

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

83 Yew Tree Cottages
 Midgley, Luddendenfoot
 Halifax
 West Yorkshire
 HX2 6UG



CLIENT:	Claims Consortium Group
CLIENT REF:	620917
MWA REF:	SUB210408-8758
MWA CONSULTANT:	John Graham B.Sc. Hons PhD
REPORT DATE:	21/04/2021

SUMMARY

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

Introduction

Acting on instructions from Claims Consortium Group, the insured property was visited on 20/04/2021 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 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 an end terrace 2 storey house. External areas comprise gardens to the front and rear. The site slopes downhill from rear to front.

Damage Description & History

The current damage affects the front right gable including the living room and was first noticed on 14/11/2020. For a more detailed synopsis of the damage please refer to the building surveyor's technical report.

At the time of the building surveyor's inspection the structural significance of the damage was found to fall within Category 3 (moderate) of Table 1 of BRE Digest 251. We have not been made aware of any previous claims.

Site Investigations

Site investigations were carried out by FASTRACK on 06/01/2021, when 2 trial pits were hand excavated to reveal the foundations, with a borehole sunk through the base of the trial pit to determine subsoil conditions. 2 remote boreholes were also sunk inside the property and at the rear. A drains survey was also undertaken.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP/BH1	N/A	680
BH2	N/A (internal)	N/A
TP/BH3	N/A	800
BH4	N/A (remote)	N/A

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Brown silty clay	21-40	Medium-high
BH2	Orange brown silty clay	32-41	Medium-high
TP/BH3	Grey silty clay	N/A	N/A
BH4	Grey silty clay	21-46	Medium-high

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	1500	<i>Prunus spp.</i> broadleaved species, too decayed for positive identification	Positive
BH2	No Roots Observed	-	-
TP/BH3	No Roots Observed	-	-
BH4	No Roots Observed	-	-

Prunus spp. include blackthorn, cherry, cherry-laurel, Portuguese laurel, peach, plum, and related species.

Drains: The drains have been surveyed and defects identified although leaking drains are concluded not to be a cause of the current damage.

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.

Roots were observed below foundation level in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as *Prunus*, the origin of which will be SG1 – laurel. Irrespective of the identification of recovered root samples, the roots of S1, H1 and T1 are also likely to be present below foundation level in proximity to the area of movement/damage and influencing soil moisture and volumes.

Level monitoring is at this stage inconclusive with both upward and downward movement recorded between January and February.

Based on the technical reports currently available, engineering opinion and our own site assessment we conclude the damage appears consistent with shrinkage of the clay subsoil related to moisture abstraction by vegetation. Having considered the information currently available, it is our opinion that the collective influence of the vegetation to the right of the house is the principal cause of the damage with a contribution from T1.

Recommended works are detailed in Tables 1 and 2 below.

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.

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	Sycamore	20	750 *	20 *	14	Similar Age to Property	Third Party 82 Yew Tree Cottages HX2 6UG
Management history		No significant recent management noted.					
Recommendation		Crown reduce by 2.0m (linear reduction) all round and prune on a triennial cycle to maintain broadly at reduced dimensions.					
S1	Photinia	2.5 *	20 Ms *	2 *	1 *	Younger than Property	Third Party 86 Towngate HX2 6UE
Management history		Subject to past management/pruning.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
SG1	Mixed species including laurel, sycamore, and holly	2 *	20 Ms *	1.5 *	0.5 *	Younger than Property	Third Party 86 Towngate HX2 6UE
Management history		Subject to past management/pruning.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
H1	Cypress	2.5 *	50 Ms *	1 *	1 *	Younger than Property	Third Party 86 Towngate HX2 6UE
Management history		Subject to past management/pruning.					
Recommendation		Remove (fell) all stems within 4.0m of the building. Maintain retained elements at no more than current dimensions.					

