

Arboricultural Assessment Report

Preliminary Report on Trees

For:	Client:	Oriel Services Limited
	Insurer:	Allianz Cornhill Broker Division
Site:	Policyholder:	Mr & Mrs. Abdelaziz
	Risk Address:	28 Montpelier Grove, London, NW5 2XD
Refs:	OCA Ref:	53840
	Client Ref:	7189695
	Insurer Ref:	5H/2/2510021

Survey By:	Paul Cook		
Title:	Senior Consulting Arborist	Date:	30 January 2013
Report By:	Paul Cook		
Title:	Senior Consulting Arborist	Date:	28 February 2013



Consulting Arboriculturists

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1.0 Introduction & brief

- 1.1** OCA UK Limited has been instructed by Oriel Services Limited on behalf of the building insurers of 28 Montpelier Grove, London, NW5 2XD (the insured property). We have been advised by Oriel Services Limited that the property has suffered differential movement and damage which is considered to have been caused by trees growing adjacent the property influencing soils beneath its foundations.
- 1.2** We have been instructed to undertake a survey of the vegetation growing adjacent the insured property, to provide our opinion as to whether, based on the available information any of this vegetation is likely to be influencing soil moisture levels beneath the foundations of the property and if so to provide recommendations as to what tree management could be implemented to effectively prevent damage continuing.
- 1.3** The vegetation growing adjacent the risk address has been surveyed from the ground using digital measuring devices and/or standard tape measures. All distances are measured to the nearest point of the risk address unless otherwise stated.

2.0 Limitations

- 2.1** Recommendations with respect to tree management are associated with the risk address as stated on the front cover of this report and following consultation with investigating engineers. The survey of trees and any other vegetation is associated with impacts on the risk address subject of this report. Matters of tree health, structural condition and/or of the safety of vegetation under third party control are specifically excluded. Third party land owners are strongly advised to seek their own professional advice as it relates to the health and stability of trees under their control.

In relation to the possibility of heave damage, the owners of any trees within third party control must obtain their own advice in respect of the possibility of any damage to their own or any other structures outside of the control of the insurers of the risk address subject of this report from any soil heave.

- 2.2** Recommendations do not take account of any necessary permission (statutory or otherwise) that must be obtained before proceeding with any tree works.

3.0 Vegetation and subsidence of low rise buildings – property owner's guide

3.1 Soils, soil water and vegetation

All vegetation requires water to live and this water is substantially accessed from the soil within which the plants roots grow.

If the soil is classified as a clay soil then it will hold very much more water than sands, gravels and loam soils. During the summer as plants abstract water from the clay soil then the soil volume will "shrink" and "swell" as water is first removed and then added by summer rainfall.

In years in which rainfall during the summer is less than the total amount of water taken from the soil by plants then shrinkage will continue. This shrinkage may remove support from building foundations leading to cracking in the fabric of the building.

3.2 Vegetation management

The control of trees, shrubs and climbers by removal is a proven technique that controls total soil water loss thereby minimising soil shrinkage and allowing repairs to proceed.

If vegetation management works are carried out promptly then repairs can usually proceed very quickly and the duration and distress associated with the disruption that tree related subsidence brings can be minimised.

3.3 Third party liaison and statutory controls

Tree roots do not respect physical or property boundaries and can travel for many metres beyond the above ground "dripline" of the canopy of the vegetation.

The purpose of this report is to ascertain on a preliminary basis which vegetation is the most likely substantial and/or effective contributory cause of the damage witnessed to allow for liaison with third parties or with local administrative Councils as necessary.

You can learn more about tree related subsidence of low rise buildings by visiting:

www.oca-arb.co.uk/whatisSubsidence.htm

4.0 Summary of Engineers Report

We have been provided with a copy of the Cunningham Lindsey 'Resume of Technical Aspects' report dated 11 December 2012 relating to damage at the insured property. The comments made below reference this Report.

4.1 History and Timing of Damage

The Engineer states that the current damage was first discovered in July 2012.

4.2 Description of damage and diagnosed mechanism of movement

The Engineer describes the main area of damage to the rear right extension taking the form of tapering diagonal cracks. The Engineer considers that this pattern of damage indicates a mechanism of downwards movement of the rear right extension and rotation away from the rear addition.

