

Subsidence Tree Report

For B Maule & Co Ltd

Property:

4 Downshire Hill, London, NW3 1NR

Insured:	Mrs. Z Hersov
Insurer:	TBC
Insurer Ref:	TBC
Maule & Co Ref:	20195429
Our Reference:	03229Rv2
Consultant:	Keiron Hart (BSc Hons, C.Env, F.Arbor.A, MICFor, MEWI)
Visit Date:	14.1.2020
Report Date:	20.1.2020

Scope of Report

To assess trees within potential influencing distances. Identify their current & future potential to cause or contribute to damage to the property by way of direct or indirect damage.

Note

This report is based on the assumption engineers are satisfied that any damage is attributable to vegetation related subsidence. It is intended for use between the client, Tamla Trees Ltd and any parties detailed within the report.

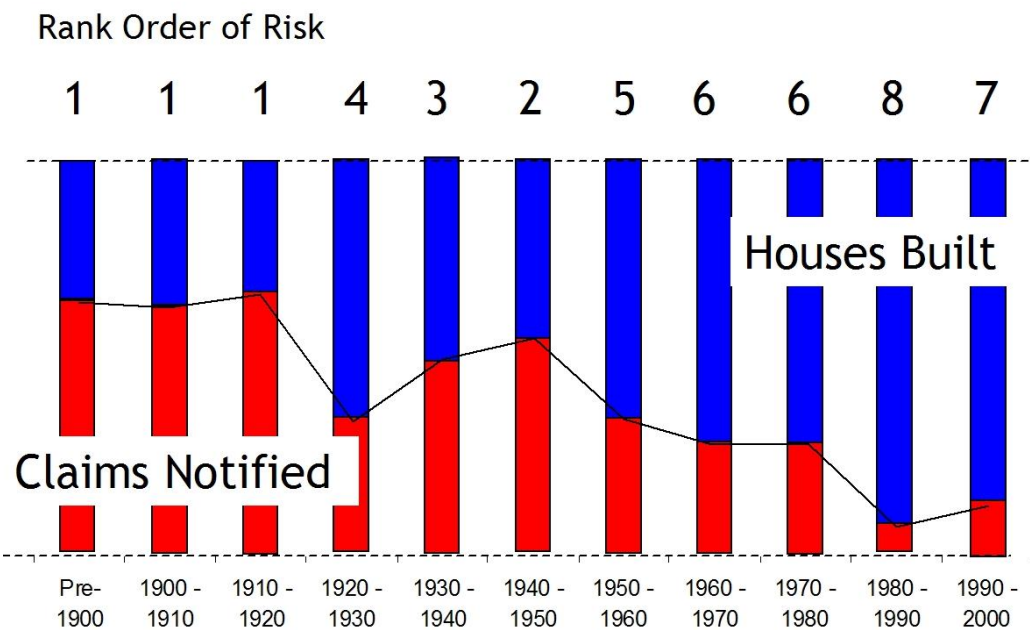
1. Property Description

The property is a four storey 1820's semidetached bay fronted property. It has been rendered. We are advised the building is a solid brick construction with a pitched tiles roof. It benefits from a 2-storey side extension.

Damage is advised as affecting the garage and rooms above and adjoining with damage both internally and externally to the property.

The site slopes gently upwards front to rear with slight step changes in levels.


The report is based on the assumption engineers are satisfied that movement is being caused by vegetation related drying of a clay sub soil.



**Fig 1 – A properties age can influence the risk of subsidence damage. The property is advised to date from in the 1820's
(Source: Clay Research Group)**

2. Underlying Soil

For vegetation related subsidence damage to occur an underlying clay soil is required. An assessment of the British Geological Soil open source data for the property has identified the following:

	Soil Description
	<p>London Clay Formation</p> <p>Clay And Silt. Sedimentary Bedrock formed approximately 48 to 56 million years ago in the Palaeogene Period. Local environment previously dominated by deep seas.</p>

3. Site Investigations

The following [site investigations](#) were available for the formation of our report.

