

ARBORICULTURAL ASSESSMENT REPORT

For:	Client:	Oriel Services Limited
	Insurer:	[REDACTED]
Site:	Policyholder:	[REDACTED]
	Risk Address:	11 Fawley Road, London, NW6 1SJ
Refs:	OCA Ref:	56369
	Client Ref:	7783239
	Insurer Ref:	8648023

Report By:	Dave O'Connell		
Title:	Arborist	Date:	16 th September 2014
Amended By:	Dave O'Connell		
Title:	Arborist	Date:	26 th March 2015



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 11 Fawley Road, London, NW6 1SJ (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 Reports dated July 2014

Updated Engineering Appraisal Report dated 23 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 the progression of an ongoing subsidence claim and we are aware of a previous history of subsidence at the property in 2001 and 2008, of which is discussed later in this report.

4.2 Foundations, geotechnical, and root identification

Factual geotechnical reports have described the below ground foundation design, soil and geotechnical conditions, and any root identification where available.

Site Investigation Report dated 23rd February 2009 (SI-1)

Foundations are described as being 1100mm below ground level at the front right.

Trial pit / borehole samples have been subject to laboratory analysis and the results of these tests indicate soils have a plasticity index ranging from 41% to 50%.

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

TP/BH1 (USF): Tilia, 6 roots. 4mm diameter

BH2 (to 2m): a conifer – too decayed to be more specific

Site Investigation Report dated 23rd June 2014 (SI-2)

Foundations are described as being 1100mm below ground level at the front steps.

Trial pit / borehole samples have been subject to laboratory analysis and the results of these tests indicate soils have a plasticity index ranging from 47% to 56%.

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

TP1 (USF): Pomoideae, 3 roots. 1mm diameter

BH1 (to 1.7m): Pomoideae 2 roots. 1mm diameter

Site Investigation Report dated 9th December 2014 (SI-3)

Foundations are described as being 1290mm below ground level at the front bay and 615mm at the rear bay.

Trial pit / borehole samples have been subject to laboratory analysis and the results of these tests indicate soils have a plasticity index ranging from 48% to 54%.

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

BH1 (to 2m): Ficus, 1 root, 1mm diameter

TP/BH2 (to 2m): Pomoideae, 5 roots, up to 6mm diameter

4.3 Monitoring results and other engineering evidence or advice.

The damage appears to be on-going subsidence to the property which was first discovered back in 2001 and repaired in 2004. Damage reappeared in 2008 and repaired 2010. This is now the 3rd time that the damage has returned.

The principal damage is similar to previous damage and takes the form of tapering diagonal cracking predominately to the front LH section of the building and has also spread to the whole flank elevation and also the rear LH corner.

The indicated mechanism of movement is downwards movement towards the front left corner and rear LH corner, both ends dipping downwards towards the street trees.

Crack width/level monitoring has been underway since June. In summary, the results to date show seasonal movement.

The principal damage [from the 2001 and 2008 claim] took the form of crack damage in the region of 1 mm – 2 mm in width throughout the property and within Flats A, B, F, C, D, communal areas of the left flank wall of the property.

The indicated mechanism of movement was a downwards to the front left corner of the building.

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.

Roots were recovered from TP1 (SI-1) and had been formally identified as Tilia and a Conifer. Given its size, species, and proximity to the location of the trial pit/borehole we consider that the Tilia roots have emanated from Lime T1.

There was no source of conifer roots present during the survey.

Roots have been recovered from TP1 (SI-3) and have been formally identified as Ficus. Given its size, species, and proximity to the location of the trial pit/borehole we consider that the Ficus roots have emanated from Fig T2.

Roots have been recovered from TP2 (SI-3) and have been formally identified as Pomoideae. Given its size, species, and proximity to the location of the trial pit/borehole we consider that the Pomoideae roots have emanated from Hawthorn T5.

There has not been a TP/BH located in a position where roots from Hawthorn T4 would be expected. However, due to the size, species and proximity to the insured property, it is likely that roots from Hawthorn T4 have also beneath the depth of foundations.

Roots have been recovered from TP1 (SI-2) and have been formally identified as Pomoideae. Given its size, species, and proximity to the location of the trial pit/borehole we consider that these roots have emanated from Pear T3. However, this tree alongside Virginia Creeper S1 & S2 is relatively small and maintained regularly and as such they will have a limited capacity for water use. Therefore we consider that any influence this vegetation may be having on soils beneath the property is likely to be negligible and as such do not consider them to be factors in the current damage.

