ARBORICULTURAL ASSESSMENT REPORT

For:	**Client:**	Oriel Services Limited
	Insurer:	Zurich - UK Commercial
Site:	**Policyholder:**	[redacted]
	Risk Address:	21 Crescent Road, London, N8 8AP
Refs:	**OCA Ref:**	58281
	Client Ref:	7891694
	Insurer Ref:	CYC4244095

Report By:	Sue Lawson		
Title:	Arborist	**Date:**	25 February 2015

OCA UK Limited

Consulting Arboriculturists

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CONTENTS

1.0 INTRODUCTION & BRIEF 3
2.0 LIMITATIONS 3
3.0 DISCUSSION AND ANALYSIS 4
4.0 EVIDENTIAL REVIEW AND MATERIAL CONSIDERATIONS 5
5.0 CONCLUSIONS AND RECOMMENDATIONS 6
6.0 STATUTORY CONTROLS 7
7.0 APPENDIX 1: TREE TABLES 8
8.0 APPENDIX 2: SITE PLAN 10
9.0 APPENDIX 3: SITE PHOTOGRAPHS 12

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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 21, Crescent Road, London, N8 8AP (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:

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

4.0 EVIDENTIAL REVIEW AND MATERIAL CONSIDERATIONS

4.1 Engineering Summary

Engineer Appraisal Report dated 6th February 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.

We are unaware of any previous subsidence claim for this property however we understand that damage was first noticed around 1992 and deteriorated recently.

4.2 Foundations, geotechnical, and root identification

Site investigation Report dated 21st January 2015

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 700mm below ground level.
Foundations are described as being 500mm below ground level.
Foundations are described as being 11000mm below ground level.

Trial pit / borehole samples have been subject to laboratory analysis and the results of these tests indicate soils have a plasticity index ranging from 50% to 58%.

Roots have been recovered from the trial pit(s) and subjected to laboratory analysis and the results confirm:

TP/BH1: Acer. 7mm diameter
TP/BH1: Acer 5 roots. 1mm diameter
TP/BH1: Acer, 2 roots. 1mm diameter

4.3 Monitoring results and other engineering evidence or advice.

The CCTV survey of the drains has revealed various defects within the drainage to the rear of the property including cracked pipes, displaced joints and root ingress.

The engineer has confirmed that crack and level monitoring have been set up.

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 presence of highly shrinkable clay has been confirmed. Roots have been identified from beneath the foundation at the rear left and rear right corners of the property which are consistent with the position and species of T1 and T3 (Sycamores). T1 has recently been pruned and is situated approximately 4m from the rear right corner of the property. The engineer has confirmed that the mechanism of movement is downward movement of the rear left corner and whilst T3 is situated further from the property (approximately 14m), its position is consistent with the rear left corner.

We consider that these trees are the likely cause of any vegetation-related clay shrinkage subsidence.

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	Sycamore	Fell and treat stump.
T3	Sycamore	Fell and treat stump.

5.4 Recommended vegetation management to address risk of future subsidence:

Tree No:	Species	Works Required
T2	Ash	Fell and treat stump.
G2	Bamboo	Maintain at current size.

6.0 STATUTORY CONTROLS

We are currently waiting for confirmation from Haringey Borough Council as to whether any of the implicated vegetation is subject to a Tree Preservation Order or Conservation Area controls.

7.0 APPENDIX 1: TREE TABLES

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 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	Sycamore	EM	F	17	6	400	4.2	Crown thinned.	Fell and treat stump.	None		5 Alyn Bank, Crescent Road, London, N8 8AP	PH
T2	Ash	SM	F	18	6	460	12.8	No significant past tree works	Fell and treat stump.	None		5 Alyn Bank, Crescent Road, London, N8 8AP	PH
T3	Sycamore	SM	F	18	6	410	14.2	No significant past tree works	Fell and treat stump.	None		5 Alyn Bank, Crescent Road, London, N8 8AP	PH
T4	Laurel	YO	F	4	4	110	13	No significant past tree works	No work required.	N/A		5 Alyn Bank, Crescent Road, London, N8 8AP	PH
G1	Fatsia Japonica and Bamboo	YO	F	2	2.5	30	4	Pruned regularly	No work required.	N/A		5 Alyn Bank, Crescent Road, London, N8 8AP	PH
G2	Bamboo	YO	F	1	1.5	10	2	No significant past tree works	Maintain at current size	None		5 Alyn Bank, Crescent Road, London, N8 8AP	PH

8.0 APPENDIX 2: SITE PLAN



Location:	5 Alyn Bank, Crescent Road, London, N8 8AP
Job Ref.:	58281
Survey Date:	19/02/2015
Scale:	1:150 @ A4

4 The Courtyards
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9.0 APPENDIX 3: SITE PHOTOGRAPHS

Site Photographs



1. G1



2. G2



3. T1 left, T2 central and T3 right



4. T1



5. T2



6. T4 left with T3 stem to the right



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