Arboricultural Appraisal Report

Subsidence Damage Investigation at:

2 Lambert Fold
Dodworth
Barnsley
S75 3SX



CLIENT:	B Maule & Co. Ltd
CLIENT REF:	20118795
POLICYHOLDER:	Mr and Mrs Jaques
MWA REF:	S161211.01DM
MWA CONSULTANT:	David Mahon (B.Sc (Hons) MIC.For M.Arbor.A)
REPORT DATE:	16th March 2012

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1.0 Introduction

Acting on instructions received from B Maule & Co. the insured property was visited on Mon 19 Dec 2011 for the purpose of assessing the potential role of vegetation in respect of clay-shrinkage 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.

Recommendations are given with reference to the technical reports and information currently available and may be subject to review upon receipt of additional site investigation data and engineering opinion.

The 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.

2.0 Property Description

The property comprises a detached two storey house built circa 1993/94. There are no extensions. Externally, there is a tarmac drive and small lawn to the front with additional garden areas to the right and rear. Significant vegetation includes a mature oak in the rear garden and Leyland cypress hedge to the right hand boundary.

The site slopes gently down hill from right to left.

3.0 Damage Description & History

We understand from the insured that the damage to the house was first noticed in May/June 2011. There is cracking around the sitting room bay window to the rear where the sills have dropped and the windows are being prevented from opening due to distortion. There is similar damage in the first floor rear right hand bedroom above.

There is also significant cracking in the brick garden wall to the right of the house.

4.0 Site Investigations

Site investigations were carried out on 27th January and 16 February 2012 with two trial pits being hand excavated to reveal the foundations, and boreholes being sunk through the base of the trial pits to determine subsoil conditions.

Foundations:

TP/BH1 - Concrete foundation 200mm thick bearing at 700mm below ground level (bgl).

TP/BH1a - Concrete foundation 400mm thick bearing at 1200mm below ground level (bgl).

Soils:

TP/BH1 - Firm to stiff sandy, gravelly CLAY to 900mm bgl, becoming rock. Plasticity index 14% = low shrinkage potential.

TP/BH1a - Firm to stiff slightly sandy CLAY to 1450mm bgl, becoming siltstone then sandstone from 1700mm bgl. Plasticity index 31.3% = medium shrinkage potential.

Roots:

TP/BH1 - Roots in trial pit. Recovered samples identified as *Hedera* or *Fatsia* spp.

TP/BH1a - Roots to 1600mm bgl. Recovered samples tentatively identified as possibly *Quercus* spp which is oak. Roots will originate from T1

Monitoring: Level monitoring is in progress and early readings from Oct 2011 to m17 February 2012 show uplift in the building.

5.0 Appraisal

Opinion and recommendations are made on the understanding that structural engineers 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 plastic clay subsoil to the rear of the house of medium shrinkage potential (NHBC Classification) susceptible to undergoing volumetric change in relation to changes in soil moisture. The clay layer is relatively thin which will tend to reduce the amplitudes of soil volume change and therefore building movement. However, this hasn't prevented movement resulting in damage to the house.

Based on a comparison between moisture content and the plastic limit there is no evidence of significant desiccation, which would be expected when soils are tested in February by which time summer soil deficits will have recovered.

Roots were observed to 1600mm bgl in BH1a, well below the foundation depth of 1200mm bgl and despite the tentative identification of oak roots, we are confident the roots will originate from T1. This confirms the potential for T1 to influence soil moisture and volumes below the foundations.

The oak is mature and predates the property by several decades. The tree has been subject to several pruning operations but no significant recent management was noted. Growth potential is low.

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 the oak T1. If an arboricultural solution is to be implemented to restore stability to the property, it is our opinion that T1 will need to be removed. Due to the size and proximity of the tree to the property pruning within appropriate limits does not unfortunately offer a viable alternative.

Heave

Engineers have assessed the risk of heave and found it to be within tolerable levels.

6.0 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.

There is significant vegetation present with the potential to influence soil moisture and volumes below foundation level resulting in the movement of the property.

Recommended works should be implemented as soon as possible with the effects being assessed by monitoring. If movement persists further opinion should be sought from ourselves.

Table 1 Tree Details - Current Claim

Tree No.	Species	Ht (m)	Dia (cm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T1	Oak	13.0	65	10.	6.0	Older than house	Insured
Recommendation		Remove					