Crack or Level Monitoring
Soil testing
~~Engineers Report~~

Trial Pit & Borehole Logs
Root Identification
~~Drain Report~~

4. Tree Ownership & Protected Status

Ownership	
Are trees all located within grounds of property	No
Are 3 rd Party trees a current or future risk factor?	Yes
Protected Status	
Is the property within a Conservation Area	NA
Is the property affected by a Tree Preservation Order	NA

Conservation Area Status	
Is the site located within a Conservation Area	NA
Notes: (i) All trees larger than 7.5cm diameter at 1.5m above ground level are subject to regulations within a Conservation Area. Exemptions apply for trees which are dead and dangerous but clarification before any tree works is advised. A notification is required in many circumstances.	
Tree Preservation Order Status	
Are inspected trees subject to a TPO?	NA
Type of TPO	Area
	Individual
	Group
	Woodland
TPO Reference	-
Date TPO Made	-
Notes: (i) The type and details of any TPO determine which trees are 'protected'. Exemptions apply for trees which are dead and dangerous but clarification before any tree works is advised. An application may be required before undertaking works. (ii) At the time of writing London Borough of Camden have not yet responded to our statutory search.	

5. Report Detail

London Clay Formation - Clay And Silt. Sedimentary Bedrock formed approximately 48 to 56 million years ago in the Palaeogene Period. Local environment previously dominated by deep seas.

Subsidence from vegetation and trees occurs when the vegetation dries the underlying soil and if this contains clay it can shrink in size and the building subsides. The soil then rehydrates during the wet winter months giving classic cyclical movement profiles.

Site investigations completed in June 2019 excavated Trial Pit TP1 on the front left corner and TP2 towards the rear left hand side.

These excavations revealed an underside of foundation depth of 500mm (TP1) and 560mm (TP2) which is generally below the depth to which natural climatic factors could account for soil drying and cyclical movement but they would be considered shallow on a London Clay soil.

Through the base of TP1 & TP2 a borehole was hand augured to 3m. Roots were observed to 1.6m depth in both TP1 & TP2

Soil testing confirmed the underlying soil to be clay ranging from high to very high plasticity.

Driscolls formula is applicable to the samples given the high to very high plasticity. Driscolls formula details that a soil can be described as significantly desiccated where the moisture content is <40% of the liquid limit, and in a state of desiccation <50%. The results relative to these figures are tabulated below.

Ref	Date	Depth	MC as % of LL	Desiccation
TP1	June 2019	0.55m	15%	Significant
TP1	June 2019	1.25m	39%	Significant
TP1	June 2019	2m	45%	Yes
TP1	June 2019	3m	55%	No
TP2	June 2019	0.6m	35%	Significant
TP2	June 2019	1.25m	39%	Significant
TP2	June 2019	2m	44%	Yes
TP2	June 2019	3m	43%	Yes

Table 1 – Driscolls formula and confirming that evidence of desiccation existed in June 2019 in all tested samples with the exception of TP1 @ 3m depth

The soil testing confirms the likely role of vegetation on drying underlying soil.

Root identification is inconclusive as in both TP1 and TP2 the main recovered roots emanate from climbers located close to the excavations. These roots are therefore as a result of the proximity of the plants to the excavations rather than their dominant role in the subsidence movement.

Level monitoring shows the point of greatest movement to be towards the front left-hand corner and this suggests T5 (Lime) (note: this tree could be an *Acer* spp as there was no close access to inspect) and

T6 (Cypress) will be the dominant causes in the movement. It is also possible that TG1 (Magnolia & Sweet Bay) and T7 (Cypress) are also causal in the movement given their size relative to the affected part of the building.

Whilst no roots from these trees were recovered their size and proximity is such that they should be removed. This approach gives the best opportunity for stability to return. In summary they are just too large and close for pruning to afford a suitable option.

It seems likely given the 3rd party ownership of T5, T6 & T7 that additional site investigations may be required in an effort to secure the roots needed to show causation from the relevant trees. T5 appears a Purple Leaf Plum (*Prunus* spp) but access would be required (or an in leaf inspection) to confirm.

The council have not yet advised if there is a TPO or Conservation Area affecting the property. It seems possible the property will be located within a designated Conservation Area.

Full management recommendations are contained at section 6.