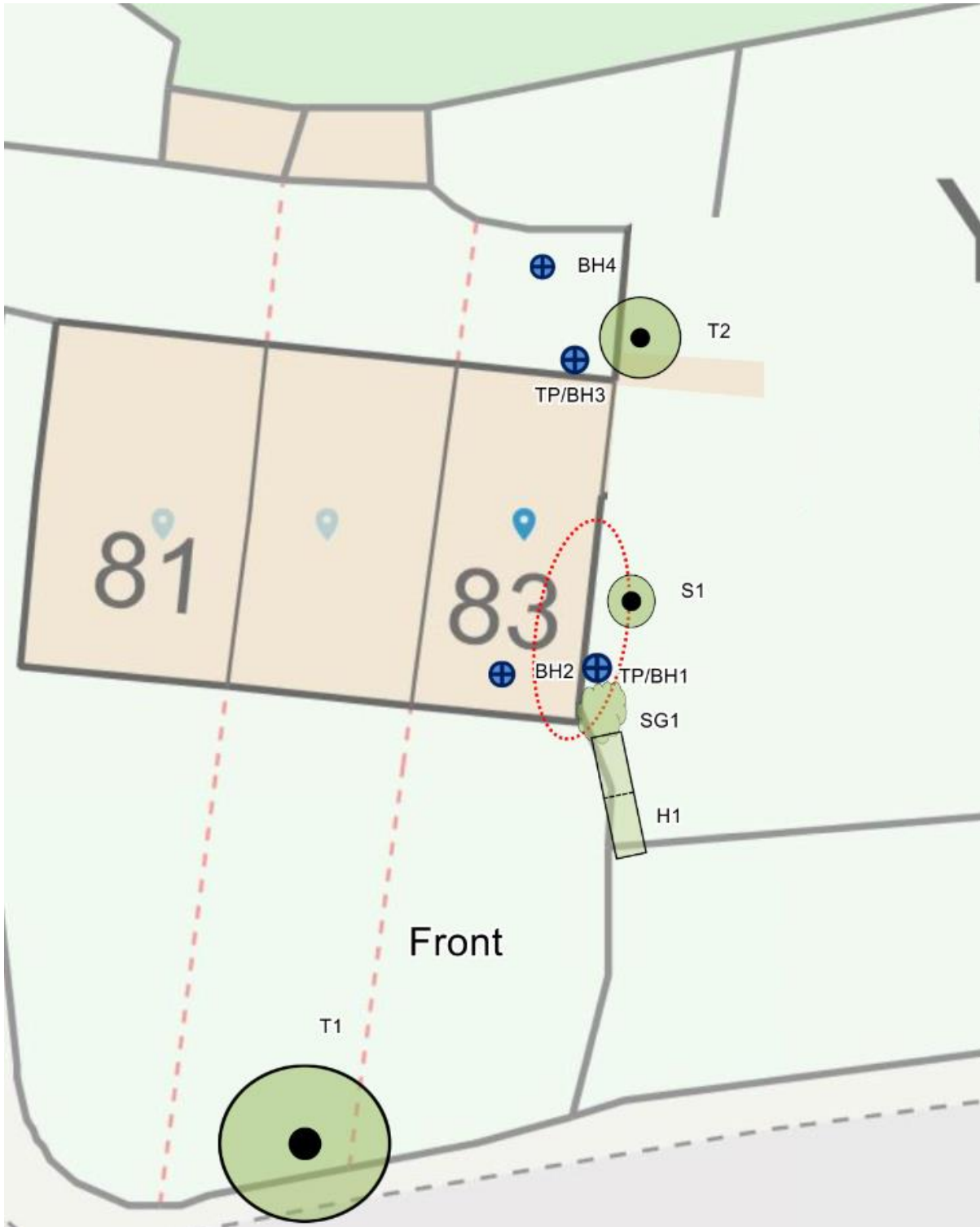
Ms: multi-stemmed * Estimated value

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


Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T2	Willow	3 *	100 Ms *	3	1.5	Younger than Property	Third Party 86 Towngate HX2 6UE
Management history		Recently reduced/pruned.					
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 T1



View of H1