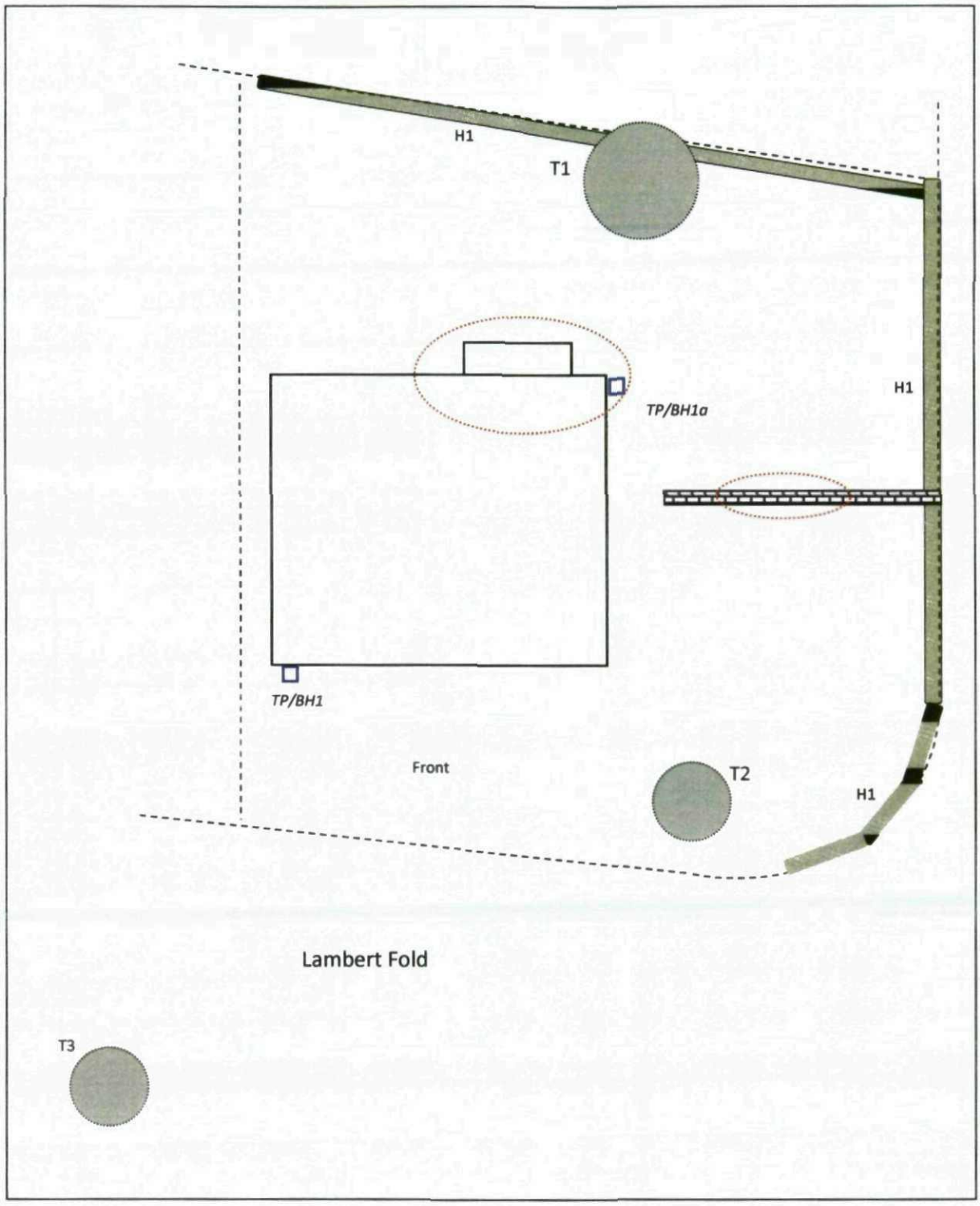
Ms: multi-stemmed * Denotes estimated value

Table 2 Tree Details - Future Risk

Tree No.	Species	Ht (m)	Dia (cm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T2	Rowan	3.0	8	3.0	7.0	Younger than house	Insured
Recommendation		Do not allow to exceed 5.0m in height					
T3	Oak	10.	81	12.0	15.0	Older than house	3rd party 1 Lambert Fold
Recommendation		No action					
H1	Leyland cypress	2.0	ms	0.5	0.2 wall	Younger than house	Insured
Recommendation		Do not allow to exceed current dimensions					

Ms: multi-stemmed * Denotes estimated value

7.0 Site Plan

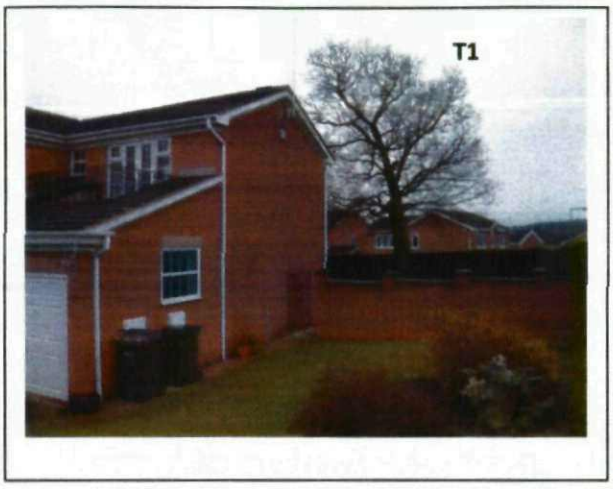


Plan not to scale – indicative only

Approximate areas of damage

Property:	2 Lambert Fold Dodworth Barnsley S75 3SX	Client Ref: Our Ref: MWA Tel:	20118795 S161211.01DM 0844 243 7899

8.0 Images



View along right hand flank with T1 to rear.



View towards rear right corner and T1.



9.0 Tree Works Estimate

Current claim tree works can be arranged with professional tree works contractors subject to quotation.

MWA Arboriculture maintains a vetted network of professional tree works contractors throughout the United Kingdom all of which are regularly audited to ensure compliance with our service standards.

10.0 Statutory Protection

The oak tree T1 is covered by Tree Preservation Order (TPO 2/1997) and the councils consent will therefore be require before any tree works can be undertaken.