Addendum Arboricultural Report

Subsidence Damage Investigation at:

143 The Greenway
Ickenham
Uxbridge
UB10 8LT

CLIENT:	Crawford & Company
CLIENT REF:	SU2206150 / 1786071
MWA REF:	SUB221129-11483Rev01
MWA CONSULTANT:	Andy Clark
REPORT DATE:	26/07/2024

SUMMARY

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

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Introduction

This is an addendum to our initial report [dated 12/04/2023] to add details of site investigations carried out in April 2024 by SML group, as well as current level monitoring readings.

Acting on instructions from Crawford & Company, the insured property was visited on 20/01/2023 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 detached bungalow of traditional construction, extended with a conservatory 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-right sections of the building, with cracking first 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 SML Subsidence on 22/04/2024, 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.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP/BH1	Crushed concrete	610
TP/BH2	Crushed concrete	520

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	MADEGROUND: Brown slightly sandy, slightly gravelly clay to 700mm, becoming firm light to dark brown, slightly sandy, slightly gravelly CLAY below	35 – 41	Medium – High
TP/BH2	MADEGROUND: Brown slightly sandy, slightly gravelly clay to 700mm, becoming firm light to dark brown, slightly sandy, slightly gravelly CLAY below	23 – 42	Medium – High

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	1000	*Quercus spp.*	Present
TP/BH2	1000	*Pomoideae gp., Quercus spp. and Clematis spp.*	Present

Quercus spp. are oaks (both deciduous and evergreen)
Pomoideae gp. include apple, cotoneaster, hawthorn, pear, pyracantha, quince, rowan, snowy mespil and whitebeam
Clematis spp. are common flowering, garden climbers

Drains: No information available at the time of writing.

Monitoring: Level monitoring is in progress, commencing on 13/09/2023 and with four subsequent readings available at the time of writing demonstrating uplift of the rear of up to 18.0mm [stud 4] indicative of the recovery [swelling] of the shrinkable plastic clay soils as they rehydrate from a dehydrated shrunken state.

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 1.0m bgl in TP/BH1 and TP/BH2 and recovered samples have been positively identified (using anatomical analysis) as Quercus spp., Pomoideae gp. and Clematis spp., the most significant of which are the Quercus spp. roots confirming the influence of the Oak T1 on the soils below the property rear.

The Pomoideae gp. roots will likely emanate from the Cotoneaster of SG1 group, or possibly the closest elements of the TG1 group of Apple and Pear. The Clematis spp. roots will be from the Clematis [not recorded] growing up the main stem of T1 Oak. While the significantly larger T1 Oak remains an influence on the building however, these roots are not considered relevant.

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 is subject to significant crown reduction in order to reduce the trees moisture uptake.

Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended.

Recommended tree works may be subject to change upon receipt of additional information.

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	16.5	1600 *	20.0	14.0	Significantly older than property	Policy Holder
Management history		No significant past management noted.					
Recommendation		Reduce height to ~14.0m and crown radius to ~8.0m leaving balanced crown. Re-prune thereafter on a triennial cycle to maintain at broadly reduced dimensions.					

