ARBORICULTURAL ASSESSMENT REPORT

For:	**Client:**	Crawford & Company (Nottingham)
	Insurer:	[redacted]
Site:	**Policyholder:**	[redacted]
	Risk Address:	14a Downshire Hill, London, NW3 1NR
Refs:	**OCA Ref:**	56971
	Client Ref:	SU1403227
	Insurer Ref:	[redacted]

Report By:	Sue Lawson		
Title:	Consulting Arborist	**Date:**	Amended to include SI 15/01/15

OCA UK Limited

Consulting Arboriculturists

4 The Courtyards, Phoenix Square, Severalls Park, Wyncolls Road, Colchester, Essex CO4 9PE
Tel.No: 01206 751626

Email: colchester@oca-arb.co.uk www.oca-arb.co.uk

CONTENTS

1.0 INTRODUCTION & BRIEF

1.1 OCA UK Limited has been instructed by Crawford & Company (Nottingham) on behalf of the building insurers of 14a Downshire Hill, London, NW3 1NR (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

Report dated 13/10/14.

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

Auger Site Investigation dated 18 January 2015.
GSTL soil analysis dated 18 December 2015.
Richardson's Botanical Identifications dates 05 January 2015.

A single trial pit / borehole (TH1) was opened at the front left corner of the property and revealed foundation depth as 500mm below ground level.

The soil within TH1 was found to have a plasticity index of 33 – 41%.

Roots have been identified from beneath the foundation to a maximum depth of 2.5m as Fraxinus (Ash).

The engineer has confirmed that monitoring is underway and the second reading is due in February 2014.

The engineer has confirmed that drains are remote from the damage and soil analysis does not indicate leaking drains therefore no CCTV survey has been 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 confirms the presence of a shrinkable clay soil. Roots have been identified from beneath the foundation at the front left corner of the property which are consistent with the position and species of T1 (Ash). The engineer has confirmed that damage is consistent with vegetation-related clay shrinkage subsidence.

At this stage, we consider that T1 (young Ash), G1 (Viburnum hedge) and T2 (Hawthorn) are situated within potential influencing distance and their positions are consistent with the area of damage. We consider that T1, G1 and possibly T2 are the likely cause of the current vegetation-related clay shrinkage subsidence. Monitoring is currently underway and we would recommend that T1 be removed along with the section of G1 closest to the house in the first instance. Should movement of the property continue following these works, we consider that removal of T2 may be required.

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.
G1	Viburnum hedge	Fell the section of hedge within 1.5m of the property and treat stumps.

6.0 STATUTORY CONTROLS

The Local Authority has confirmed that the property is situated within Hampstead Conservation Area.

