ARBORICULTURAL ASSESSMENT REPORT

For:	**Client:**	Oriel Services Limited
	Insurer:	[redacted]
Site:	**Policyholder:**	[redacted]
	Risk Address:	6 Hollycroft Avenue, London, NW3 7QL
Refs:	**OCA Ref:**	[redacted]
	Client Ref:	
	Insurer Ref:	

Report By:	Sue Lawson		
Title:	Arborist	**Date:**	21 January 2015

OCA UK Limited

Consulting Arboriculturists

[redacted]

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UKAS MANAGEMENT SYSTEMS 078

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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 6 Hollycroft Avenue, London, NW3 7QL (the insured property). We have been advised that the insured 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. 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.

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

2.3 Recommendations do not take account of any requirements for survey or mitigation relating to European or other protected species, e.g. bird nesting or bats. Land owners must obtain their own professional advice in respect of any protected species.

3.0 DISCUSSION AND ANALYSIS

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 occur. 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 or pruning as appropriate are proven techniques that can control 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 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:

[redacted]

[redacted]

4.0 EVIDENTIAL REVIEW AND MATERIAL CONSIDERATIONS

4.1 Engineering Summary

Engineering Appraisal Report dated 24th December 2015.

The engineer has described the damage to the property, its location and the likely mechanism of movement, and has concluded that the building failure is related to differential subsidence damage caused as a result of the action of vegetation.

This is a new subsidence claim and we are unaware of any previous history of subsidence at the property.

4.2 Foundations, geotechnical, and root identification

Site Investigation Report dated 12th December 2014.

A factual geotechnical report has described the below ground foundation design, soil and geotechnical conditions, and any root identification where available.

Foundations are described as being 1200mm below ground level in Trial Pit 1.
Foundations are described as being 1250mm below ground level in Trial Pit 2.

Soil samples have been subject to laboratory analysis and the results of these tests indicate soils have a plasticity index ranging from 18% to 37% in Trial Pit 1.
Soil samples have been subject to laboratory analysis and the results of these tests indicate soils have a plasticity index ranging from 27% to 45% in Trial Pit 2.

Roots have been recovered from the trial pits and subjected to laboratory analysis and the results confirm:

TP/BH1: *Fraxinus*, 5 roots, 1.5mm diameter.
TP/BH1: *Fraxinus*, 4 roots, 1mm diameter.
TP/BH2: *Fraxinus*, 1 root, 1.5mm diameter.

4.3 Monitoring results and other engineering evidence or advice.

The CCTV survey confirms that drains are serviceable apart from a yard gulley to the front which is silted up.

The engineer has recommended that monitoring be carried out.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Results of the field survey and evidential review

We can confirm that vegetation exists on or near the insured property that is considered to be causing or contributing to the current subsidence damage.

The site investigation has confirmed the presence of a shrinkable clay soil. Roots have been identified from below foundation level at the front of the property which are consistent with the position and species of Ash T7 and from below foundation level at the rear which are consistent with the position and species of Ash T1.

We consider that T1 and T7 are the main cause of the damage to the front and rear of the property.

We consider that Cherry T3 and Cherry T5 are a future risk however the policyholder has indicated that both of these trees are shortly to be removed. In addition, we would recommend that the size of Climbing Hydrangea G3 be contained as a precaution against future damage.

5.2 Recommendations

On the basis of our findings we have considered a practical vegetation management specification. This specification will assist in reducing the impact of the adjacent vegetation on soil moisture levels, thereby potentially stabilising foundations of the affected area of the building.
Where felling has been proposed, this will be on the basis that the vegetation in question would not respond well to a severe reduction in leaf area that would inevitably lead to decay, the development of potential hazards, and an annual or other on-going management commitment and cost. If pruning is recommended, the specification will be designed to allow continual ease of re-pruning with a reasonable prospect of a reduction in soil water use.

5.3 Recommended vegetation management to address the current subsidence:

Tree No:	Species	Works Required
T1	Ash	Fell and treat stump
T7	Ash	Fell and grind stump

5.4 Recommended vegetation management to address risk of future subsidence:

Tree No:	Species	Works Required
T3	Cherry	Fell and treat stump.
T5	Cherry	Fell and treat stump.
G3	Climbing Hydrangea	Maintain at current dimensions with regular pruning.