Although roots from Privet G1 are also likely to extend beneath the level of foundations, due to their size and regular maintenance we do not believe these to be a significant contributing factor in current damage. We do however feel it sensible to recommend a reduction in height of Privet G1 to 2m, and maintaining at this height on an annual basis to reduce the risk of future subsidence. This has recently been trimmed but not reduced significantly.

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	Lime	Fell and grind stump
T2	Fig	Fell as close to ground level as practicable and treat stump
T4	Hawthorn	Fell and grind stump
T5	Hawthorn	Fell and grind stump

5.4 Recommended vegetation management to address risk of future subsidence:

Tree No:	Species	Works Required
G1	Privet	Reduce to 2m in height and maintain on an annual basis

6.0 STATUTORY CONTROLS

Camden Council has confirmed that no vegetation is subject to any Tree Preservation Orders but it has been confirmed that the property is within West End Green Conservation area.

7.0 APPENDIX 1: TREE TABLES

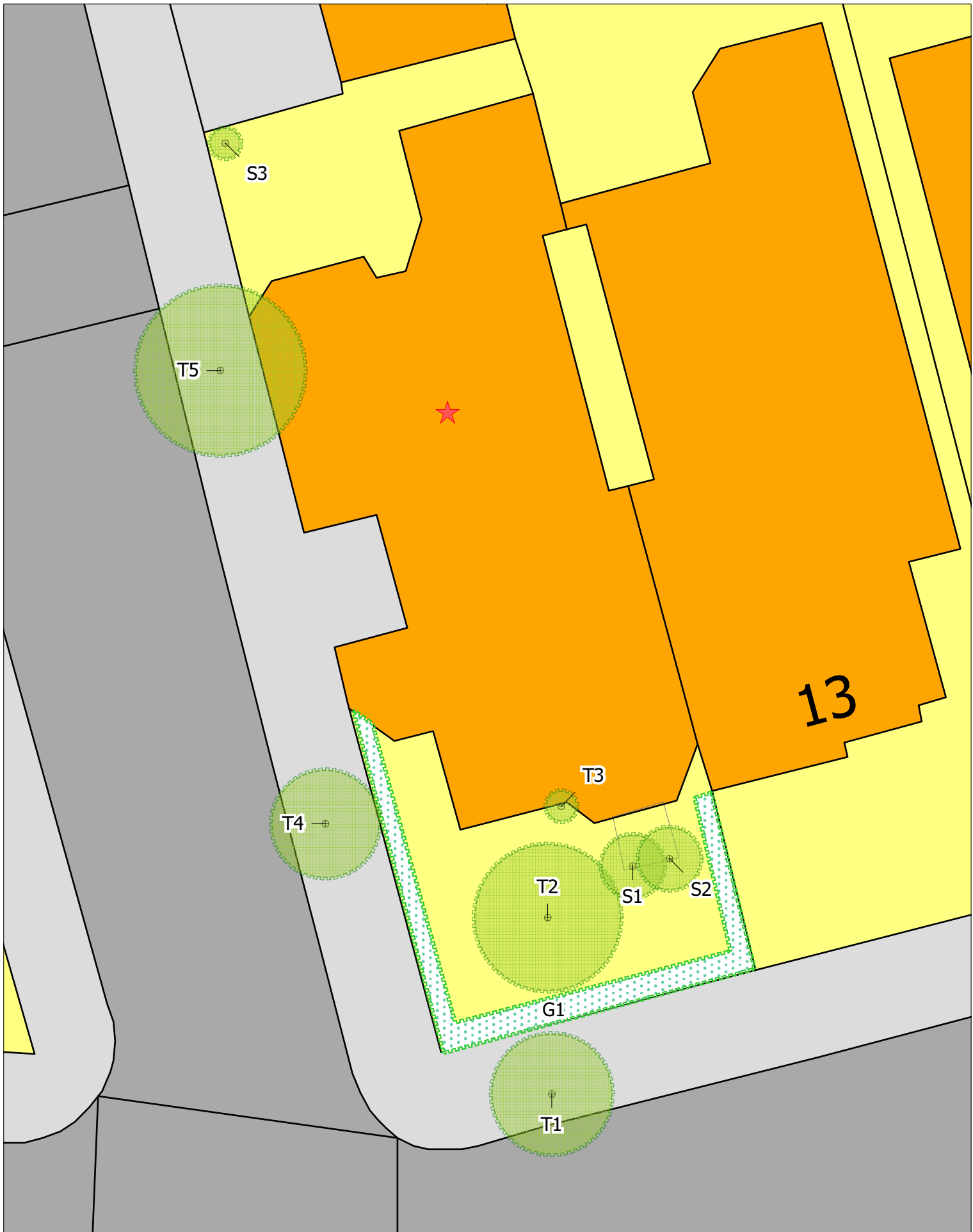
Age Class	YO – Young. SM – Semi-Mature. EM – Early Mature. MA – Mature. FM – Fully Mature. OM – Over Mature	Ownership	PH – Within boundary of risk address.
Condition	G – Good. F – Fair. P – Poor. D – Dead, Dying or Dangerous		P3P – Within boundary of third party properties. LA – Within land owned by a Local Authority. C3P – Commercial third party.
Stem Diameter	MS – Multi-stemmed tree		U – Within land of indeterminable ownership.



