

# Arboricultural Appraisal Report

## Subsidence Damage Investigation at:

402 Old Road  
Clacton-on-Sea  
Essex  
CO15 3SB



CLIENT:	B Maule & Co Ltd
CLIENT REF:	W4588/TJD/AWN
MWA REF:	SUB210805-9329
MWA CONSULTANT:	Andy Clark
REPORT DATE:	25/08/2021

## SUMMARY

Statutory Controls		Mitigation (Current claim tree works)	
TPO current claim	No	Policy Holder	Yes
TPO future risk	No	Domestic 3 <sup>rd</sup> Party	Yes
Cons. Area	No	Local Authority	No
Trusts schemes	No	Other	No
Local Authority: -	Tendring District Council		



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## Introduction

Acting on instructions from B Maule & Co Ltd, the insured property was visited on 17/08/2021 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 a 2 storey detached house of part timber framed/part traditional construction, originally built C.1750 and since extensively extended and modified with various single and two storey additions.

External areas comprise gardens to the front and rear.

The site is generally level with no adverse topographical features.

## Damage Description & History

Damage is recorded throughout the property to varying degrees, seemingly increasing in severity and magnitude towards the left-hand side of the building.

At the time of the engineer's inspection the structural significance of the damage was found to fall within Category 3 (Moderate) of Table 1 of BRE Digest 251. For a more detailed synopsis of the damage please refer to the surveyor's technical report.

We have not been made aware of any previous claims.

## Site Investigations

Site investigations were carried out by Auger on 07/07/2021, 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.

### Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP1	Concrete	250

### Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP1	Dry very stiff brown sandy fine to medium gravelly silty CLAY	37 – 42	Medium – High

### Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP1	1750	Quercus spp.	Present

*Quercus spp. are Oaks, both deciduous and evergreen*

**Drains:** The drains have been surveyed and no significant defects identified.

**Monitoring:** No information available at the time of writing.

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## Discussion

Opinion and recommendations are made on the understanding that B Maule & Co Ltd 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 1.75m bgl in TP/BH1, and recovered samples have been positively identified (using anatomical analysis) as *Quercus* spp.; the origins of which will be T1 Oak, confirming its influence on the soils below the foundations.

Irrespective of the identification of recovered root samples, the roots of the T2 Bay and the nearby shrub and Ivy growth of SG2 are also likely to be present below foundation level in proximity to the area of movement/damage and influencing soil moisture and volumes. T6 Sycamore may also pose a degree of influence; however this is not clear or quantifiable while the higher moisture demanding larger T1 Oak remains in situ.

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 Oak is the principal cause of the current subsidence damage with a localised contributory influence from T2 Bay and the nearby shrub and Ivy growth of SG2.

If an arboricultural solution is to be implemented to mitigate the influence of the implicated trees/vegetation we recommend that T1 Oak, T2 Bay and the nearby shrub and Ivy growth of SG2 are removed in the first instance. If movement persists, attention will need to turn to T6 Sycamore. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended. Recommended tree works may however be subject to change upon receipt of additional information.

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.

## 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	18.5	800 *	13.5	5.8	Similar Age to Property	Third Party 404 Old Road CO15 3SB
Management history		No significant past management noted.					
Recommendation		Remove (fell) to near ground level and treat stumps to inhibit regrowth.					
T2	Bay	7.0	110 Ms *	4.5	5.7	Younger than Property	Joint Boundary Policy Holder & 404 Old Road CO15 3SB
Management history		No significant recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stumps to inhibit regrowth.					
SG2	Mixed spp. shrub group of mostly Fuchsia and Ivy [limited visibility]	2.5	30 Ms *	4.0 *	0.2	Younger than Property	Third Party 404 Old Road CO15 3SB
Management history		No significant past management noted.					
Recommendation		Remove (fell) any ivy growing against building and within 2.0m to near ground level and treat stumps to inhibit regrowth.					

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	Sycamore	15.0	500 *	12.0	18.3	Younger than Property	Third Party 5 Windmill Court CO15 3SD
Management history		No significant past management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T4	Ash	16.5	400 *	11	13.4	Younger than Property	Third Party 406 Old Road CO15 3SB
Management history		No significant past management noted. Significant dieback in upper crown – Chalara Ash Dieback Disease [Notifiable under PHC legislation].					
Recommendation		Owner to deal with CADB disease and take appropriate steps which may be removal.					
T5	Sycamore	14.0	400 Ms *	12.0	15.9	Younger than Property	Third Party 406 Old Road CO15 3SB
Management history		No significant past management noted.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
T6	Sycamore	15.0	700 *	12.0	4.5	Younger than Property	Policy Holder
Management history		No significant past management noted.					
Recommendation		No works required at present (subject to review if movement persists).					
T7	Oak	14.0	700 *	12.0	18.4	Younger than Property	Third Party 365-371 Old Road CO15 3RJ
Management history		No significant past management noted.					
Recommendation		No works required at present (subject to review if movement persists).					

Ms: multi-stemmed

\* Estimated value

**Table 2 Future Risk - Tree Details & Recommendations (contd.)**

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
TG1	Mixed spp. group of mostly contorted Hazel, Liquidambar, Cabbage Palm, Beech, Aucuba, Rose and Philadelphus	4.0	110 *	3.0	5.4	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
SG1	Mixed spp. group of mostly Hibiscus, Yew, Hebe, ornamental Elder and Aucuba	3.0	50 Ms *	2.5	3.5	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
H1	Privet hedge	1.5	30 Ms *	1.0	1.8	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					
H2	Mixed spp. hedgerow group of mostly Ivy and Escallonia	2.0	50 Ms *	1.0	0.4	Younger than Property	Third Party 404 Old Road CO15 3SB
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		No works required at present (subject to review if movement persists).					


