

Addendum Arboricultural Report

Subsidence Damage Investigation at:

61 Chalk Hill
West End
Southampton
SO18 3BY



CLIENT:	Claims Consortium Group
CLIENT REF:	607574
MWA REF:	SUB210929-9491Rev01
MWA CONSULTANT:	Mark Bisley (BSc Hons)
REPORT DATE:	18/10/2021
REVISION DATE: Rev 01	16/08/2022

SUMMARY

Statutory Controls		Mitigation (Current claim tree works)	
TPO current claim	Yes – TG2	Policy Holder	Yes
TPO future risk	Yes – T1, T2, TG1, TG3	Domestic 3 rd Party	No
Cons. Area	No	Local Authority	No
Trusts schemes	No	Other	No
Local Authority: -	Eastleigh Borough Council		

Introduction

This is an addendum to our initial appraisal report dated 18/01/2021 and has been produced following mitigation works and receipt of monitoring data. 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.

Acting on instructions from Claims Consortium Group, the insured property was visited on 14/10/2021 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 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 two storey, detached house built in the 1960s. There is a porch to the front and front right.

External areas comprise gardens to the front and rear. The site slopes down from the rear to the front.

Damage Description & History

The current damage affects the porches to the front and front right with internal and external cracking present. It was first noticed in August 2020.

At the time of the engineer's inspection (24/08/2020) the structural significance of the damage was found to fall within Category 3 (moderate) of Table 1 of BRE Digest 251.

For a more detailed synopsis of the damage please refer to the building surveyor's technical report.

Site Investigations

Site investigations were carried out by FASTRACK on 09/08/2021, 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)
TP1	Concrete	200 porch 650 house
TP2	Brick Concrete	700 porch 1000 house

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Sandy CLAY to 0.60m. Silty CLAY to 3.00m. Terminated at 3.00m.	16.8 – 34.0	Low – Medium
TP/BH2	Silty CLAY to 3.00m. Terminated at 3.00m.	36.0 – 49.0	Medium - High

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	None observed	-	-
TP/BH2	900	<i>Pomoideae gp.</i>	Present

Pomoideae gp. includes apple, pear, hawthorn, whitebeam, cotoneaster and pyracantha.

Drains: No information available at the time of writing.

Monitoring: Level monitoring is in progress.

Discussion

Opinion and recommendations are made on the understanding that Claims Consortium Group 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 the threshold of moisture depletion is being approached at the time of sampling in both TP/BH1 & TP/BH2 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 900mm bgl in TP/BH2 and recovered samples have been positively identified (using anatomical analysis) as *Pomoideae gp.*, the origin of which will be SG1, confirming its influence on the soils below the foundations.

In our initial report, based on the then available technical reports, engineering opinion and our own site assessment, we concluded that the damage was consistent with shrinkage of the clay subsoil related to moisture abstraction by vegetation. If an arboricultural solution were to be implemented to mitigate the influence of the implicated trees/vegetation we recommended that SG1 is removed. These works were completed on 14/02/2022.

In our initial report we noted that roots of TG2 may also be present below foundation level in proximity to the area of movement/damage and influencing soil moisture and volumes, but this had not been confirmed by root evidence. We did not consider TG2 to be implicated at that time but that would need to be assessed once SG1 has been removed.

Level monitoring for the period 10/09/2020 to 22/7/2022 has recorded a pattern of seasonal movement indicative of the action of vegetation. The most recent readings show a steep drop in levels with the greatest amplitude at the front of the dwelling (Pins 7 & 6) and on the right side (Pin 3). This has occurred despite removal of SG1.

There is little vegetation to the right of the dwelling but TG2 is within influencing distance of both the front and flank locations where most movement is being recorded.

Based upon the current monitoring data and the failure of previously completed mitigation works to fully address the movement, we now recommend removal of the section of TG2 within the subject

property. Sections of TG2 to either side should not be allowed to exceed current dimensions within 25m of the dwelling.

Recommended tree works may be subject to change upon receipt of additional information. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended.

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 remains significant vegetation present with the potential to influence soil moisture and volumes below foundation level.
- Mitigation works to date have not been sufficient to promote a return to stability to the dwelling.
- 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
TG2	Beech, Lime	20 *	480	14 *	15 *	Similar Age to Property	Joint 59 – 63 Chalk Hill SO18 3BY
Management history		No significant recent management noted.					
Recommendation		Original recommendation: No works required at present (subject to review if movement persists). Revised recommendation: Remove (fell) trees within curtilage of the subject property to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk). Do not allow remainder within 25m of dwelling to exceed current dimensions.					
SG1	Pyracantha, Cypress	5	25 Ms *	6	0	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk). Completed 14/02/2022					

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	Cypress	2	125 *	1 *	1 *	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Do not allow to exceed current dimensions.					
T2	Apple	6	145	6	5.5	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Do not allow to exceed current dimensions.					
TG1	Japanese Maple	5 *	225 *	5 *	4 *	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Do not allow to exceed current dimensions.					
TG3	Includes Cypress	4	120 Ms *	2 *	4	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Do not allow to exceed current dimensions.					
S1	Dogwood	4 *	180 *	4 *	1 garage	Younger than Property	Third Party 63 Chalk Hill SO18 3BY
Management history		No significant recent management noted.					
Recommendation		Do not allow to exceed current dimensions.					

