# ARBORICULTURAL ASSESSMENT REPORT

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| **For:** | **Client:** | Oriel Services Limited |
| | **Insurer:** | Legal and General Insurers Limited |
| **Site:** | **Policyholder:** | [redacted] |
| | **Risk Address:** | 25 Frognal, London, NW3 6AR |
| **Refs:** | **OCA Ref:** | 70790 |
| | **Client Ref:** | 6724684 |
| | **Insurer Ref:** | D140903640 |

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|---|---|---|---|
| **Arborist Name:** | Thomas Peppiatt | **Date:** | 27/02/2018 |

OCA Insurance Services

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## 1.0 INTRODUCTION & BRIEF

**1.1** OCA Insurance Ltd has been instructed by Oriel Services Limited on behalf of the building insurers of 25 Frognal, London, NW3 6AR. We have been advised that the insured property has suffered differential movement and damage that is considered to have been caused by trees growing adjacent to the property influencing soils beneath its foundations.

**1.2** We have been instructed to undertake a survey of the vegetation growing adjacent to the insured property in order 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 to 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 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. As plants abstract water from the clay soil, the soil volume will "shrink" and "swell" during the summer 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, 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 14/02/2018:

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.

We have been informed by the engineer that there is not a heave risk to this property.

## 4.2 Foundations, geotechnical, and root identification

Report dated 18/02/2018:

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

Foundations are described as being 1500mm (TP1) & 950mm (TP2) below ground level.

Trial pit/borehole samples have been subject to laboratory analysis and the results of these tests indicate that soils have a plasticity index ranging from 14% in TP1 and 19% to 48% in TP2.

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

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| TH1 1600mm depth | Prunus spp and Tillia spp. |
| TH1 1800mm depth | Vitaceae spp and Tillia spp. |
| TH2 1000mm to 1500mmdepth | Leguminoseae spp. |

Although no rooting evidence has been found to implicate TG3, S1 and S2, we feel that, due to their size, location and species characteristics, this tree is considered to be rooting below foundation depth and should be removed as a current claim requirement.

The Prunus spp roots found in TH1 were found to be negative in starch. It is likely that these originate from a previously removed species, not related to the current claim damage.

# 5.0 CONCLUSIONS AND RECOMMENDATIONS

## 5.1 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.

## 5.2 Recommended vegetation management to address the current subsidence:

| Tree No: | Species | Works Required |
|---|---|---|
| T1 | False Acacia | Fell and treat stump |
| T2 | False Acacia | Fell and treat stump |
| S1 | Buddleia | Fell and treat stump |
| C1 | Vine | Fell and treat stump |
| T4 | Lime | Fell and treat stump |
| S2 | Buddleia | Fell and treat stump |
| TG3 | Bay Laurel | Fell and treat stumps |

# 6.0 STATUTORY CONTROLS

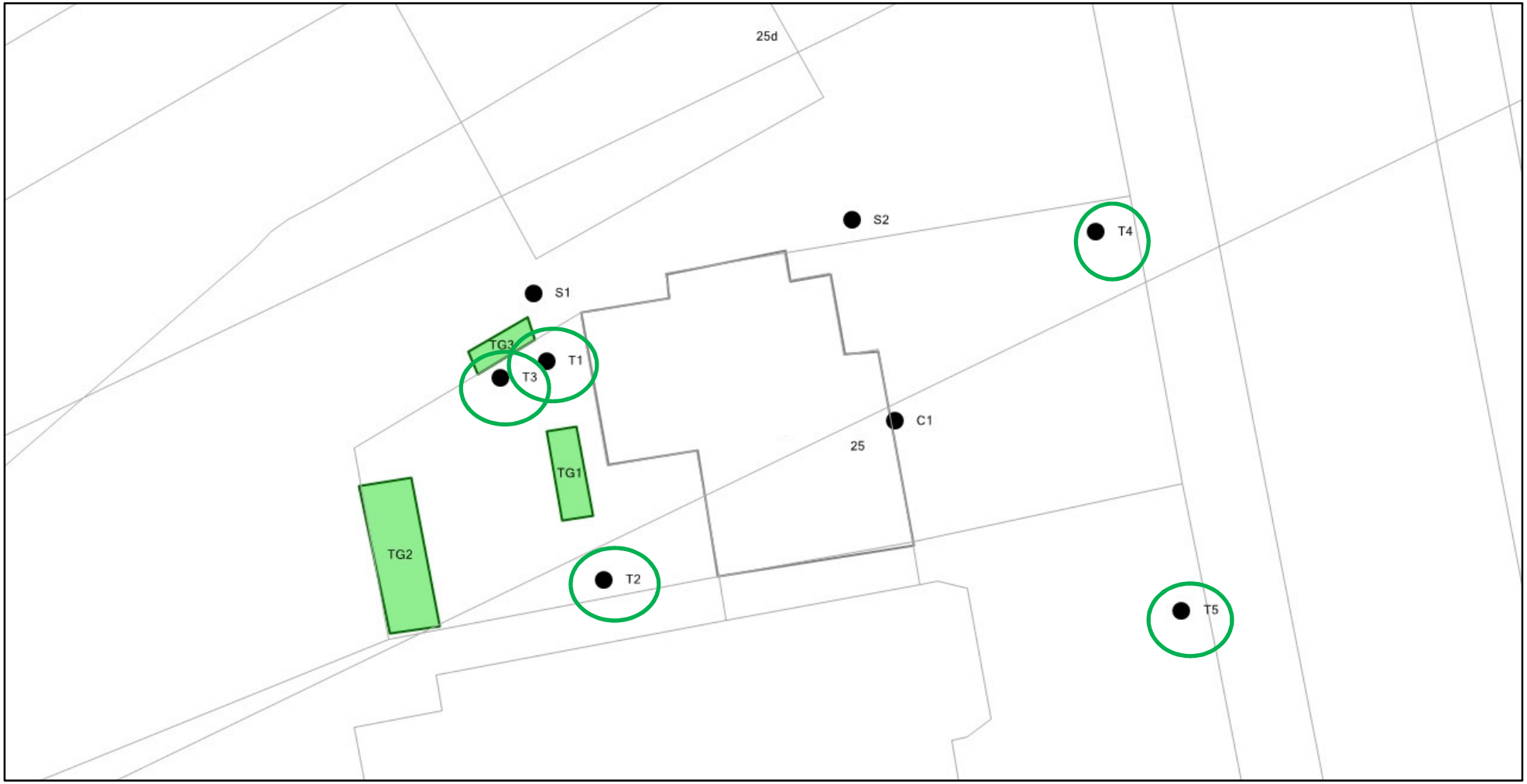
The London Borough of Camden has confirmed that the implicated Lime tree T4 is subject to a Tree Preservation Order. They have also confirmed that the properties are within a Conservation Area as well.