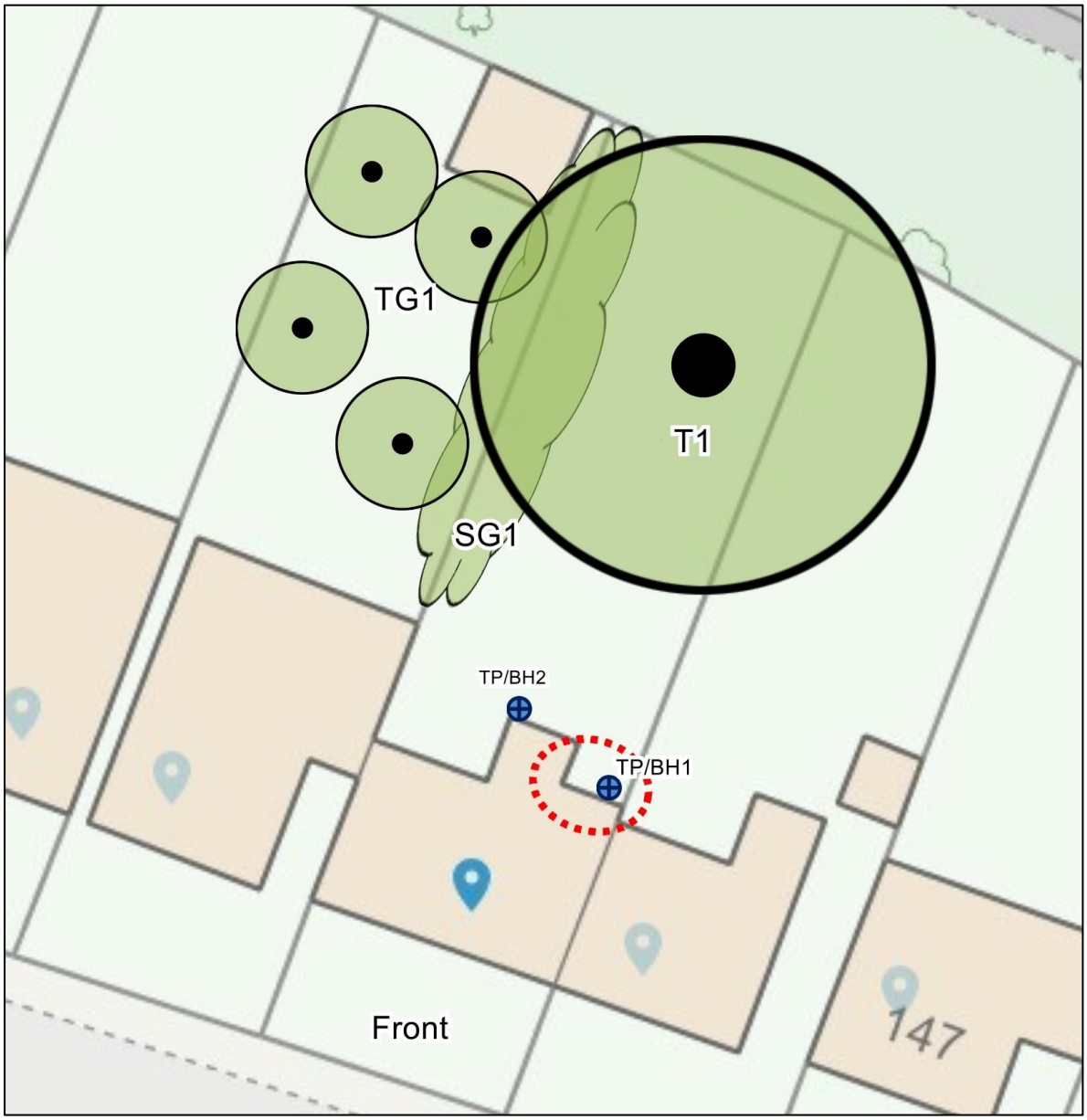
Ms: multi-stemmed * Estimated value

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

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
TG1	Pear and Apple group	8.0	300 Ms *	6.0	12.5 *	Older than extension	Third Party 141 The Greenway UB10 8LT
Management history		Subject to past management/pruning - previously crown reduced.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG1	Mixed spp. group of mostly Cotoneaster, Euonymus, Pyracantha, Holly, Japanese Maple, Mahonia, Cypress and Chinese Privet	7.5	220	5.0	4.8	Older than extension	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated value

Site Plan

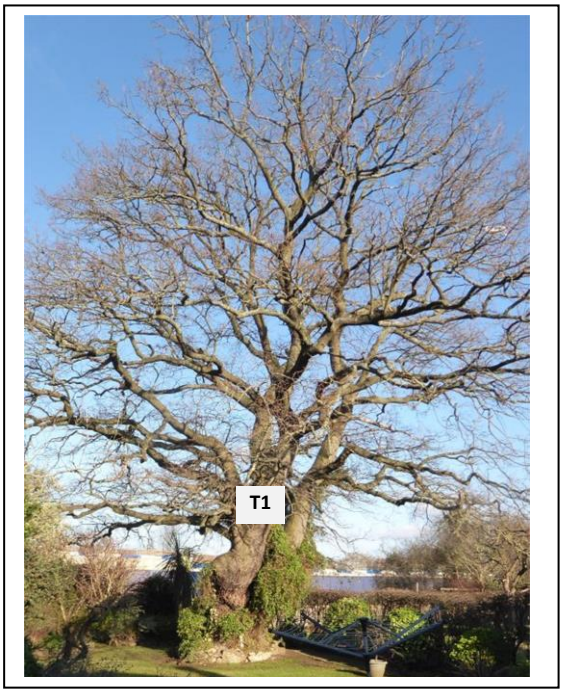


Plan not to scale – indicative only Approximate areas of damage

Tree/vegetation locations are based on what could be determined at the time of the survey.
It should be noted that this is not always clear due to lack of access or a restricted view of the trees/vegetation and may be disputed by property owners.
MWA can undertake land registry searches as required.

Images

View of T1 Oak, with SG1 group to left of frame



View of T1 Oak

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.