ARBORICULTURAL ASSESSMENT REPORT

For:	**Client:**	GAB Robins UK Ltd
	Insurer:	[redacted]
Site:	**Policyholder:**	[redacted]
	Risk Address:	Studio House Hampstead Hill Gardens, London, NW3 2PH
Refs:	**OCA Ref:**	55953
	Client Ref:	B1330768
	Insurer Ref:	

Report By:	Sue Lawson		
Title:	Arborist	**Date:**	31 December 2014

OCA UK Limited

Consulting Arboriculturists

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1.0 INTRODUCTION & BRIEF

1.1 OCA UK Limited has been instructed by GAB Robins UK Ltd on behalf of the building insurers of Studio House Hampstead Hill Gardens, London, NW3 2PH (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

Email dated 29th December 2014.

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 February 2014
Root Identification Report dated 3rd February 2014
Soils Analysis Report dated 29th January 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 500mm 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 38% to 50%.

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

TH1: 1 root: some conifers; particularly like the family CUPRESSACEAE (cypresses ('macrocarpa', 'Leylandii' etc.), Thuja (Western Red Cedar), Junipers). A further sample, not examined in detail appeared similar under low magnification. Alive, recently*.
1 piece of BARK only, insufficient material for identification.
8 samples: unfortunately insufficient cells for identification.

4.3 Monitoring results and other engineering evidence or advice.

We have been provided with monitoring for the period 17/04/14 to 05/12/14. Movement of fairly low amplitude (less than 2mm) has occurred during this period.

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 the foundation of the garage which is consistent with the position and species of G1 (3x Lawson Cypress). These trees are of considerable size and are located within 1m of the rear of the garage. We consider that the trees within G1 are the main cause of the current damage and recommend they be removed. In addition to G1, we consider that T1 (English Oak) and T3 (Eucalyptus) are capable, at a distance of 4m, of causing significant soil drying adjacent/beneath the garage and despite roots not being identified, we consider these trees may be implicated in the current damage. We recommend that both are removed.

There are a large number of shrubs and trees situated adjacent the garage however at this stage, we consider that G1, T1 and T3 are the most significant vegetation in relation to the current 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
G1	3x Lawson Cypress	Fell all trees.
T1	English Oak	Fell and treat stump.
T3	Eucalyptus	Fell and treat stump.

