

Revised
Addendum Arboricultural Report

Subsidence Damage Investigation at:

73 Aberdare Gardens
 London
 NW6 3AN



CLIENT:	Davies Group Ltd
CLIENT REF:	[REDACTED]
MWA REF:	[REDACTED]
MWA CONSULTANT:	Andy Clark
REPORT DATE:	03/02/2021

SUMMARY

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



Introduction

This is a further revision following confirmation that T1 Oak became subject to a tree preservation order 07/09/20. Our initial report [dated 04/05/2020] was revised 07/10/20 following receipt of site investigation results carried out on the 08/06/2020.

Acting on instructions from Davies Group Ltd, the insured property was visited on 02/05/2020 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.

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 semi-detached house of traditional construction, built c.1930 and since subdivided into three self-contained flats. 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 sections of the insured dwelling, with internal and external cracking indicative of downward movement. Damage is reported to have first been observed during November 2019.

At the time of the engineer's inspection (21/01/2020) 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.



Site Investigations

Site investigations were carried out by the Drainage Repair Company on 08/06/2020, when two trial pits were hand excavated to reveal the foundations with a borehole sunk through the base of the trial pit to determine subsoil conditions. A drainage inspection was also carried out.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP/BH1	Concrete	1900
TP/BH2	Concrete	1850

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Firm to stiff brown slightly gravelly slightly sandy CLAY	39 - 41	Medium - High
TP/BH2	Stiff brown to friable brown very gravelly very sandy CLAY	32	Medium

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	3000	Leguminosae spp. and Quercus spp.	Unknown
TP/BH2	2600	Berberis or Mahonia spp., Oleaceae spp. and Cupressaceae spp.	Unknown

Leguminosae spp. include laburnum, Robinia (false acacia or locust), broom, the pagoda tree and the climber wisteria.

Quercus spp. are oaks (both deciduous and evergreen).

Berberis or Mahonia spp. are shrubs with holly like leaves.

Oleaceae spp. include lilac, privet, forsythia, olive, jasmine, osmanthus, phillyrea, forestiera.

Cupressaceae spp. include Lawson cypress, western red cedar, Monterey cypress, Leyland cypress and junipers.

Drains: The drains have been surveyed and defects have been identified, however defective drainage is concluded not to be a cause of the current subsidence damage.

Monitoring: No information available at the time of writing.



Discussion

Opinion and recommendations are made on the understanding that Davies Group Ltd remain 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 at depths beyond normal ambient soil drying processes, such as evaporation, which is indicative of the soil drying effects of vegetation.

Roots were observed to a depth of 3.0m bgl in TP/BH1 and to 2.6m bgl in TP/BH2, and recovered samples have been positively identified (using anatomical analysis) as Leguminosae spp., Quercus spp., Berberis or Mahonia spp., Oleaceae spp. and Cupressaceae spp.

Our survey has previously identified vegetation within influencing distance of the building with a current potential to influence soil volumes below foundation level, the most significant of which in relation to the current damage were identified as T1 Oak [Quercus spp.], T2 False Acacia [Leguminosae spp.] and T3 Cypress [Cupressaceae spp.]. A potential for localised influence from SG1 and SG2 Privet groups [Oleaceae spp.] was also identified. The presence of corresponding roots samples retrieved from below the property foundations now confirms the influence of the related vegetation.

Based on the information currently available, engineering opinion and our own site assessment we conclude the damage appears 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/shrubs considered to be responsible for the damage we recommend that T1 Oak, T2 False Acacia, T3 Cypress are removed and that SG1 and SG2 Privet groups are reduced.

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.



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.



