Arboricultural Appraisal Report

Subsidence Damage Investigation at:

Flat 2, 34 Frognal
London
NW3 6AG

CLIENT: Crawford & Company

[redacted]

MWA CONSULTANT: Andy Clark

REPORT DATE: 11/03/2020

SUMMARY

Statutory Controls			Mitigation (Current claim tree works)	
TPO current claim	No		Policy Holder	Yes
TPO future risk	Yes – TG2		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 26/02/2020 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 semi-detached house of traditional construction, built C.1840. The property includes an original two storey rear projection which has since been extended with a conservatory addition to the rear constructed onto steel framework with supporting steel pillars - understood to be mounted on 900mm x 900mm concrete pads installed approx. 2.5/3.0m below ground level.

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 conservatory where cracking and seperation at the abutment of the main building indicates downward movement. Damage is reported to have first been observed during 2017.

At the time of the engineer's inspection (12/11/2019) 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 surveyor's technical report.

We have not been made aware of any previous claims.

[redacted]

Site Investigations

Site investigations were carried out by CET on 16/01/2020, when a single borehole was sunk to determine subsoil conditions. A drains survey was also undertaken.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
BH1	N/A	N/A

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
BH1	MADEGROUND: medium compact mid to dark brown silty sandy clay with occasional gravel, brick and clinker pieces to 1200mm, becoming firm to very stiff mid brown, grey veined sandy silty CLAY with partings of orange and brown silt and fine sand and very occasional gravel.	21 - 34	Medium

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
BH1	3000	Platanus spp. and Tilia spp.	Present

Platanus spp. include London plane and Oriental plane
Tilia spp. are limes

Drains: The drains have been surveyed and although defects have been identified, defective drains are concluded not to be a cause of the current damage.

Monitoring: No information available at the time of writing.

[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.

Roots were observed to a depth of 3.0m bgl in BH1, and recovered samples have been positively identified (using anatomical analysis) as Platanus spp. and Tilia spp.; the origins of which will be T1 London Plane and most likely the TG1 Lime group, however the TG2 Lime group is also within influencing distance and may account for retrieved samples.

Irrespective of the identification of recovered root samples, the roots of T2 Sycamore are also likely to be present below foundation level in proximity to the area of movement/damage and contributing to the influence of soil moisture and volumes.

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 T1 London Plane, T2 Sycamore and TG1 Lime group are the combined cause of the current subsidence damage. TG2 Lime group has recently been pollarded, and so any current involvement is at present equivocal.

If an arboricultural solution is to be implemented to mitigate the influence of the implicated trees/vegetation we recommend that T1 London Plane is pollarded, T2 Sycamore and TG1 Lime group are removed. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended.

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 however be subject to change upon receipt of additional information.

[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 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.

[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	London plane	22.5	800 *	18.5	17.0	Older than Property	Third Party: 39 Netherhall Gdns NW3 5RL
Management history		Subject to past management/pruning - previously pollarded at approx. 6.0 m					
Recommendation		Pollard at previous reduction @ approx. 6m. See photos below. Pollard on a triennial cycle.					
T2	Sycamore	21.5	700 *	14.5	18.5	Older than Property	Third Party: 39 Netherhall Gdns NW3 5RL
Management history		No past management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
TG1	Lime group [x3 stems]	19.5	390	4.9	12.6	Similar Age to Property	Policy Holder
Management history		Subject to past management/pruning - previously pollarded at approx. 15.0m.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					

Ms: multi-stemmed * Estimated value

[redacted]

