Arboricultural Appraisal Report

Subsidence Damage Investigation at:

Eldon House, 201 Penistone Road
Kirkburton
Huddersfield
HD8 0PE

CLIENT:	Crawford & Company
CLIENT REF:	SU1900467
MWA REF:	SUB191031-6030
MWA CONSULTANT:	John Graham B.Sc. Hons PhD
REPORT DATE:	24/11/2019

SUMMARY

Statutory Controls			Mitigation (Current claim tree works)	
TPO current claim	Yes – T4		Policy Holder	Yes
TPO future risk	Yes – TG2 (Sycamore only)		Domestic 3rd Party	Yes
Cons. Area	Yes		Local Authority	No
Trusts schemes	No		Other	No
Local Authority: -	Kirklees Council			

MWA Arboriculture Ltd
Bloxham Mill Business Centre
Barford Rd, Bloxham
Banbury
OX15 4FF

Tel: 0191 432 9560
Email: office@mwaarboriculture.co.uk

Introduction

Acting on instructions from Crawford & Company, the insured property was visited on15/11/2019 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 2 storey office building, built circa 1800, with a 2 storey bay to the front right. External areas comprise car parking to the front and raised bed to the right. The site is generally level with no adverse topographical features, however the surrounding area slopes from left to right.

Damage Description & History

The current damage affects the front bay with internal and external cracks and was first noticed on 05/10/2018. 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 (13/02/2019) the structural significance of the damage was found to fall within Category 2 (slight) 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 06/06/2019, 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. 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. A comparison between moisture content and the plastic and liquid limits suggests moisture in TP/BH1 & 2 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 1,00mm bgl in TP/BH1 although recovered samples were too juvenile for a positive identification to be made.

Roots were observed to a depth of 1,500mm bgl in TP/BH2 and recovered samples have been positively identified (using anatomical analysis) as *Acer* (Maple), the origin of which will be T4 and/or TG1 (Sycamores) confirming their influence on the soils below the foundations. Irrespective of the identification of recovered root samples, the roots of T1, T2, T5 and Elms in TG1 may also 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, T2, T4, and TG1 are the principal cause of or are materially contributing to the current subsidence damage. Tree T5 may also be involved although there is no evidence of this.

If an arboricultural solution is to be implemented to mitigate the influence of the implicated trees/vegetation we recommend that T1, T2, T4, and TG1 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.

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	Hawthorn	5	120 Ms	3	2.5	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
T2	Willow (Goat)	7	300 Ms	5	8	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
T4	Sycamore	17 *	550 *	10	16	Younger than Property	Third Party Kirkburton Hall HD8 0PE
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).					
TG1	Mixed species group. Elm, Sycamore.	7 *	180 Ms *	5	9	Younger than Property	Third Party Kirkburton Hall HD8 0PE
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level - approximately 14 stems. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).					