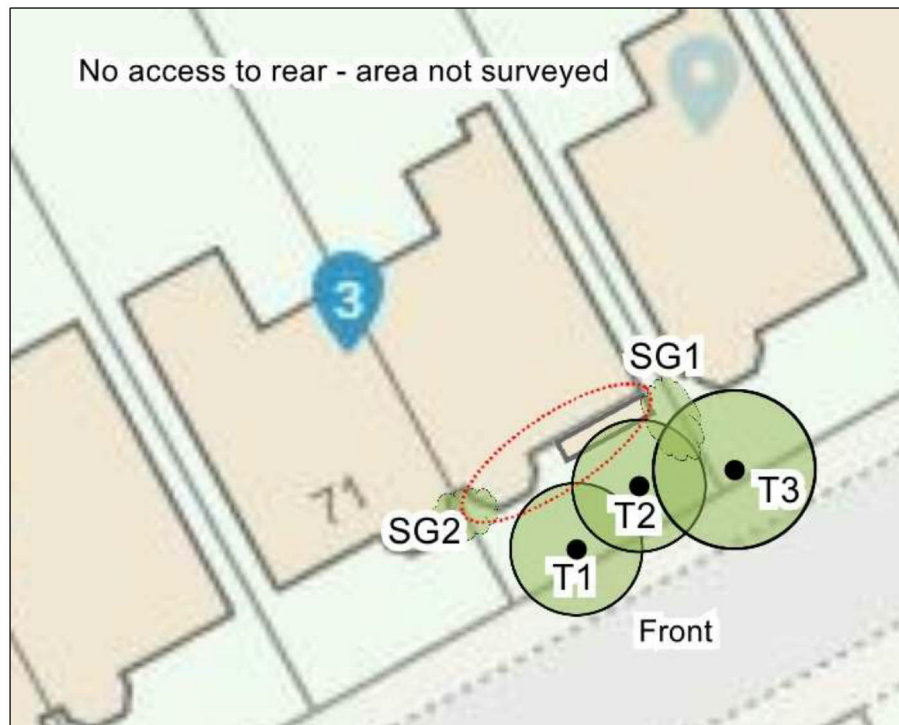
Table 1 **Current Claim - Tree Details & Recommendations**

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T1	Oak	8.0	150	7.0	4.3	Younger than Property	Policy Holder
Management history		No significant past management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
T2	False Acacia	8.0	160	5.5	3.8	Younger than Property	Policy Holder
Management history		No significant past management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
T3	Cypress with climbing shrub throughout	16.0	420 *	5.0	4.1	Younger than Property	Third Party: 75 Aberdare Gdns, NW6 3AN
Management history		No significant past management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
SG1	Privet	3.0	30 Ms *	2.5	1.4	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Reduce to ~2.0m height and prune annually to maintain at reduced size.					
SG2	Privet	3.5	30	2.5	0.8 *	Younger than Property	Policy Holder
Management history		No significant past management noted.					
Recommendation		Reduce to ~2.0m height and prune annually to maintain at reduced size.					

Ms: multi-stemmed * Estimated value



Site Plan



Plan not to scale – indicative only

 Approximate areas of damage

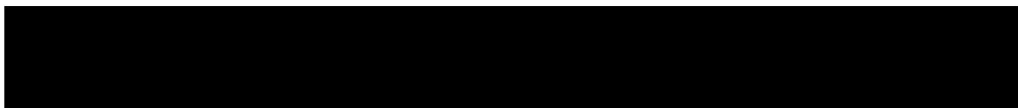
Images

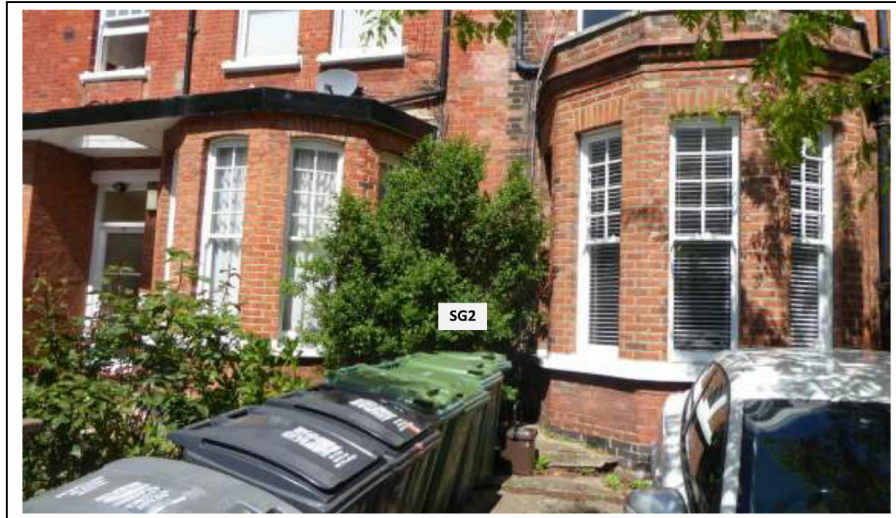


Overview of T1 Oak, T2 False Acacia and T3 Cypress



View of SG1 Privet





View of SG2 Privet

