

## Arboricultural Appraisal Report

### Subsidence Damage Investigation at:

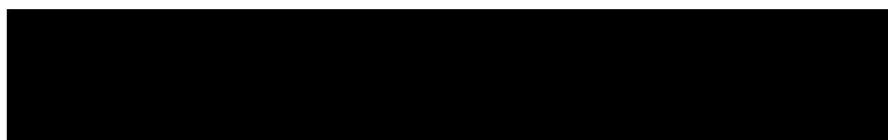
Somerset House  
31 Dartmouth Park Hill  
London  
NW5 1HR



CLIENT:	Crawford & Company
CLIENT REF:	[REDACTED]
MWA REF:	[REDACTED]
MWA CONSULTANT:	George Peters BSc. (Hons)
REPORT DATE:	17/02/2020

### SUMMARY

Statutory Controls		Mitigation (Current claim tree works)	
TPO current claim	No	Policy Holder	Yes
TPO future risk	No	Domestic 3 <sup>rd</sup> Party	Yes
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 13/02/20 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 four-storey purpose-built block of flats built in C1900. The building is accessed off Chetwynd Road.

External areas comprise small gardens to the front and left with various shrubs and small trees. The site is generally level with no adverse topographical features.

## Damage Description & History

Damage relates to the front left-hand corner (reoccurring previous damage from 2015) and the right-hand section of the block with internal cracking at ground and first floor levels. Damage was first noticed in August 2018.

At the time of the engineer's inspection (08/10/2018) the structural significance of the damage was found to fall within Category 3 (moderate) of Table 1 of BRE Digest 251.

The property was the subject of a previous claim in 2015 reference SU1505185, with damage specific to the front left-hand corner. T1 (hawthorn) was removed and the damage repaired. The rear left corner of the property was previously underpinned, though details as to the extent of this work is not available. For a more detailed synopsis of the damage please refer to the surveyor's technical report.



## Site Investigations

Site investigations were carried out by CET on 25/02/2019, when a single trial pit was excavated to reveal the foundations.

### Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP1	Concrete with concrete underpin. Unable to determine full depth (TP1 abandoned at 2000mm)	>2000

### Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Medium compact, brown, clayey, silt with whole bricks and brick fragments	-	-

### Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	2000	Hedera or Fatsia spp.	Positive

*Hedera spp. include ivy; Fatsia spp. are shrubs closely related to ivy.*

**Drains:** No information available at the time of writing.

**Monitoring:** No information available 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.

Roots were observed to a depth of 2000mm bgl in TP1 and recovered samples have been positively identified (using anatomical analysis) as hederia or fatsia spp., the origin of which will be ivy located proximate to the position of TP1, which is not considered significant to the current claim.

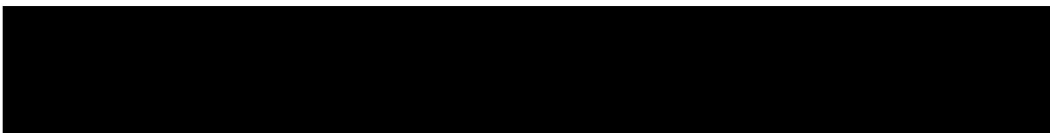
Irrespective of the identification of recovered root samples, the roots of SG2 (mixed species group including buddleia removed December 2019) and T2 (cherry) are likely to be influencing soil moisture (and therefore volumes) proximate to the damage at the front left-hand corner. Additionally, T3 (pear) T4 (elder) and T5 (pear) are also likely to be present below foundation level in proximity to the area of movement/damage to the right of the building.

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 SG2 and T2 – T5 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 further to the removal of SG2, T2 – T5 are removed. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended.

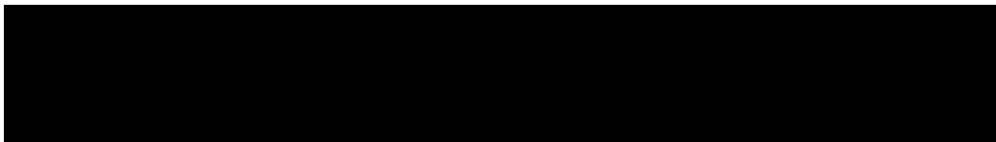
Consideration has been given to pruning alone as a means of mitigating the vegetative influence, however in this case, this is not considered to offer a viable long-term solution due to the proximity of the responsible vegetation.

