

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

154 Morley Avenue
London
N22 6NT



CLIENT:	Crawford & Company
CLIENT REF:	SU2206135
MWA REF:	SUB221108-11165
MWA CONSULTANT:	Andy Clark
REPORT DATE:	19/05/2023

SUMMARY

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

Introduction

Acting on instructions from Crawford & Company, the insured property was visited on 03/02/2023 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 2 storey end-terrace house of traditional construction, extended with a single storey addition 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 extension where cracking indicates downward movement. Damage is reported to have first been observed during the summer of 2022. For a more detailed synopsis of the damage please refer to the building surveyor's technical report.

We have not been made aware of any previous claims.

Site Investigations

Site investigations were carried out by Auger on 13/01/2023, when a single trial pit was hand excavated to reveal the foundations, with a borehole sunk through the base of the trial pit to determine subsoil conditions. A drain survey was also carried out. Please refer to the Site Investigation report for further details.

Discussion

Opinion and recommendations in this report are made on the understanding that Crawford & Company have identified clay shrinkage subsidence as a cause of building movement and damage.

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 1.7m bgl in TP/BH1, and recovered samples have been positively identified (using anatomical analysis) as Cupressaceae spp.; the origins of which will be the Cypress of TG1 group which surround the property rear garden.

Irrespective of the identification of recovered root samples, the roots of the Apple and Elder elements of TG1 group as well as the Ivy group CG1 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.

If an arboricultural solution is to be implemented to mitigate the influence of the implicated trees/vegetation we recommend that TG1 group and CG1 Ivy growth is removed. Recommended tree works may however be subject to change upon receipt of additional information.

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

Technical Summary

- 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.

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

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
TG1	Cypress, apple, elder	9.0	280	5.5	1.6	Younger than Property	Policy Holder
Management history		No significant recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
CG1	Ivy	2.5	40 Ms *	6.0	1.4	Younger than Property	Joint Policy Holder & 23 Darwin Road N22 6NS
Management history		No significant recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					

Ms: multi-stemmed * Estimated value

Site Plan



Plan not to scale – indicative only



Approximate areas of damage

Images



View of CG1 Ivy group



View of rear boundary elements of TG1 group



View from right-hand flank of TG1 group, with CG1 Ivy to foreground



View from property frontage of TG1 group

Management of vegetation to alleviate clay shrinkage subsidence.

All vegetation requires water to survive which is accessed from the soil. Clay soils shrink when water abstracted by vegetation exceeds inputs from rainfall, which typically occurs during the summer months. When deciduous vegetation enters dormancy and loses its leaves and rainfall increases during the winter months, soil moisture increases and the clay swells. (Evergreen trees and shrubs use minimal/negligible amounts of soil water during the winter).

Buildings founded on clay are susceptible to movement as the clay shrinks and swells which can result in cracking or other damage.

Where damage does occur, pruning (reducing leaf area) can in some circumstances be effective in restoring stability however, removal of the influencing vegetation (trees, shrubs, climbers) causing the ground movement offers the most predictable and quickest solution in stabilising the clay and hence the building and for this reason is frequently initially recommended as the most appropriate solution.

Often this is unavoidable due to the size or number of influencing trees, shrubs etc and their proximity to the building. Very heavy pruning of some species to a level required to effectively control its water use can result in the trees decline and ultimately death and is one factor considered when making recommendations for remedial tree works. Pruning alone, whilst reducing soil moisture uptake is often an unpredictable management option in restoring building stability either in the short or long term.

In some circumstances however, where vegetation initially recommended for removal is subsequently pruned and monitoring indicates the building has stabilised, removal becomes unnecessary with decisions based on best evidence available at the time.