4.3 Engineer's Assessment of the Category of Damage

The Engineer has determined that current damage at the insured property falls within Category 2 (slight) in accordance with Table 1 of the BRE Digest 251 – Assessment of damage in low-rise buildings.

4.4 Engineer's Conclusion as to the Cause of Damage

The Engineer has concluded that the current damage has resulted from clay shrinkage subsidence. This has been caused by moisture abstraction by roots altering the moisture content of the clay subsoil resulting in volume changes, which in turn have affected the foundations.

5.0 Assessment of Site Investigations

We have been provided with a copy of the CET Safehouse Limited Site Investigation Report dated 25 January 2013 undertaken at the insured property. The comments made below reference this Report.

5.1 Foundation Depth

A trial pit and borehole was excavated adjacent the front of the rear right extension. This revealed foundations at this location to be constructed at a depth of 800mm below ground level.

5.2 Soils

Soils beneath the foundations in Trial Pit / Borehole 1 are described as stiff silty Clay to a depth of 5.0m. Samples of these soils were sent for laboratory testing. The results of these tests show that the underlying soils have plasticity indices ranging from 47% to 53% which means that they have a high potential for shrinkage.

5.3 Roots

Roots were noted throughout the trial pit and to a maximum depth of 1.8m in the borehole. Samples of these roots were tested using light microscopy techniques and have been formally identified as from the botanical genus *Acer* (Sycamore, Maple).

6.0 Adjacent Vegetation

There are numerous trees and shrubs growing adjacent the insured property. The most significant of this vegetation comprises of Sycamore T1 and Sycamore T3 growing within the neighbouring garden at 79 Falkland Road and Loquat S1, Butterfly Bush S2 and Laburnum T2 growing within the neighbouring garden at 77 Falkland Road. None of this vegetation appears to have been the subject of any significant pruning operations in the past.

To the rear of the insured property, within the neighbouring garden at 15 Leighton Crescent there are three Sycamore trees and a London Plane tree (G1). The Sycamore trees do not appear to have been the subject of any significant pruning operations. However, the London Plane tree within this group has been pollarded in the past.

Within the rear garden of the insured property is Goat Willow T4. This tree does not appear to have been the subject of any significant pruning operations.

Details of the above vegetation are listed in the Tree Tables and their locations are shown on the Site Plan both attached to this report.

7.0 Conclusions

Roots have been noted to a maximum depth of 1.8m in TP/BH1. Samples of these roots were tested using light microscopy techniques and have been formally identified as from the botanical genus *Acer* (Sycamore, Maple).

Given its size, species, and proximity to the location of TP/BH1 we consider that these roots have emanated from Sycamore T1.

No other roots were recovered during the site investigation. However, given its size, species and close proximity to the insured property it is likely that roots from Loquat S1 have also extended beneath the depth of foundations of the damaged extension.

The area of damage and the mechanism of movement of the garage block as described by the Engineer are consistent with the location of Sycamore T1 and Loquat S1.

Shrinkable clay soils have been encountered beneath foundations. These soils will be subject to volumetric changes due to fluctuations in their moisture content.

Therefore it is our opinion that sufficient information has been provided to demonstrate that, on the balance of probabilities, Sycamore T1 is the material cause of the current subsidence damage and Loquat S1 is a contributory factor.

With reference to Laburnum T2, Butterfly Bush S2, Sycamore T3, Goat Willow T4 and the group of Sycamore and London Plane G1, given their size, species and distance to the insured property we do not consider this vegetation to be a factor of the current movement. However, Laburnum T2 and Butterfly Bush S2 present a significant risk of causing subsidence damage in the future.

We do not consider that there is any other vegetation growing adjacent to the garage block that could be considered to be a factor in current damage.

8.0 Recommendations

We do not consider that pruning works will offer either an effective or sustainable means of controlling water use of Sycamore T1 or Loquat S1. Therefore and in order to provide a long-term solution to the current subsidence damage we recommend that this vegetation be removed.

Similarly, we also recommend that consideration be given for the removal of Laburnum T2 and Butterfly Bush S2 to address the risk of future subsidence damage.