# 7.0 APPENDIX 1: TREE TABLES

| 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 | False Acacia | Mature | Fair | 14 | 6 | 310 | 2 | No significant recent management | Fell and treat stump | | | 25 Frognal, London, NW3 6AR | PH |
| T2 | False Acacia | Mature | Fair | 10 | 4 | 160 | 4 | No significant recent management | Fell and treat stump | | | 25 Frognal, London, NW3 6AR | PH |
| TG1 | Cabbage tree | Mature | Fair | 4.5 | 1.50 | 180 | 1.8 | No significant recent management | No work required | | x2 Cabbage trees | 25 Frognal, London, NW3 6AR | PH |
| TG2 | Mixed species group | Mature | Fair | 11.5 | 7.0 | 280 | 7 | No significant recent management | No work required | | x1 Cabbage tree, x2 Silver birch, x2 Walnut | 25 Frognal, London, NW3 6AR | PH |
| T3 | Silver Birch | Mature | Fair | 10 | 4 | 150 | 4.6 | No significant recent management | No work required | | | 25 Frognal, London, NW3 6AR | PH |
| TG3 | Bay Laurel | Mature | Fair | 10 | 4 | 80 | 3.5 | No significant recent management | Fell and treat stump | | x2 Laurel Bay | 25D Frognal, London, NW3 6AR | P3P |
| S1 | Buddleia | Mature | Fair | 6.5 | 6 | 180 | 3 | No significant recent management | Fell and treat stump | | | 25D Frognal, London, NW3 6AR | P3P |
| C1 | Vine | Mature | Fair | 4 | 4 | 80 | 0 | No significant recent management | Fell and treat stump | | | 25 Frognal, London, NW3 6AR | PH |
| T4 | Lime | Mature | Fair | 17 | 6 | 700 | 9 | No significant recent management | Fell and treat stump | | | 25 Frognal, London, NW3 6AR | PH |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S2 | Buddleia | Mature | Fair | 4 | 5.0 | 120 | 3 | No significant recent management | Fell and treat stump | | | 25D Frognal, London, NW3 6AR | P3P |
| T5 | Maple | Mature | Fair | 11 | 10 | 400 | 11.5 | No significant recent management | No work required | | | 23 Frognal, London, NW3 6AR | P3P |

# 8.0 APPENDIX 2: SITE PLAN

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|---|---|
| Location: | 25 Frognal, London, NW3 6AR |
| Job Ref: | 70790 |
| Survey Date: | 26/02/2018 - NTS |
| By OCA Insurance Limited<br>Crown copyright 2016. License number 100043594 | |

# 9.0 APPENDIX 3: SITE PHOTOGRAPHS

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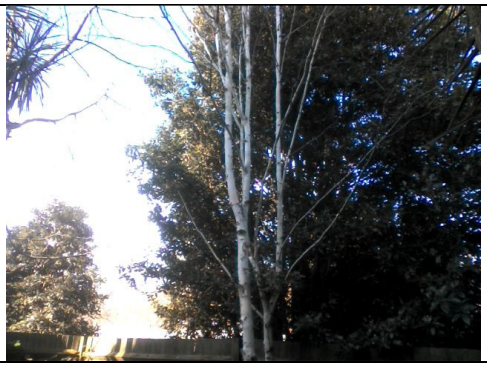
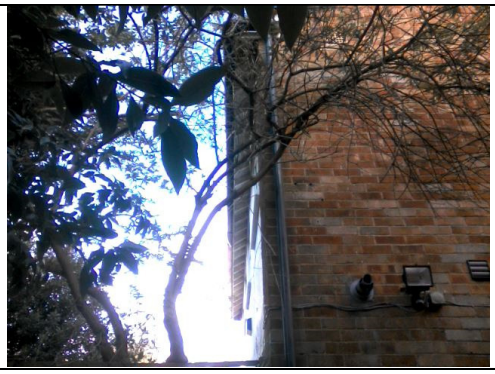
|---|---|
|  |  |
| T1 - False Acacia | T2 - False Acacia |
|  |  |
| TG1 - Cabbage tree | TG2 - Mixed species group |
|  |  |
| T3 – Silver Birch | TG3 – Bay Laurel |
|  |  |
| S1 - Buddleia | C1 - Vine |

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|---|---|
|  |  |
| T4 - Lime | S2 - Buddleia |
|  | |
| T5 - Maple | |


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