Please note if the intention is to complete tree work between the 1st March & the 31st July (inclusive) a due diligence check for nesting birds must be completed before work starts in order to comply with the Wildlife & Countryside Act 1981. This check should be recorded in the Site-Specific Risk Assessment. If active nests are found work should not take place until the young have fledged. Further information is available [here](#):

All tree works should be carried out by qualified, trained and fully insured operators in accordance with BS 3998 (2010): 'Recommendations for Tree Works'. If required tree surgeons can be sourced [here](#).

Is vegetation management likely to contribute to the future stability of the property	Yes
Is there a risk of heave if trees are removed?	No*

****on the basis that the extension seems to be of significant age but to be confirmed by engineer.***

6. Recommendations

6.1 Immediate Action

Tree No.	Species	Age Cat	Approx. Height (m)*	Distance to Building (m)	Ownership	Observations	Subsidence Risk Action	Recommended Tree Work
T5	Purple Leaf Plum	A	14	4.5	Unknown	Established 3rd party tree	Current Claim	Remove and treat stump to inhibit regrowth
T6	Cypress	A	20	9	Unknown	Large 3rd party tree.	Current Claim	Remove
T7	Cypress	A	16	7.1	Unknown	Large 3rd party tree.	Current Claim	Remove
TG1	Magnolia and Sweet Bay	A	6	2.7	No 4	Established trees	Current Claim	Remove and treat stumps to inhibit regrowth

Tree Age Category: A = Younger than property; B = Similar age to the property; C = Significantly older than property

Note: A review of management recommendations to include further works may be required if stability does not return