8.1 Recommended vegetation management to address the current subsidence:

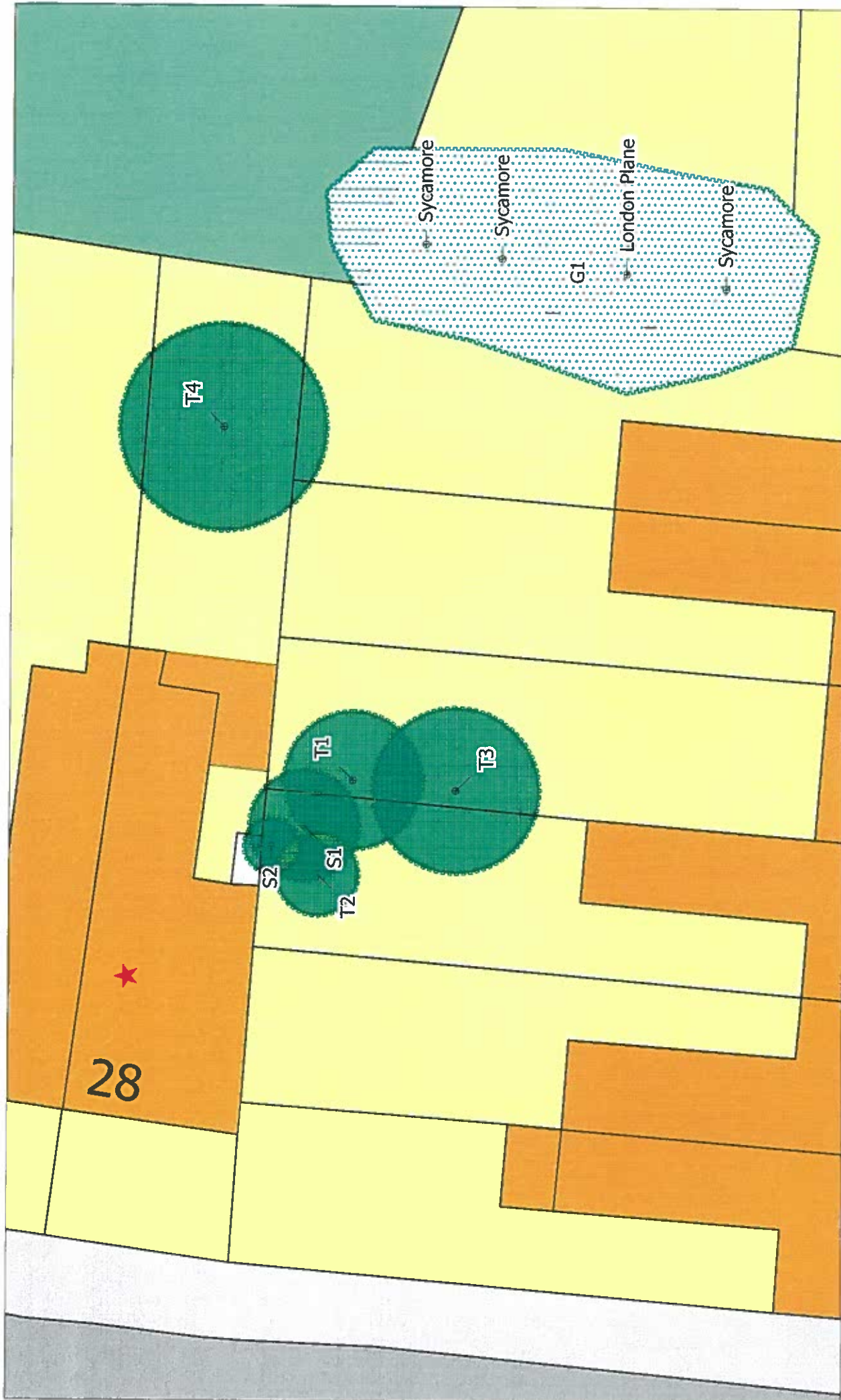
Tree No:	Species	Works Required
T1	Sycamore	Fell as close to ground level as practicable and treat the stump with an appropriate herbicide to prevent future growth
S1	Loquat	Fell as close to ground level as practicable and treat the stumps with an appropriate herbicide to prevent future growth