6.0 STATUTORY CONTROLS

We are currently waiting for confirmation from Camden 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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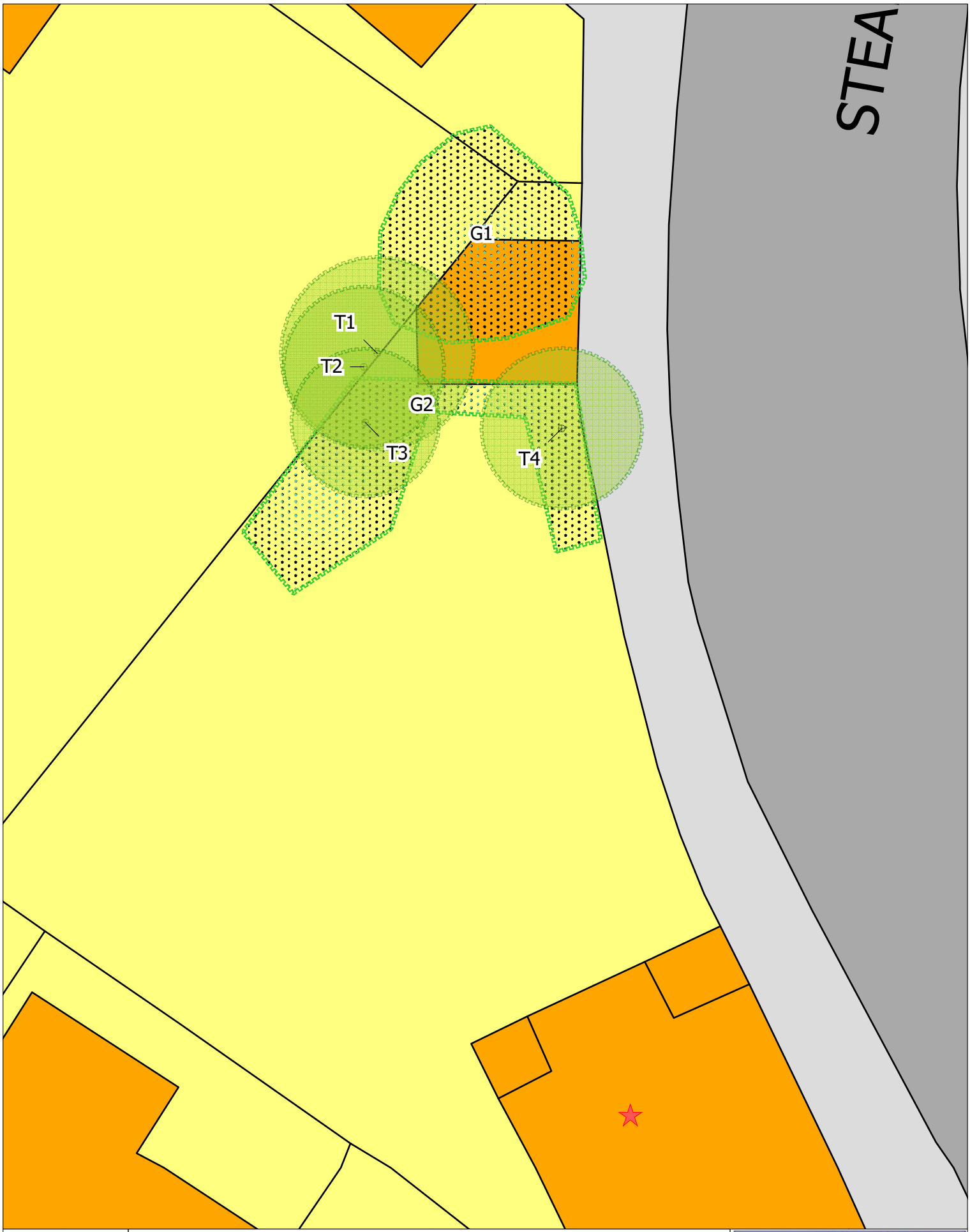
Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg (m)	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
T1	English Oak	EM	F	14	6	180	4	No significant past tree works	Fell and treat stump	None	All dimensions estimated as no access to stem		U
T2	Holly	EM	F	13	5	150	6	No significant past tree works	No work required.	N/A	All dimensions estimated as no access to stem		U
T3	Eucalyptus	EM	F	7.7	4.6	200	4	Reduced 4 years ago	Fell and treat stump	None	Stem diameter estimated as no access to stem	Studio House, Hampstead Hill Gardens, London, NW3 2PH	PH
T4	Prunus species	SM	F	7	5	150	1	No significant past tree works	No work required.	N/A		Studio House, Hampstead Hill Gardens, London, NW3 2PH	PH
G1	Lawson Cypress	EM	F	14	10	350	0.1	Topped 2 years ago	Fell	None	All dimensions estimated as no access to third party land	22 Rosslyn Hill, London, NW3 1PD	P3P
G2	Mixed Shrubs	SM	F	2	2	10	0.5	Trimmed regularly	No work required.	N/A	Species include Choisya, Berberis, California Lilac, Bamboo, and Ivy amongst others.	Studio House, Hampstead Hill Gardens, London, NW3 2PH	PH

8.0 APPENDIX 2: SITE PLAN



Location:	STUDIO HOUSE, Hampstead Hill Gardens, London, NW3 2PH
Job Ref.:	55953
Survey Date:	28/04/2014
Scale:	1:150 @ A4

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By OCA Limited

9.0 APPENDIX 3: SITE PHOTOGRAPHS

Site Photographs

1. PH Eucalyptus

2. PH vegetation

3. PH vegetation

4. View from house

5. View from house

6. View from house

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