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	Cherry	6	75	1.5	3.1	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
T3	Pear	14	280 *	8	3.8	Younger than Property	Third Party 29 Dartmouth Park Hill, NW5 1HR
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).					
T4	Elder	7.5	200 Ms *	5	4.2	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
T5	Pear	6	130 Ms *	3	6.6	Younger than Property	Third Party 29 Dartmouth Park Hill, NW5 1HR
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
SG2	Mixed species - included buddleia	0	50*	0	3.1*	Younger than Property	Policy Holder
Management history		Removed December 2019.					
Recommendation		N/A					

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	Hawthorn	0	150	0	3.5	Younger than Property	Policy Holder
Management history		Removed as part of previous claim.					
Recommendation		N/A					
T6	Possibly an <i>Alnus</i> . Limited visibility – unable to positively identify.	12	250 *	8	18 *	Younger than Property	Third Party 29 Dartmouth Park Hill, NW5 1HR
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T7	False Acacia	14	340	8	11	Younger than Property	Local Authority
Management history		No recent management noted.					
Recommendation		None at present.					
TG1	<i>Prunus</i> spp	3	10 Ms *	5	3	Younger than Property	Third Party 29 Dartmouth Park Hill, NW5 1HR
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
S1	Elder	0	100	0	2.5	Younger than Property	Policy Holder
Management history		Removed December 2019.					
Recommendation		N/A					

Ms:      multi-stemmed                      \* Estimated value



**Table 2**                      **Future Risk - Tree Details & Recommendations Cont'd**

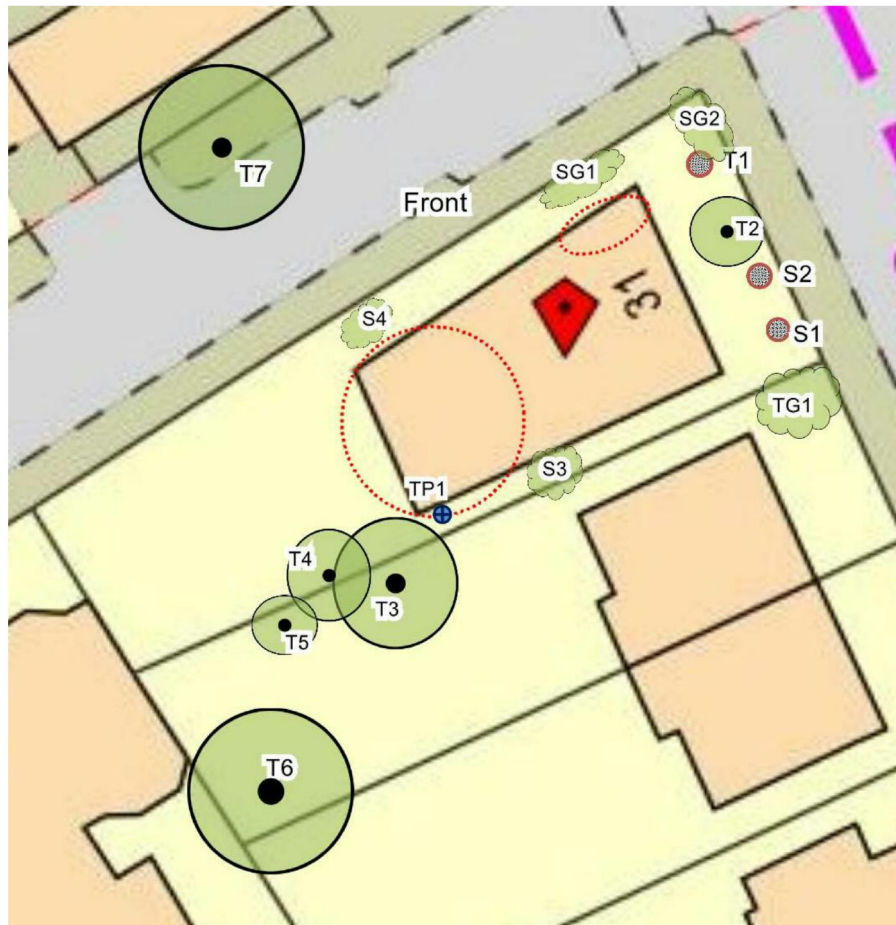
Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
S2	Bamboo	0	<70	0	3.5	Younger than Property	Policy Holder
Management history		Removed December 2019.					
Recommendation		N/A					
S3	Elder	4	20 Ms	2	1	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
S4	Pyracantha	2	30 *	2	2	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG1	Includes euonymus	1	40 *	4	1.5	Younger than Property	Policy Holder
Management history		No recent management noted. Located in raised planter.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