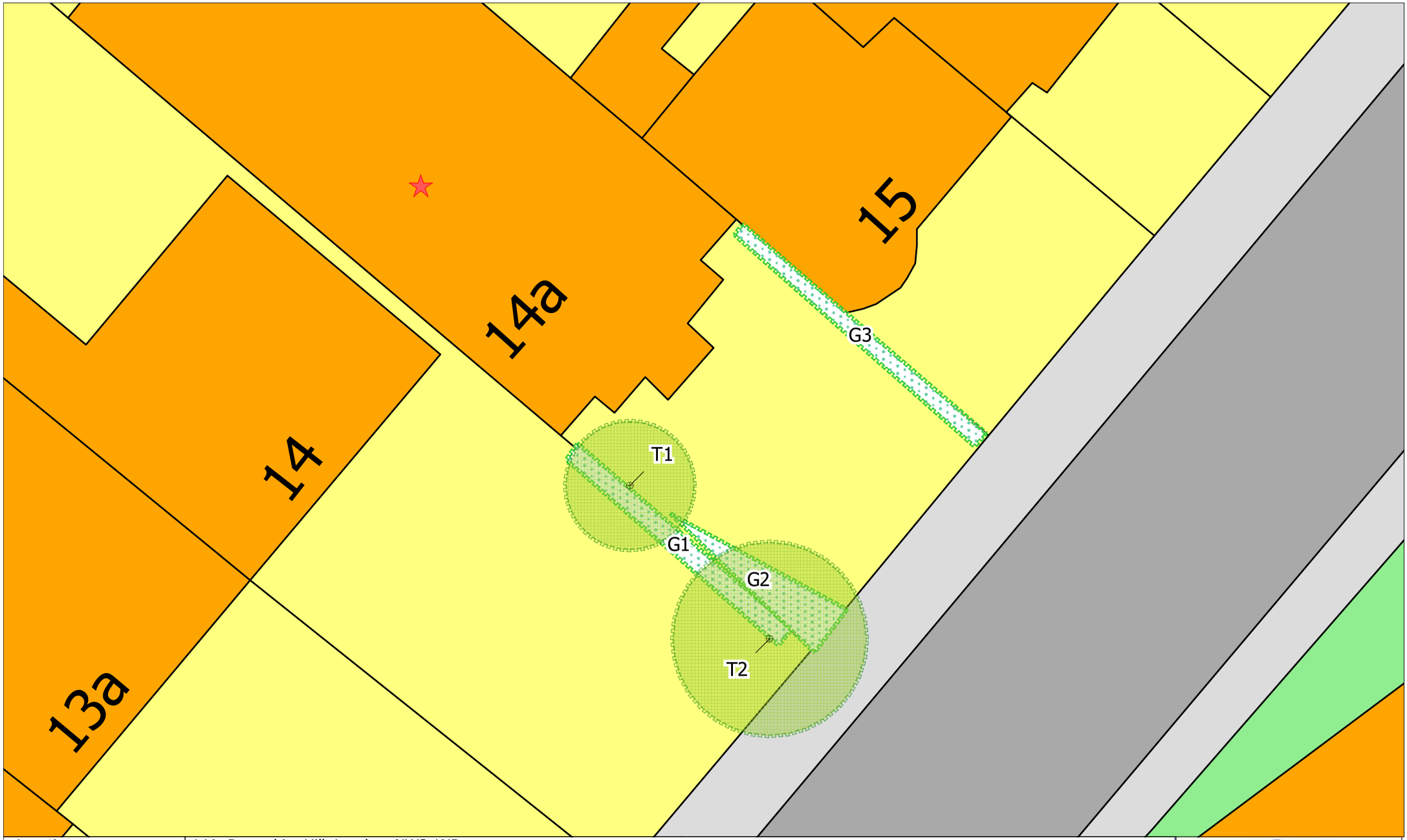
7.0 APPENDIX 1: TREE TABLES

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		

OCA UK Limited
Consulting Arboriculturists

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	YO	F	6	4	150	2.4	No significant past tree works	Fell and treat stump	none		14A, Downshire Hill, London, NW3 1NR	PH
T2	Hawthorn	MA	F	6.9	6	400	7	crown lift 2 yrs ago	No work required at this stage.	n/a		14A, Downshire Hill, London, NW3 1NR	PH/P3P
G1	Viburnum	EM	F	2.1	1.5	90	1.2	Reduced 1 year ago	Fell the section of hedge within 1.5m of the house and treat stumps	none		14A, Downshire Hill, London, NW3 1NR	P3P
G2	Mixed species	EM	F	3	3	100	5.2	No significant past tree works	No work required.	n/a		14A, Downshire Hill, London, NW3 1NR	PH
G3	Includes Ivy and Viburnum	MA	F	4.4	4.2	150	4.5	No significant past tree works	No work required.	n/a		14A, Downshire Hill, London, NW3 1NR	PH

8.0 APPENDIX 2: SITE PLAN



Location:	14A, Downshire Hill, London, NW3 1NR
Job Ref.:	56971
Survey Date:	11/11/2014
Scale:	1:150 @ A4

4 The Courtyards
Phoenix Square
Severalls Park
Wyncolls Road
Colchester
CO4 9PE
T: 01206 751 626

OCA UK Limited

By OCA Limited

9.0 APPENDIX 3: SITE PHOTOGRAPHS

Site Photographs

1. G1 Viburnum

2. T1 Ash and G1 Viburnum

3. T1 Ash and G1 Viburnum

Consulting Arboriculturists

Landscape Planning Limited
4 The Courtyards
Phoenix Square
Wyncolls Road
Colchester
Essex CO4 9PE

01206 752539

colchester@oca-arb.co.uk

www.oca-arb.co.uk