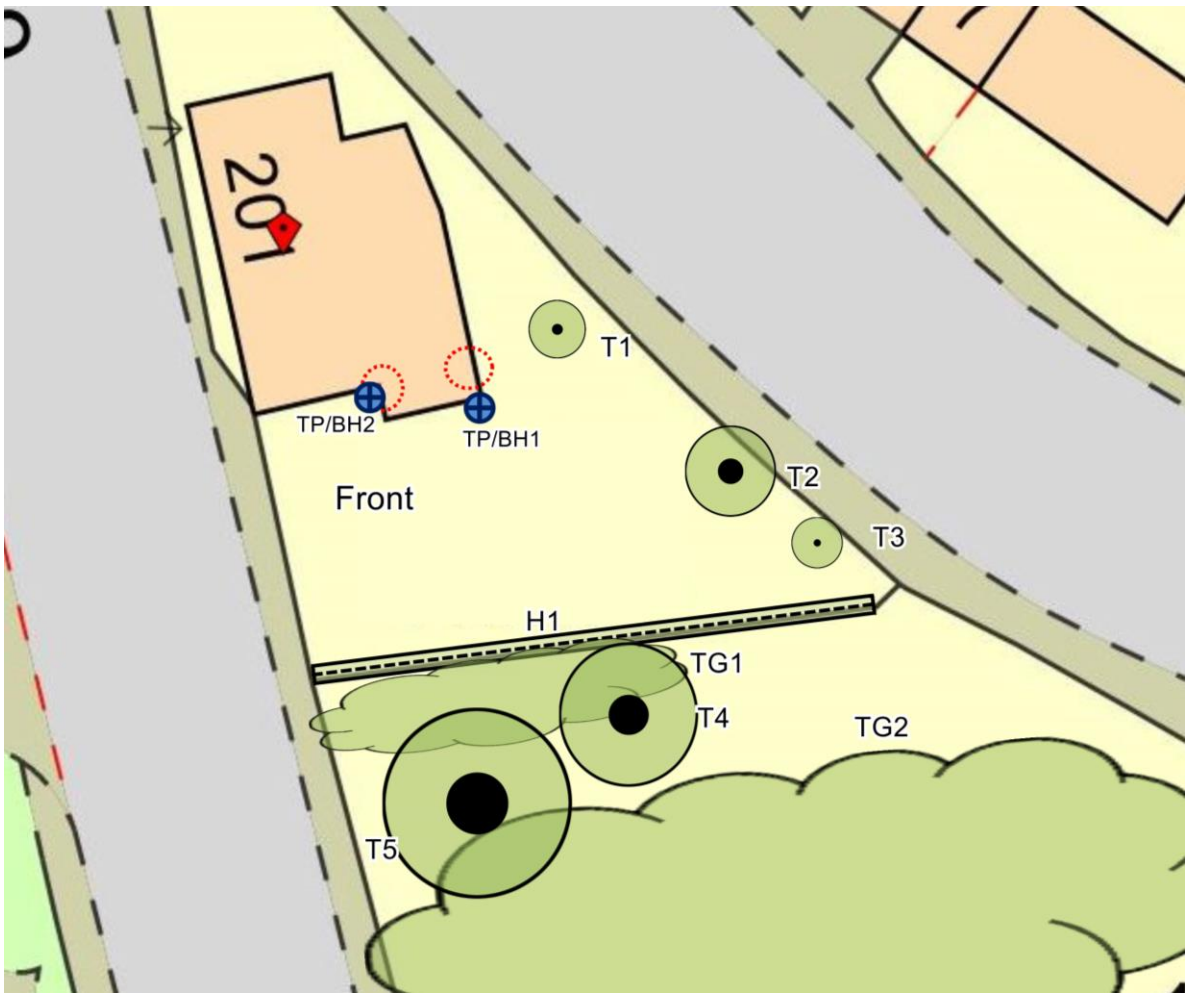
Ms: multi-stemmed * Estimated value

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	Hawthorn	5	160 Ms	3	10	Younger than Property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T5	Lime	24 *	750 *	18	18	Younger than Property	Third Party Kirkburton Hall HD8 0PE
Management history		No recent management noted.					
Recommendation		None at present					
TG2	Mixed species group Lime. Sycamore.	20 *	650 *	15 *	19	Younger than Property	Third Party Kirkburton Hall HD8 0PE
Management history		No recent management noted.					
Recommendation		No works at present.					
H1	Privet	1.8	10	1	8	Younger than Property	Policy Holder
Management history		Managed hedge.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated value

Site Plan

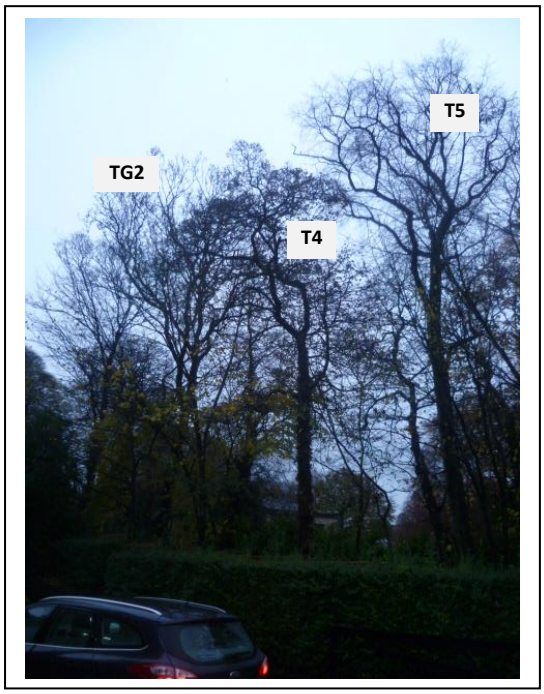


Plan not to scale – indicative only

Approximate areas of damage

Images

View of T1 and T2



View of T4, T5, TG2

View of H1

View of TG1