Ms:      multi-stemmed


\* Estimated value

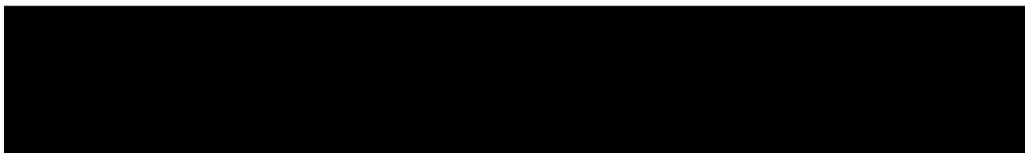


Site Plan

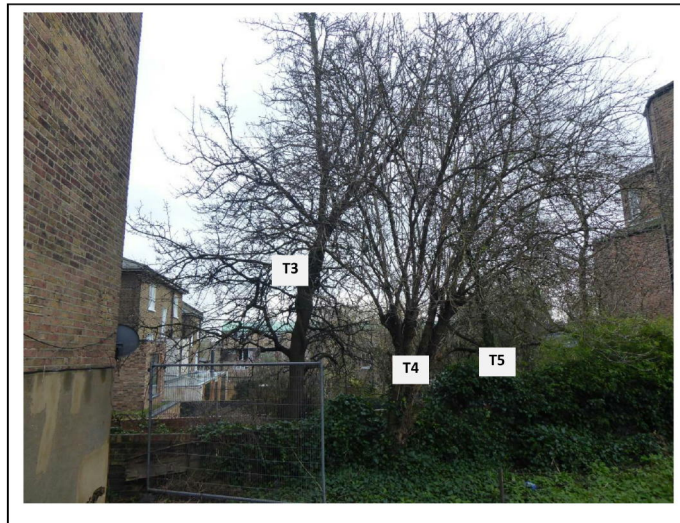


Plan not to scale – indicative only

 Approximate areas of damage



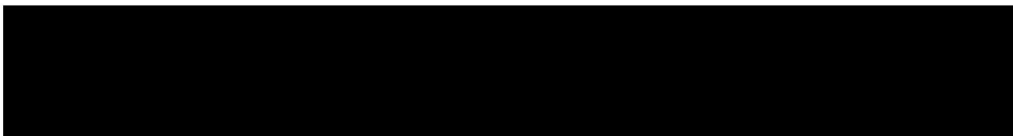
## Images



View of T3 pear, T4 elder and T5 pear, current claim.

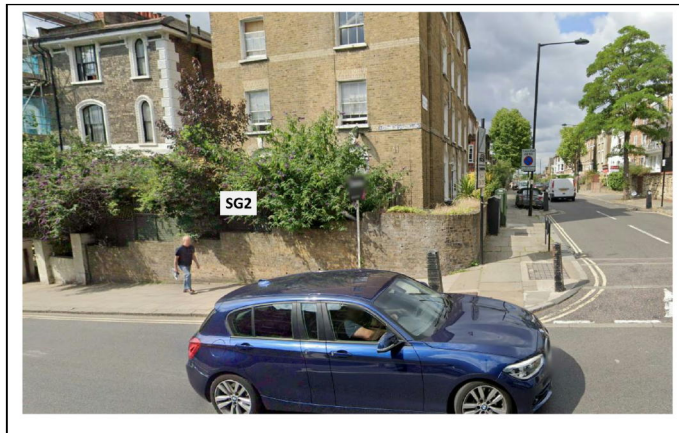


View of T6, possibly ailanthus (unable to positively ID due to access), future risk.





View of T2, cherry, current claim.



Google Street View July 2019 of SG2 mixed species including buddleia, removed December 2019, current claim.

