

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

4 Densley Close
 Welwyn Garden City
 Herts
 AL8 7JX



CLIENT: Crawford & Company
 CLIENT REF: SU1900914
 MWA REF: SUB190724-5156
 MWA CONSULTANT: George Peters BSc. (Hons), M.Arbor.A
 REPORT DATE: 22/08/2019

SUMMARY

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

Introduction

Acting on instructions from Crawford & Company, the insured property was visited on 18/08/19 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 two storey detached house built in circa 1920. The property benefits from a detached garage off the right hand flank.

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 elevation, left flank wall, right flank wall, garage and driveway of the insured dwelling where cracking indicates downward movement. Cracking has been noted to the exterior brickwork and internally within the hallway, landing and bedroom. Damage was first noticed on 31 August 2018.

At the time of the engineers' inspection (01/03/2019) the structural significance of the damage was found to fall within Category 1 (very slight) of Table 1 of BRE Digest 251.

The insured originally submitted a claim in 2017 when internal cracks appeared at the rear of the property. A short period of monitoring was undertaken by insurers between Oct 2017 and February 2018 and as movement was not deemed progressive the claim was closed and not pursued. However, during the late summer of 2018 the internal cracks opened up and external cracks in brick works were noted, plus internal doors began to stick.

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Site Investigations

Site investigations were carried out by CET on 31/05/2019, when a single trial pit was excavated to reveal the foundations, with a borehole sunk through the base of the trial pit to determine subsoil conditions. A drains survey was also undertaken. Please refer to the Site Investigation report for further details.

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 100mm bgl in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as *Quercus* spp., the origin of which will be T2 (Oak) confirming its influence on the soils below the foundations.

Irrespective of the identification of recovered root samples and relative to the damage at the rear of the property, the roots of T1 (Oak) are likely to be present below foundation level in proximity to the area of movement/damage and influencing 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. Having considered the information currently available, it is our opinion that T1 and T2 are the principal cause of the current subsidence damage.

If an arboricultural solution is to be implemented to mitigate the influence of the implicated trees/vegetation we recommend that T1 and T2 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
T1	Oak	15 *	800	12	3.5	Younger than Property	Policy Holder
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).					
T2	Oak	12	700 *	12	7	Younger than Property	Policy Holder
Management history		No recent management noted. Spindle Shank at base. Tree is in decline. From a tree hazard perspective this tree represents an unacceptable level of risk.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					

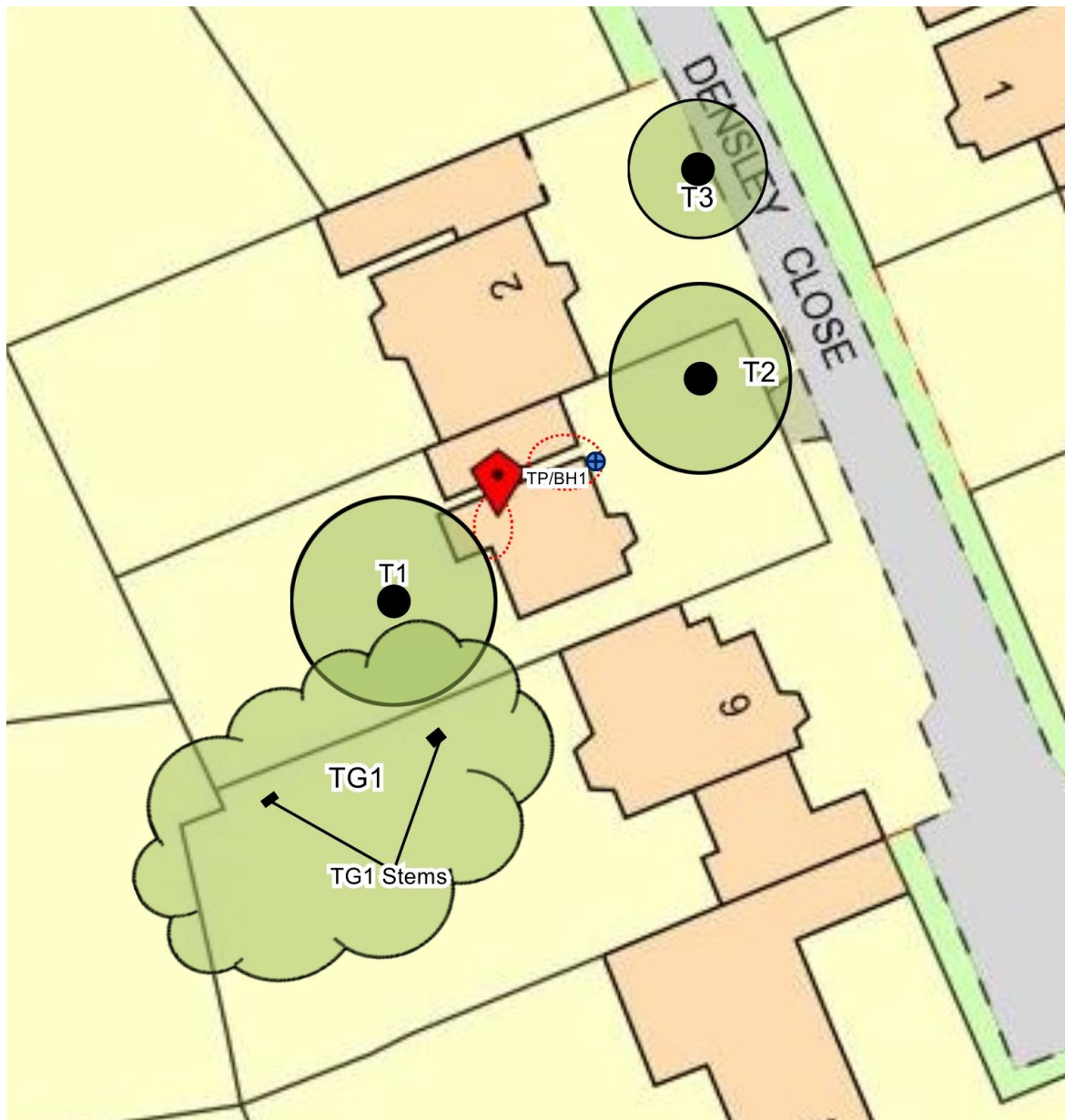
• Ms: multi-stemmed * Estimated value

Table 2 Future Risk - Tree Details & Recommendations


Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T3	Oak	15	700	8	14	Younger than Property	Third Party: 2 Densley Close, AL8 7JX
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
TG1	Oak	15	900 *	20	10	Younger than Property	Third Party: 6 Densley Close, AL8 7JX
Management history		No recent management noted.					
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 T1 Oak, current claim



View of T2 Oak, current claim.



View of Spindle Shank at base of T2.



View of TG2 Oak, future risk.