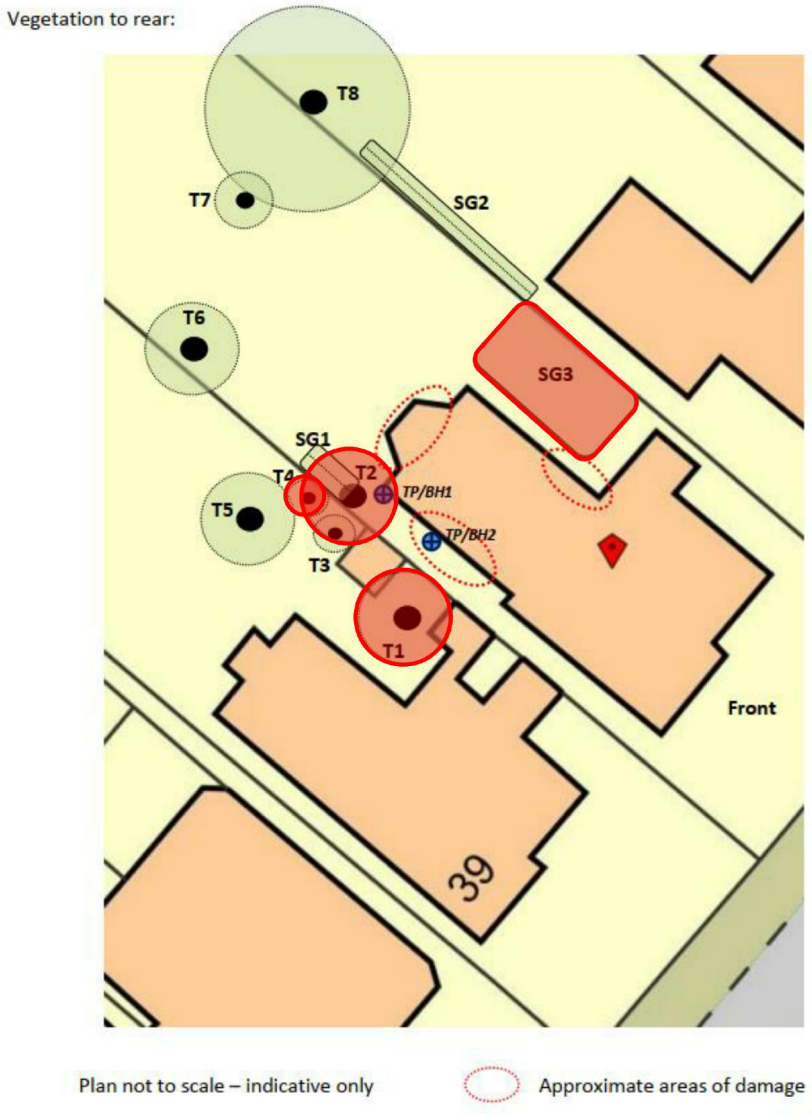
Table 2 **Future Risk** - Tree Details & Recommendations

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T3	Laburnum	5.5	Ms	6 *	2.8	Younger than Property	Third Party: 39 Steele's Road NW3 4RG
Management history		Subject to past management/pruning.					
Recommendation		Reduce height by 1.5m and crown radius by 1m leaving balanced crown. Prune on an annual cycle to maintain at broadly reduced dimensions.					
T4	Plum	7	90*	3	3.3	Younger than property	Third Party: 39 Steele's Road NW3 4RG
Management history		Removed since last visit.					
Recommendation		N/A					
T6	Apple	7.5	320	9 *	10.3	Younger than Property	Policy Holder
Management history		Subject to past management/pruning.					
Recommendation		Reduce height by 1.5m and crown radius by 2m leaving balanced crown. Prune on a triennial cycle to maintain at broadly reduced dimensions.					
T7	Bay Laurel	12	140	4	14.8	Younger than property	Policy Holder
Management history		Subject to past management/pruning.					
Recommendation		Do not allow to exceed current dimensions.					
SG1	Multiple species	1.5	Ms 50	2.5	1.75	Younger than property	Policy Holder
Management history		Subject to past management/pruning.					
Recommendation		Maintain at broadly no more than current dimensions by periodical pruning.					
SG2	Cotoneaster/laburnum	4	Ms	4	7.4	Younger than Property	Third Party: 37 Steele's Road NW3 4RG
Management history		No recent management noted.					
Recommendation		Reduce height to 1.75m. Prune on an annual cycle to maintain at broadly reduced dimensions.					

Ms: multi-stemmed * Estimated value

[redacted]

Site Plan



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Images

View of T8 and SG3

View of T3 and T5

[redacted]

View of T3

View of T6

[redacted]