Ms: multi-stemmed \* Estimated value



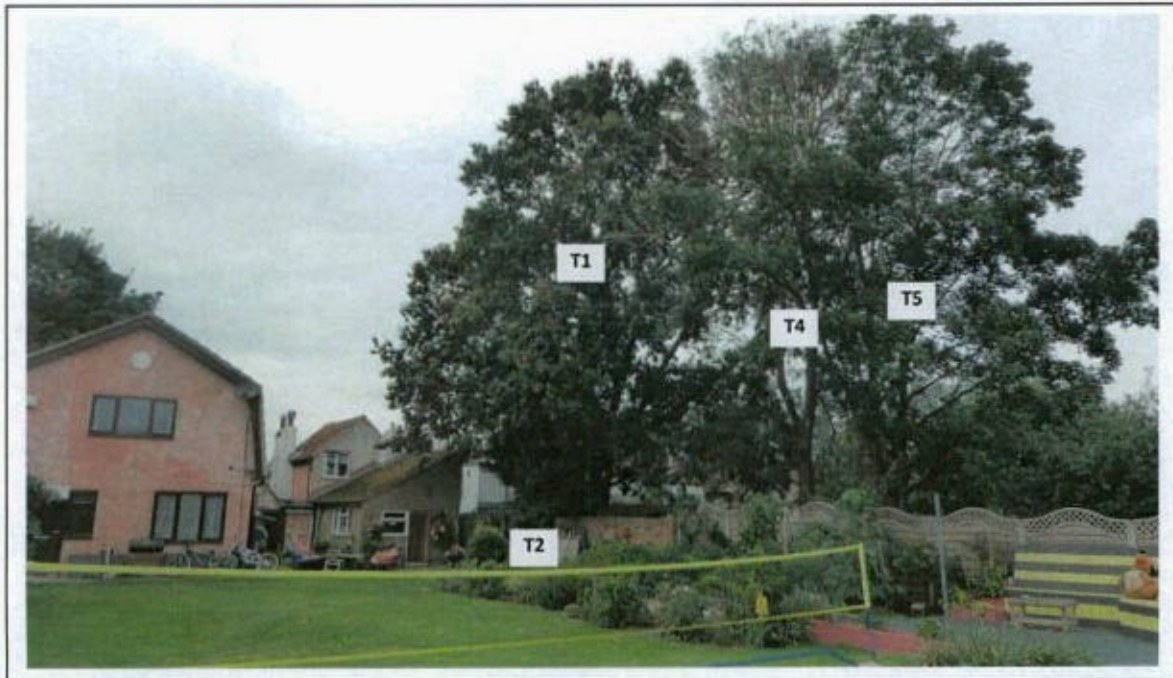
Site Plan



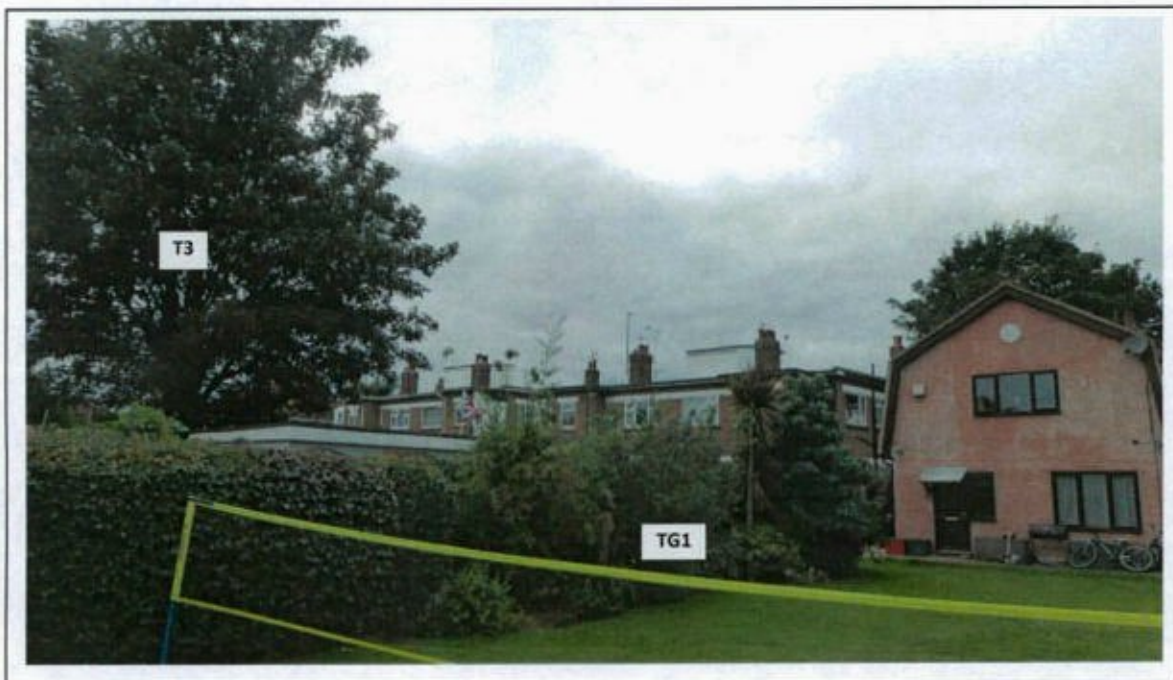
Plan not to scale – indicative only

 Approximate areas of damage

Images



View of T1 Oak, T2 Bay, T4 Ash and T5 Sycamore



View of T3 Sycamore and TG1 group



View of SG2 group adjacent to left hand flank



View of T6 Sycamore