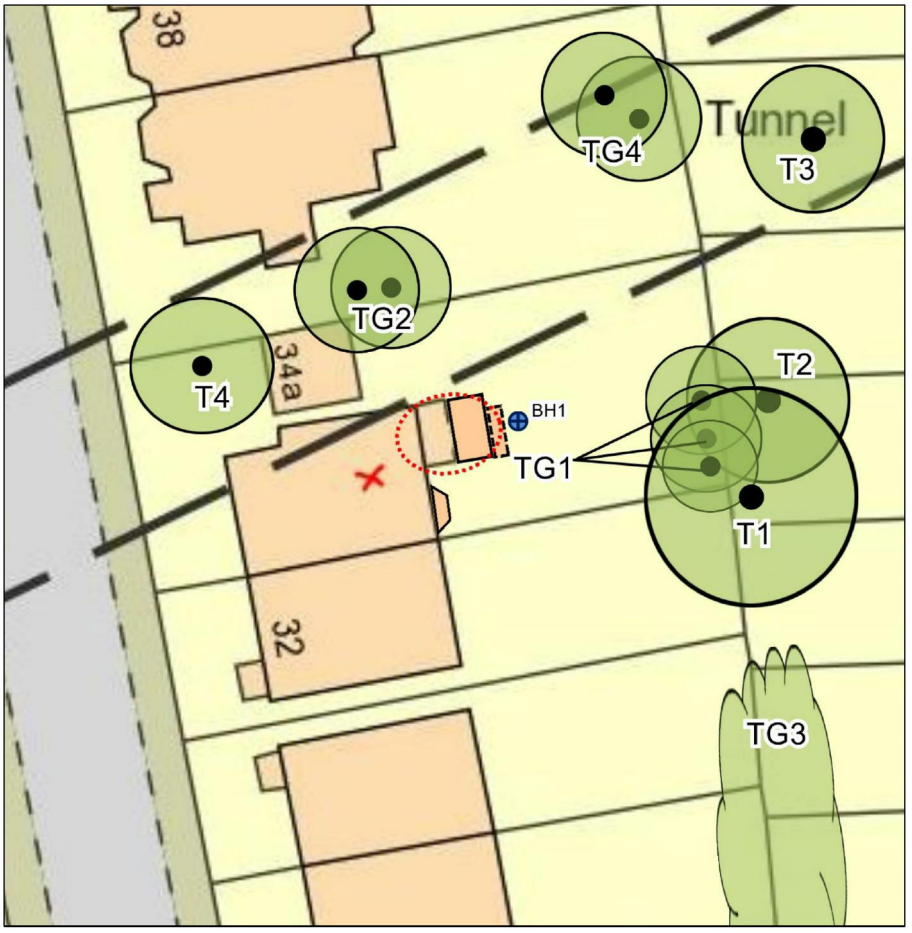
Table 2 **Future Risk** - Tree Details & Recommendations

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T3	Lime	22.5	750 *	13.0 *	23.0	Older than Property	Third Party: 43 Netherhall Gdns NW3 5RL
Management history		Subject to past management/pruning - previously crown reduced.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T4	False Acacia	9.5	550 *	10.5	6.1	Similar Age to Property	Third Party: 34a Frognall NW3 6AG
Management history		No past management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
TG2	Lime group [x 2 stems]	18.0 *	600 *	9.0	5.9*	Older than Property	Third Party: 36 Frognall NW3 6AG
Management history		Subject to past management/pruning – recently pollarded at current dimensions and historically pollarded at approx. 6.5m.					
Recommendation		Maintain broadly at no more than current dimensions by periodic [triennial] re-pollarding.					
TG3	Lime group	18.0	550 Ms *	11.0	18.6	Older than Property	Third Party: ownership not visible from PH garden (Possibly 33/35 Netherhall Gdns)
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
TG4	Sycamore group [x2 stems]	15.5	350 *	9.0	19.6	Younger than Property	Third Party: 36 Frognall NW3 6AG
Management history		Subject to past management/pruning - previously crown reduced.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated value

[redacted]

Site Plan

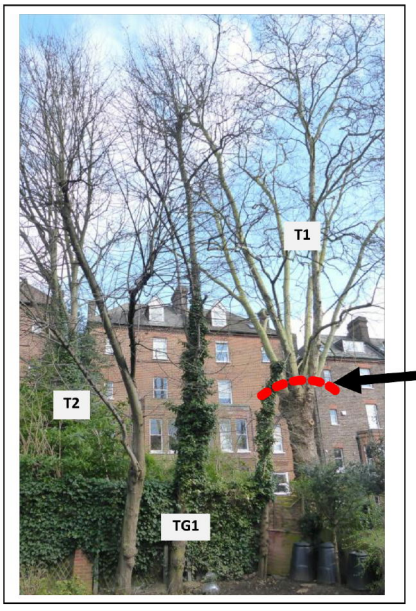


Plan not to scale – indicative only

Approximate areas of damage

[redacted]

Images



View of T1 London Plane, TG1 Lime group and T2 Sycamore

View of T3 Lime and TG4 Sycamore group with T2 Sycamore visible to right of frame

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View of TG2 Lime group

View of T4 False Acacia

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