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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	Large-Leafed Lime	EM	P	8.7	3.8	500	7.8	Pollard. <1 year's regrowth.	Fell and grind stump	None		Camden Borough Council	LA
T2	Fig	SM	G	4.2	4.6	115	3.5	No significant past tree works	Fell and treat stump	N/A		11 Fawley Road, London, NW6 1SJ	PH
T3	Pear	YO	F	1.7	1	20	0.1	No significant past tree works	No work required.	N/A		11 Fawley Road, London, NW6 1SJ	PH
S1	Virginia Creeper	SM	F	5.1	2	20	0.1	No significant past tree works	No work required.	N/A	Climber located at foot of steps (1 of 2)	11 Fawley Road, London, NW6 1SJ	PH
S2	Virginia Creeper	SM	F	5.1	2	20	0.1	No significant past tree works	No work required.	N/A	Climber located at foot of steps (2 of 2)	11 Fawley Road, London, NW6 1SJ	PH
T4	Hawthorn	EM	F	4.8	3.4	170	2.3	Topped 1 years ago	Fell and grind stump	None		Camden Borough Council	LA
T5	Hawthorn	EM	F	6.8	5.3	250	4.1	No significant past tree works	Fell and grind stump	None		Camden Borough Council	LA
S3	Californian Lillac	EM	F	2	1	40	5.8	No significant past tree works	No work required.	N/A	All dimensions estimated due to no access to rear garden	11 Fawley Road, London, NW6 1SJ	PH
G1	Privet	SM	F	3	210	50	1.4	Trimmed regularly	Reduce to 2m and maintain on annual basis	None	G1 is used as a privacy screen	11 Fawley Road, London, NW6 1SJ	PH

8.0 APPENDIX 2: SITE PLAN



Location: 11 Fawley Road, London, NW6 1SJ
 Job Ref.: 56369
 Survey Date: 02/09/2014
 Scale: 1:150 @ A4

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9.0 APPENDIX 3: SITE PHOTOGRAPHS

Site Photographs



1. Lime T1 front left, Privet G1 behind



2. Fig T2 front centre



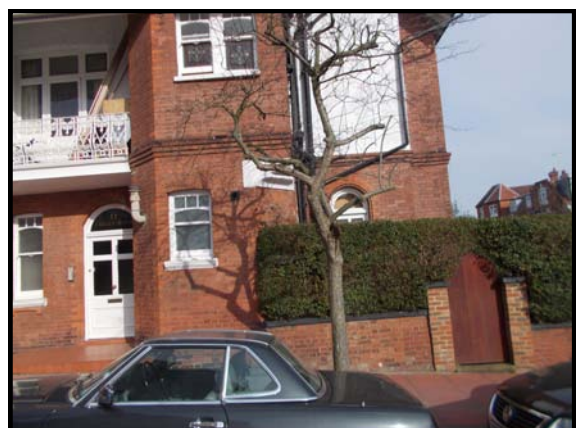
3. Pear T3 centre, Virginia Creeper S1 & S2 right



4. From left to right, Pear T3, Virginia Creeper S1 & S2, and Privet G1



5. Hawthorn T5 front left



6. Hawthorn T4 front centre, Privet G1 behind



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