

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

The Old Church, Merley Park Road
 Ashington
 Wimborne
 BH21 3DF



CLIENT:	Crawford & Company
CLIENT REF:	SU2002228
MWA REF:	SUB201116-7876
MWA CONSULTANT:	Mark Bisley (BSc Hons)
REPORT DATE:	02/12/2020

SUMMARY

Statutory Controls		Mitigation (Current claim tree works)	
TPO current claim	Yes – T4, TG1	Policy Holder	No
TPO future risk	No	Domestic 3 rd Party	Yes
Cons. Area	No	Local Authority	Yes
Trusts schemes	No	Other	No
Local Authority: -	Bournemouth, Christchurch and Poole Council		

Introduction

Acting on instructions from Crawford & Company, the insured property was visited on 25/11/2020 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.

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 single storey, detached former church converted into a house c. 1999. There is a single storey rear projection and a garage on the right side.

External areas comprise gardens to the front and rear. The site slopes down gently from the front to the rear and a former railway cutting drops sharply just beyond the right boundary.

Damage Description & History

The engineer's report identifies the current damage as affecting the rear projection with internal and external cracking present, but the policy holder stated that the right side of the dwelling was also affected with doors on that side no longer shutting properly. It was first noticed in late 2019 but closed over the winter, opening again in 2020 and prompting the current claim.

At the time of the engineer's inspection (19/07/2020) 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 building surveyor's technical report.

Site Investigations

Site investigations were carried out by Auger on 16/10/2020, 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.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP/BH1	Brick with concrete underpin	1700

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Dry, very stiff, silty CLAY to 3.00m. Terminated at 3.00m.	32 – 40	Medium - High

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	1700	<i>Quercus spp.</i>	Present

Quercus spp. are oaks.

Drains: No information available at the time of writing.

Monitoring: No information available at the time of writing.

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. A comparison between moisture content and the plastic and liquid limits suggests moisture depletion at the time of sampling in TP/BH1 at depths beyond normal ambient soil drying processes such as evaporation indicative of the soil drying effects of vegetation.

A comparison of soil suction data with Table 1 of BRE Digest 412 suggests moderate (235kPa) to very severe (810kPa) desiccation in TP/BH1.

Roots were observed to a depth of 1700mm bgl in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as *Quercus spp.*, the origin of which will be T4 or TG1, confirming their influence on the soils below the foundations.

Irrespective of the identification of recovered root samples, the roots of T3 and G3 are also 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 T3, T4, TG1 and G3 the principal cause of or are materially contributing to the current subsidence damage.

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. We would also note that the property appears to have been underpinned in the past but damage has occurred despite the increased foundation depth.

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 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
T3	Ash	7	150 Ms *	6	5.5	Younger than Property	Third Party Ashington Nursery Merley Park Road BH21 3DF
Management history		No significant recent management noted.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					
T4	Oak	12 *	400 *	11	7	Older than extension(s)	Third Party Ashington Nursery Merley Park Road BH21 3DF
Management history		No significant recent management noted. Crown heavily one-sided to left.					
Recommendation		Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					
TG1	Oak	18 *	475 Ms *	10	6 projection 5 garage	Older than extension(s)	Local Authority
Management history		No significant recent management noted. Hung up branch in tree nearest T4.					
Recommendation		Remove (fell) trees within 10m of garage/dwelling to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					
G3	Pittosporum	7	70 *	3 *	4	Younger than Property	Third Party Ashington Nursery Merley Park Road BH21 3DF
Management history		Cut back to allow replacement of fence.					
Recommendation		Reduce height to 4m. Prune on an annual 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
T1	Willow	4	100 Ms *	3	4	Younger than Property	Policy Holder Assumed (No registrations)
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Do not allow to exceed current dimensions.					
C1	Wisteria	3	40 Ms *	2	0	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Do not allow to exceed current dimensions.					
G1	Bamboo	1.5	3 Ms *	12	3.5	Younger than Property	Policy Holder
Management history		No significant recent management noted.					
Recommendation		Do not allow to exceed current dimensions.					
G2	Cypress, Kerria, Buddleia	3	25	2	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	Cypress	6	450 *	5	5	Younger than Property	Third Party Nursery House Merley Park Road BH21 3DF
Management history		Recently reduced/pruned.					
Recommendation		Do not allow to exceed current dimensions.					

