Arboricultural Assessment Report

Preliminary Report on Trees

For:	**Client:**	Oriel Services Limited
	Insurer:	[redacted]
Site:	**Policyholder:**	[redacted]
	Risk Address:	Raised Ground Floor Flat, 54 Belsize Park, London, NW3 4EE
Refs:	**OCA Ref:**	50711
	Client Ref:	4364124
	Insurer Ref:	[redacted]

Survey By:	Gemma Holmes		
Title:	Arboricultural Technician	**Date:**	14 February 2012
Report By:	Andrew Graham		
Title:	Senior Consulting Arborist	**Date:**	22 March 2012

OCA UK Limited
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 Raised Ground Floor Flat, 54 Belsize Park, London, NW3 4EE (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 and/or pruning 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 31 October 2011 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 damage was first discovered in the summer of 2011.

4.2 Description of damage and diagnosed mechanism of movement

The Engineer describes the main area of damage as being to rear left corner of the property, with damage to the rear left hand corner of the property with tapering external and internal cracks. There is cracking to the rear elevation to the left hand side of the bay window to the upper ground floor flat. There is cracking to the rear portion of the passageway which provides support to the upper levels.

4.3 Engineers Assessment of the Category of Damage

The Engineer has determined that current damage at the insured property falls within Category 3 in accordance with Table 1 of the BRE Digest 251 – Assessment of damage in low-rise buildings.

4.4 Engineers Conclusion as to the Cause of Damage

The Engineer has concluded that the damage has resulted from clay shrinkage subsidence. This has been caused by vegetation which is the responsibility of 55 Belsize Park.

5.0 Assessment of Site Investigations

We have been provided with a copy of the CET Safehouse Limited Site Investigation Report dated 19 January 2012 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 rear left corner of the property. This revealed foundations at this location to be constructed at a depth of 350mm and 475mm.

5.2 Soils

Soils beneath the foundations in Trial Pit / Borehole 1 are described as firm silty Clay to a depth of 2m; becoming Very stiff from 2.8m to 5m. Samples of these soils were sent for laboratory testing. The results of these tests show that the underlying soils have plasticity indices ranging from 53% to 55% 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 550mm in the borehole.

6.0 Adjacent Vegetation

Located to the rear left corner of 55 Belsize Park is Beech T1. Located to the rear left corner of the insured property are Beech T2, Horse Chestnut T3 and Holly & Ash G1.

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

Shrinkable clay soils have been encountered beneath the foundations of the insured property. These soils will be subject to volume changes dependent on their moisture content.

Formal root identification has not been possible given the immaturity of the root samples. However, given the size species and proximity to the location of the trial pit/borehole and insured property, we consider that Beech T2, Horse Chestnut T3 and Holly & Ash G1 will almost certainly be rooting underside foundations of the insured property.

Given the above we consider that Beech T2, Horse Chestnut T3 and Holly & Ash G1 are the most significant vegetation in relation to soil drying beneath the insured property and as such are the material cause of the current subsidence damage.

8.0 Recommendations

We do not consider that pruning works will offer either an effective or sustainable means of controlling the water use of Beech T2, Horse Chestnut T3 and Holly & Ash G1. Therefore and in order to provide a long-term solution to the current subsidence damage we recommend that these trees be removed.

8.1 Recommended vegetation management to address the current subsidence:

Tree No:	Species	Works Required
T2	Beech	Fell to as close to ground level as is practicable and treat stump with an appropriate herbicide to prevent future growth
T3	Horse Chestnut	Fell to as close to ground level as is practicable and treat stump with an appropriate herbicide to prevent future growth
G1	Holly & Ash	Fell to as close to ground level as is practicable and treat stump with an appropriate herbicide to prevent future growth