6.0 STATUTORY CONTROLS

We are currently waiting for confirmation from the London Borough of Camden as to whether any of the implicated vegetation is subject to a Tree Preservation Order but the Council's online records confirm that the trees are all within a Conservation Area.

7.0 APPENDIX 1: TREE TABLES

Age Class	**YC** – 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 indeterminable ownership.
Condition	**G** – Good. **F** – Fair. **P** – Poor. **D** – Dead, Dying or Dangerous		
Stem Diameter	**MS** – Multi-stemmed tree		

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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
T1	Ash	EM	F	15.5	16	500	10	Crown thinned.	Fell and treat stump.	None	Diameter estimated due to restricted access.	34 Platts Lane, London, NW3 7NS	P3P
T2	Japanese Flowering Cherry	SM	F	5	4	100	4	No significant past tree works	No work required.	N/A	Diameter estimated due to restricted access.	8 Hollycroft Avenue, London, NW3 7QL	P3P
T3	Cherry	SM	F	4	2	95	0.5	No significant past tree works	Future risk: fell and treat stump.	None	Client will be removing this tree shortly.	6 Hollycroft Avenue, London, NW3 7QL	PH
T4	Cherry	SM	F	4	2	120	4	No significant past tree works	No work required.	N/A		6 Hollycroft Avenue, London, NW3 7QL	PH
T5	Cherry	SM	F	4	2	120	1	No significant past tree works	Future risk: fell and treat stump.	None	Client will be removing this tree shortly.	6 Hollycroft Avenue, London, NW3 7QL	PH
T6	Cherry	SM	F	4	2	120	4	No significant past tree works	No work required.	N/A		6 Hollycroft Avenue, London, NW3 7QL	PH
T7	Ash	EM	F	15	10	350	7	No significant past tree works	Fell and grind stump.	None		London Borough of Camden	LA
G1	Laurel	SM	F	4	2	100	5	No significant past tree works	No work required.	N/A	Group of assorted Laurel species.	6 Hollycroft Avenue, London, NW3 7QL	PH
G2	Privet	SM	F	2	1	30	0.05	Pruned regularly	No work required.	N/A		6 Hollycroft Avenue, London, NW3 7QL	PH
G3	Hydrangea (Climbing)	MA	F	2	0.5	20	0.05	No significant past tree works	Future risk: maintain at current dimensions	None		6 Hollycroft Avenue, London, NW3 7QL	PH
G4	Dogwood	YO	F	1	1	20	4	No significant past tree works	No work required.	N/A		6 Hollycroft Avenue, London, NW3 7QL	PH
G5	Box	SM	F	1	0.5	20	4.5	No significant past tree works	No work required.	N/A		6 Hollycroft Avenue, London, NW3 7QL	PH

[redacted]

Date of Survey: 15 January 2015

8.0 APPENDIX 2: SITE PLAN

Location:	6 Hollycroft Avenue, London, NW3 7QL
Job Ref.:	[redacted]
Survey Date:	15/01/2015
Scale:	1:200 @ A4

By OCA Limited

9.0 APPENDIX 3: SITE PHOTOGRAPHS

Site Photographs

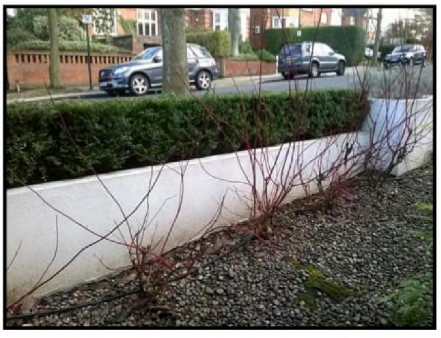
1. Ash T1 from the rear garden

2. Ash T7 on the street to the front

3. Cherry T3 with G2 in background

4. Cherry T5 to the front of the property

5. Climbing Hydrangea G3



6. G4 in foreground and G5 in background

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