Ms: multi-stemmed

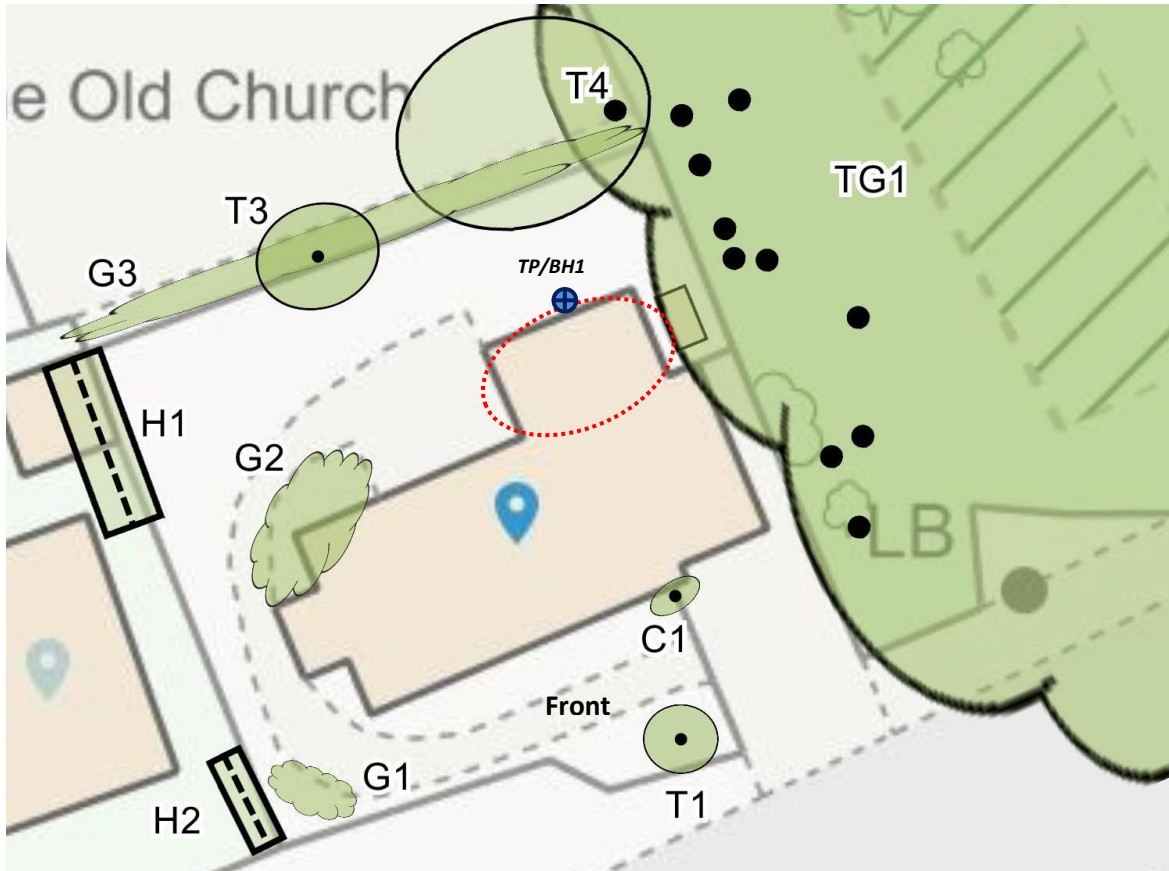
* Estimated value

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
H2	Western red cedar	4	200 *	2	3.5	Younger than Property	Third Party Nursery House Merley Park Road BH21 3DF
Management history		Recently reduced/pruned.					
Recommendation		Do not allow to exceed current dimensions.					

Ms: multi-stemmed * Estimated value

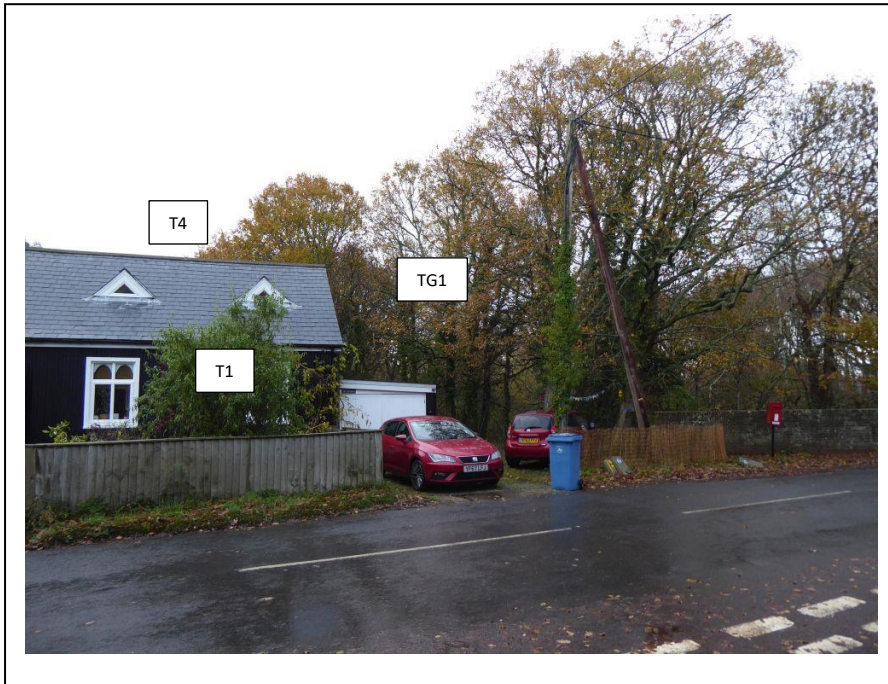
Site Plan



Plan not to scale – indicative only

 Approximate areas of damage

Images



View of front of property



View of trees to rear



View of trees to rear right



View of trees to rear right