8.2 Recommended vegetation management to address risk of future subsidence:

Tree No:	Species	Works Required
T2	Laburnum	Fell as close to ground level as practicable and treat the stump with an appropriate herbicide to prevent future growth
S2	Butterfly Bush	Fell as close to ground level as practicable and treat the stump with an appropriate herbicide to prevent future growth

Age Class	YO – Young, SM – Semi-Mature, EM – Early Mature, MA – Mature, FM – Fully Mature, OM – Over Mature	Ownership	PH – Within boundary of risk address P3P – Within boundary of third party properties LA – Within land owned by a Local Authority C3P – Commercial third party U – Within land of indeterminate ownership.
Condition	G – Good, F – Fair, P – Poor, D – Dead, DYing or Dangerous		
Stem Diameter	MS – Multi-stemmed tree		

Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg (m)	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
G1	Sycamore and London Plane	EM	F	15	9	300	16	No significant past tree works towards the Sycamore. The London Plane has been Pollarded	No work required.	N/A.	Comprises 3 x Sycamore and 1 x London Plane. Average stem diameter and crown spread noted. Dimensions estimated due to third party ownership and restricted access. London Plane has approximately 500mm stem diameter.	15 Leighton Crescent, London, NW5 2QY	P3P
S1	Loquat	EM	F	5.5	4	80	1.4	No significant past tree works	Fell and treat stumps.	Access through building.	Average stem diameter noted and estimated due to third party ownership.	77 Falkland Road, London, NW5 2XB	P3P
S2	Butterfly Bush	YO	F	3.2	2	60	1.5	No significant past tree works	Future risk: Fell and treat stump.	Access through building.	Stem diameter estimated due to third party ownership.	77 Falkland Road, London, NW5 2XB	P3P
T1	Sycamore	EM	F	10	5	180	2.7	No significant past tree works	Fell and treat stump.	Access through building.	Stem diameter estimated due to third party ownership.	79 Falkland Road, London, NW5 2XB	P3P
T2	Laburnum	EM	F	5	3	100	2.9	No significant past tree works	Future risk: Fell and treat stump.	Access through building.	Stem diameter estimated due to third party ownership.	77 Falkland Road, London, NW5 2XB	P3P
T3	Sycamore	EM	F	9	6	200	9	No significant past tree works	No work required.	N/A.	Dimensions estimated due to third party ownership and restricted view.	79 Falkland Road, London, NW5 2XB	P3P
T4	Goat Willow	MA	F	8.9	7.5	270	8	No significant past tree works	No work required.	N/A.		28 Montpelier Grove, London, NW5 2XD	PH



Location: 28 Montpelier Grove, London, NW5 2XD
 Job Ref.: 53840
 Survey Date: 30/01/2013
 Scale: 1:180 @ A4

OCA
 A Tree Consultancy
 Planning & Design
 100% Tree Preservation
 100% Satisfaction
 100% Quality
 100% Value
 100% Service
 100% Success
 100% Satisfaction
 100% Quality
 100% Value
 100% Service
 100% Success

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Site Photographs



1. View towards Loquat S1 and Sycamore T1.



2. View towards Sycamore T1 (centre) and Loquat S1 (rear).



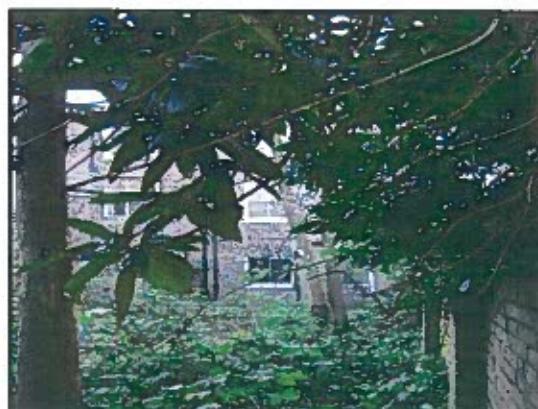
3. Lower stem of Sycamore T1 and part of Loquat S1.



4. Lower stem of Goat Willow T4 in relation to the rear of the insured property.



5. Sycamore and London Plane G1.



6. View towards the lower stem of Sycamore T1 and Sycamore T3.