

Revised Arboricultural Report

Subsidence Damage Investigation at:

Hill Court
Hanger Lane
London
W5 3DF



CLIENT:	Crawford & Company
CLIENT REF:	SU1805461
MWA REF:	SUB181129-3016Rev02
MWA CONSULTANT:	George Peters BSc. (Hons)
REPORT DATE:	30/03/2020

SUMMARY

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

Introduction

This is a revision of our Rev01 report dated 26/07/2019, following receipt of site investigation data and summarised in this report.

Acting on instructions from Crawford & Company, the insured property was visited on 08/12/2018 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 3 storey detached block of 6 flats built in circa 1890. 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. There is internal and external cracking present. Damage was first noticed on the 1st February 2018.

At the time of the engineer's inspection (24/09/2018) the structural significance of the damage was found to fall within Category 2 (slight) of Table 1 of BRE Digest 251.

We have not been notified on any previous claims.

Site Investigations

Site investigations were carried out by CET on 18/11/2019, when a single trial pit was 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)
TP/BH1	Concrete	1400

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Stiff brown, grey veined silty sandy CLAY with partings of orange silt and fine sand	43 – 55	High

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	2800	Acer spp. Fraxinus spp.	Positive Positive

Fraxinus spp. include common ash.

Acer spp. are maples, including sycamore, Norway maple, and Japanese maples.

Drains: Drains have been surveyed and defects identified, although leaking drains are not considered to the cause of the subsidence.

Monitoring: No information at the time of writing.

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 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 2800mm bgl in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as *Fraxinus* spp., and *Acer* spp., the origin of which will be T2 – T3 (ash) and TG1 (ash and sycamore) confirming their 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 T2, T3 and TG1 are the principal cause of or are 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 T2, T3 and TG1 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 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
T2	Ash	13	400	9	5	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					
T3	Ash	14	320	7	5	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					
TG1	Ash and sycamore	10	150	6	4.8	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					

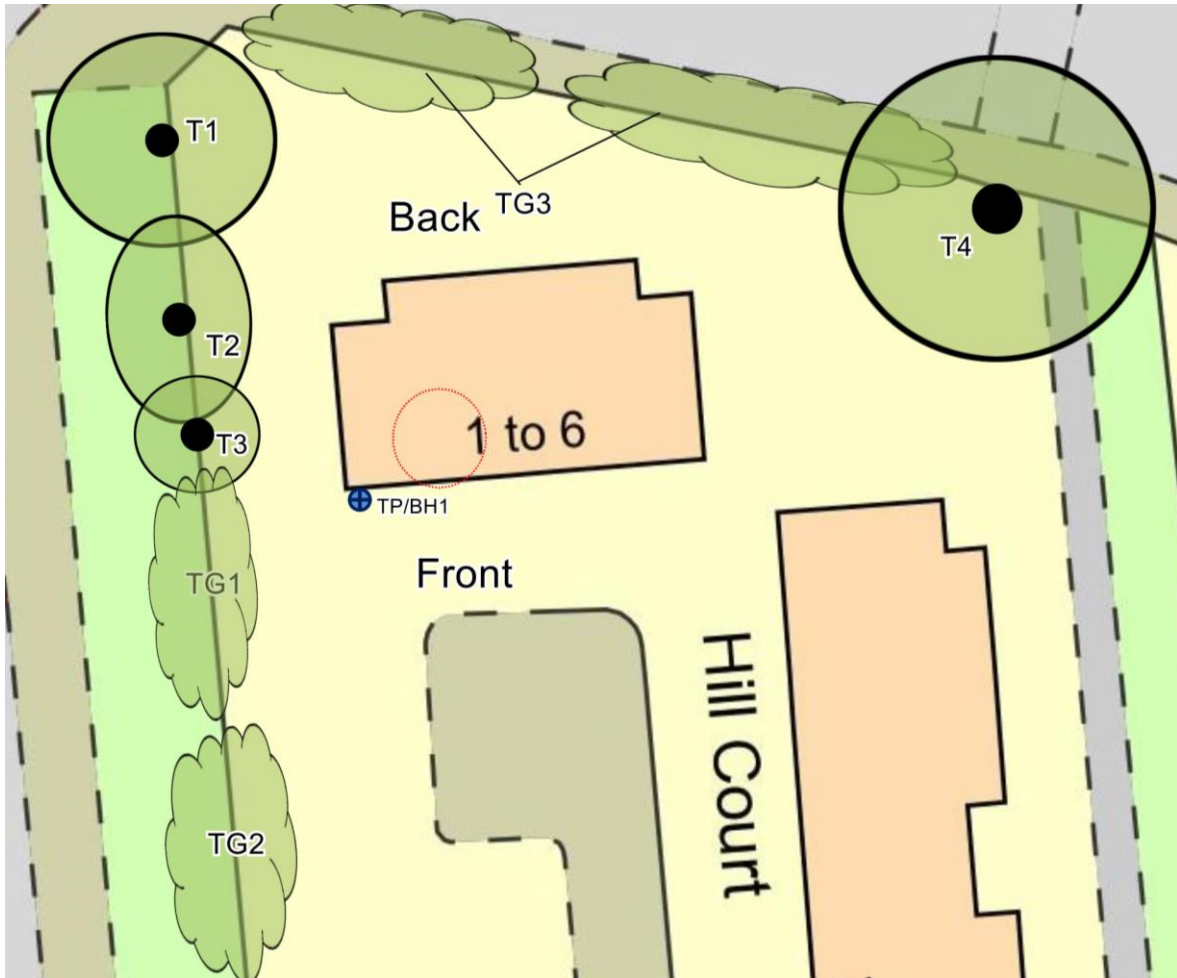
Ms: multi-stemmed * Estimated value

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	Ash	14	320	8	11	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Do not allow to exceed current dimensions.					
T4	Ash	14	400	12	12	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Do not allow to exceed current dimensions.					
TG2	Mixed species group	13	300	9	13.4	Younger than Property	Policy Holder
Management history		Species include Ash and Robinia. Subject to past management.					
Recommendation		Do not allow to exceed current dimensions.					
TG3	Ash	13	150	6	4.5	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					

Ms: multi-stemmed * Estimated value

Site Plan



Plan not to scale – indicative only



Approximate areas of damage

Images



View of T2 Ash, current claim.



View of T3 Ash, current claim.



View of TG1 Ash and sycamore, current claim.



View of T4 Ash, future risk.