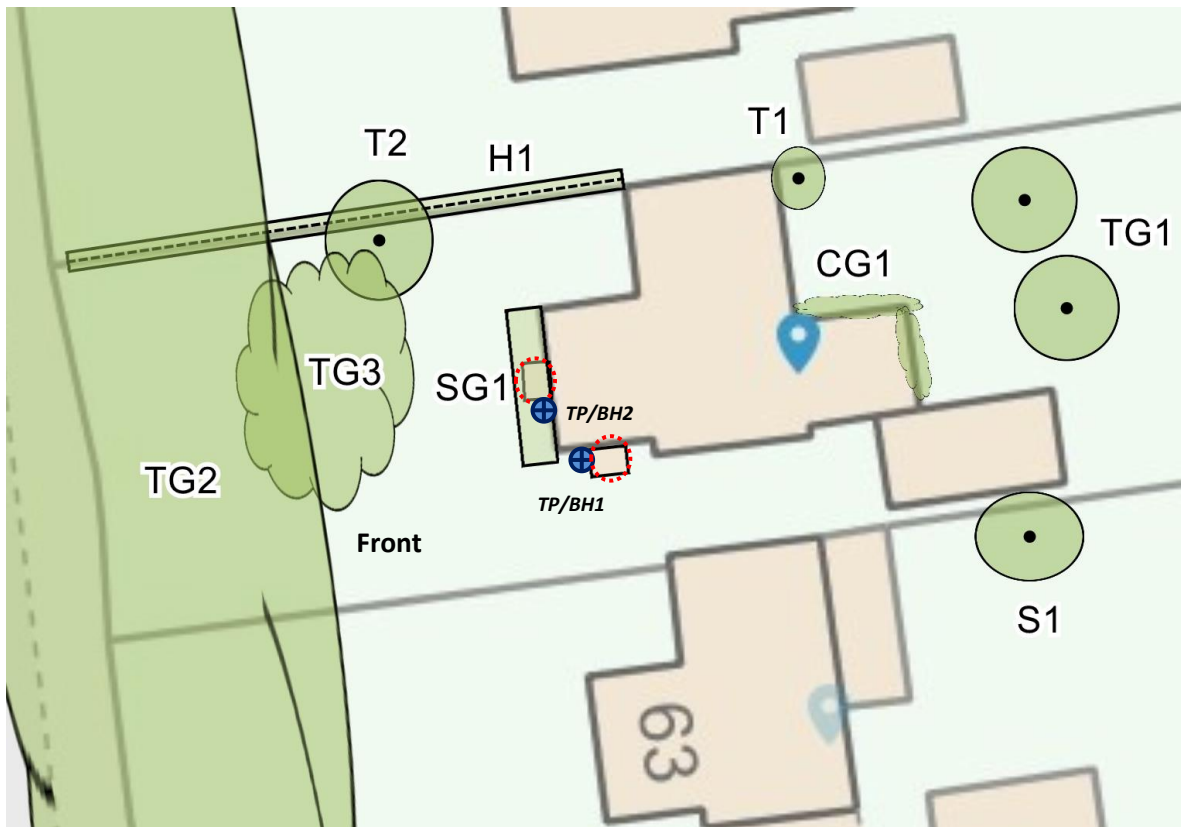
Ms: multi-stemmed * Estimated value

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
CG1	Parthenocissus, Rose	2	15 Ms *	4	0	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Do not allow to exceed current dimensions.					
H1	Cherry-laurel	1.5	30 Ms *	1	1	Younger than Property	Third Party 59 Chalk Hill SO18 3BY
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Do not allow to exceed current dimensions.					

Ms: multi-stemmed * Estimated value

Site Plan



Plan not to scale – indicative only

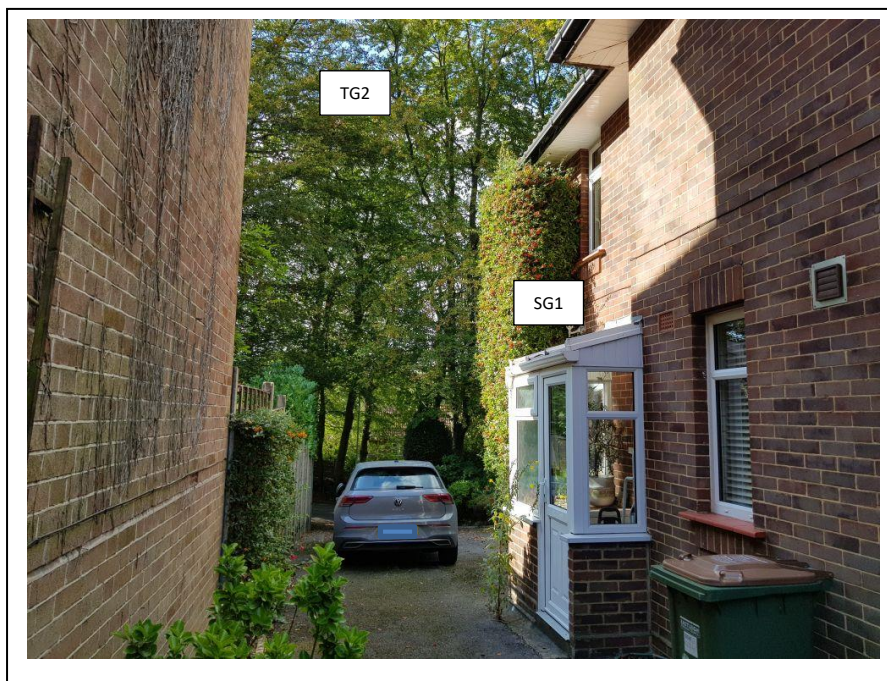


Approximate areas of damage

Images



View of front elevation of dwelling



View of right flank of dwelling from rear



View of vegetation to front left



View of vegetation to front left