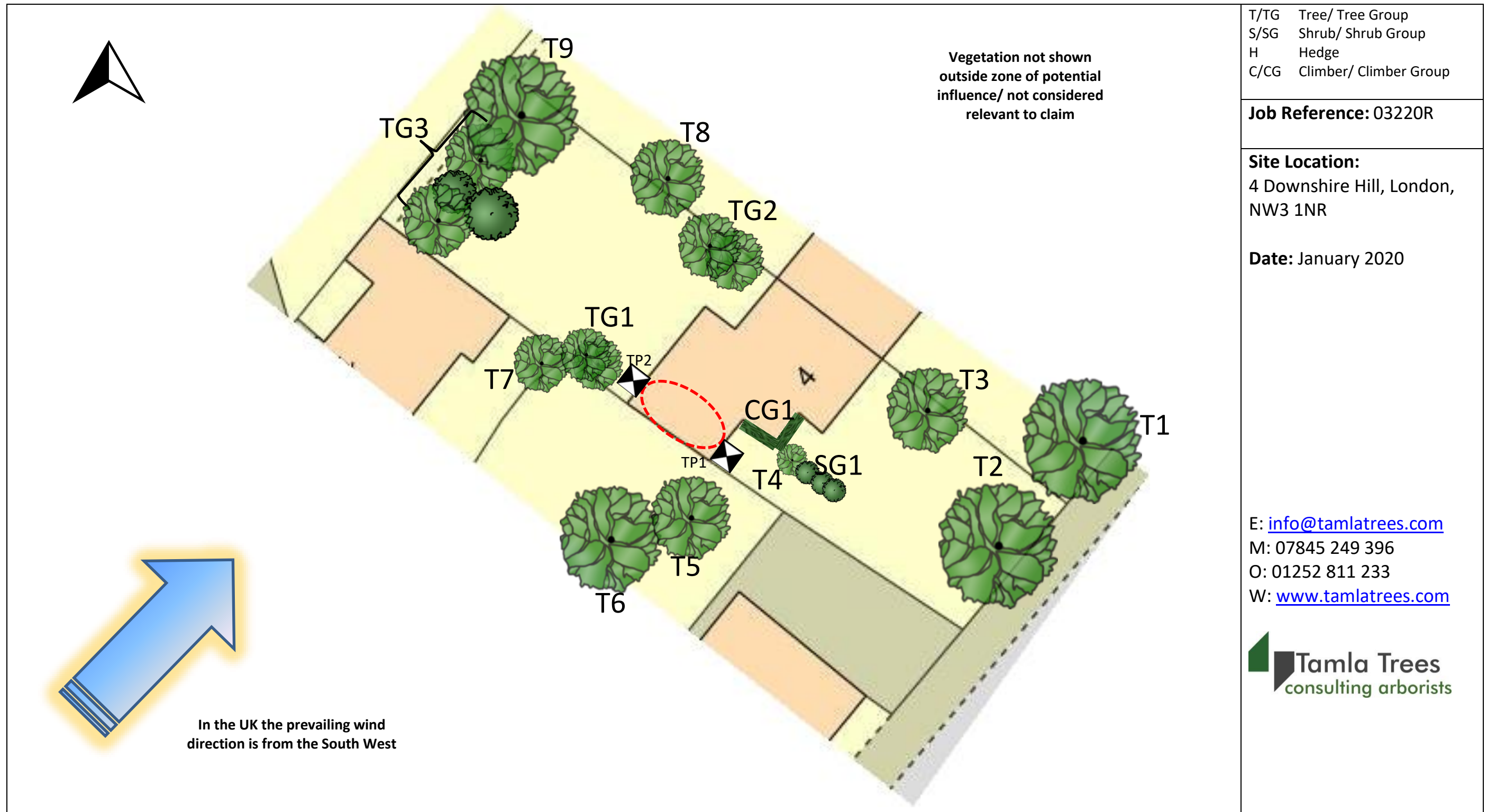
6.2 Future Risk Tree Works

* Estimated

Tree No.	Species	Age Cat	Approx. Height (m)*	Distance to Building (m)*	Ownership	Observations	Subsidence Risk Action	Recommended Tree Work
T1	Lime	A	20	11.5	No 5	3rd party tree.	Action to Avoid Future Risk	Do not allow to exceed current dimensions
T2	Ash	A	17	15.6	No 4	Established tree.	Action to Avoid Future Risk	Do not allow to exceed current dimensions
T3	Pittosporum	A	13	5.4	No 4	Established tree/ shrub	Action to Avoid Future Risk	Do not allow to exceed current dimensions
T4	Privet	A	3.8	1.6	No 4	Small ornamental.	Action to Avoid Future Risk	No works
T8	Beech	A	19	11.3	No 5	Established 3rd party tree.	Action to Avoid Future Risk	Do not allow to exceed current dimensions
T9	Acer	A	21	19.5	No 4	Established tree with no access to inspect.	Action to Avoid Future Risk	No works
Tree Age Category: A = Younger than property; B = Similar age to the property; C = Significantly older than property								

Tree No.	Species	Age Cat	Approx. Height (m)*	Distance to Building (m)*	Ownership	Observations	Subsidence Risk Action	Recommended Tree Work
TG2	Pittosporum and Bay	A	8	4	No 4	Established trees.	Action to Avoid Future Risk	Do not allow to exceed current dimensions
TG3	Elder, Sumac, Cypress	A	6	11.7	No 4	Mixed species planting.	Action to Avoid Future Risk	No works
CG1	Ivy & Russian Vine	A	6	0	No 4	Established climber.	Action to Avoid Future Risk	No works
SG1	Holly	A	2.2	2.9	No 4	Small shrubs	Action to Avoid Future Risk	Do not allow to exceed current dimensions
Tree Age Category: A = Younger than property; B = Similar age to the property; C = Significantly older than property								

7. Site Plan



8. Photographs



The property with SG1, T3 & CG1 as well as the side extension (left)



T5 & T6 beyond



TG1 to the rear



TG2 to the rear

9. Limitations

This report is intended as a preliminary appraisal of trees >7.5cm dbh, their health and safety condition. The potential influence on the property now and for a period of 5 years as 'future risk' from tree related subsidence. Recommendations for tree works and future management are made to meet the primary objectives of making trees safe and limiting any soil stability/ subsidence issues to the purchase property. In achieving this, it should be appreciated that recommendations may in some cases be contrary to best Arboricultural practice for tree pruning/management and is a necessary compromise between competing objectives.

The presence of Tree Preservation Orders (TPO) or Conservation Area status must be determined prior to any tree works being implemented, failure to do so can result in fines in excess of £20,000.

A legal Duty of Care requires that any tree works specified in this report should be performed by qualified, arboricultural contractors who have been competency tested to determine their suitability for such works in line with Health & Safety Executive Guidelines. Additionally all works should be carried out according to British Standard 3998 (2010) *Recommendations for Tree Work*

