

ARBORICULTURAL ASSESSMENT REPORT

| | | |
|--------------|----------------------|---|
| For: | Client: | Oriel Services Limited |
| | Insurer: | Zurich Uk Commercial |
| Site: | Policyholder: | Freeways Personal Service |
| | Risk Address: | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN |
| Refs: | OCA Ref: | 69928 |
| | Client Ref: | 6455219 |
| | Insurer Ref: | CXG4432029 |

| | | | |
|-----------------------|-----------------|--------------|------------|
| Arborist Name: | Matthew Gardner | Date: | 31/05/2017 |
| QC: | William Argent | Date: | 31/05/2017 |



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1.0 INTRODUCTION & BRIEF

- 1.1** OCA has been instructed by Oriel Services Limited on behalf of the building insurers of Flat 7-10 Cliff Road studios. 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

Preliminary Engineers Report: 13th May 2016

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.

Monitoring has been advised.

The engineer has not commented on a heave risk.

A drain survey has not been completed.

4.2 Foundations, geotechnical, and root identification

Site Investigation Factual Report: 15th March 2017

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 550mm 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 23% to 51%.

Roots have been recovered from TP/BH1 and subjected to laboratory analysis and the results confirm:

| | | |
|------------|-------|---|
| TP/BH1:USF | 10mm | Acer spp. (Maple/Sycamore) |
| | 2mm | Choisya spp. |
| BH1:2300mm | 4mm | Acer spp. (Maple/Sycamore) |
| | 1.5mm | Leguminosae spp. (Laburnum/Wisteria/False Acacia) |

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 |
|----------|--------------|------------------------|
| T5 | Sycamore | Fell and treat stump. |
| T6 | False Acacia | Fell and treat stump. |
| H1 | Choisya | Fell and treat stumps. |

5.3 Recommended vegetation management to address health and safety risk:

| Tree No: | Species | Works Required |
|----------|---------|---|
| T8 | Pear | Fell close to ground level (approx 50mm). |

6.0 STATUTORY CONTROLS

London Borough of Camden has confirmed that the implicated vegetation is subject to Conservation Area controls.

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 | Bay | Early Mature | Fair | 8 | 2.8 | 400 | 2.5 | Recently Reduced | No work required. | | | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | PH |
| T2 | Birch | Early Mature | Fair | 12 | 8 | 310 | 9 | No significant past management. | No work required. | | | London Borough of Camden | LA |
| T3 | Birch | Early Mature | Fair | 12 | 8 | 270 | 9 | No significant past management. | No work required. | | | London Borough of Camden | LA |
| T4 | Cherry | Semi-Mature | Fair | 4 | 2 | 70 | 5 | No significant past management. | No work required. | Access through building | | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | PH |
| T5 | Sycamore | Mature | Fair | 17 | 13.0 | 560 | 3.4 | Recently Reduced | Fell and treat stump. | Access through building | | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | PH |
| T6 | False Acacia | Mature | Fair | 16.8 | 10 | 420 | 7.8 | Recently | Fell and treat | Access through | | Flat 7 - Flat 10, | PH |

| | | | | | | | | | | | | | |
|----|-------------|--------------|------|-----|------|-----|------|---|---|-------------------------|------------------------------------|---|----|
| | | | | | | | | Reduced | stump. | building | | Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | |
| T7 | Ash | Over Mature | Fair | 18 | 15.0 | 860 | 20 | No significant past management. | No work required. | Access through building | | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | PH |
| T8 | Pear | Mature | Poor | 14 | 7.0 | 570 | 16.5 | Recently Reduced. significant decay at base | Fell close to ground level (approx 50mm). | Access through building | | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | PH |
| T9 | Cherry | Mature | Fair | 5.8 | 6 | 200 | 6.5 | No significant past management. | No work required. | Access through building | . | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | PH |
| G1 | Mixed group | Early Mature | Fair | 3 | 10 | 20 | 1 | No significant past management. | No work required. | Access through building | Elder, Ivy, Ceanothious and Hazel. | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | PH |
| G2 | Mixed group | Early Mature | Fair | 3 | 10 | 20 | 1 | No significant past management. | No work required. | Access through building | Elder, Ivy, Ceanothious and Hazel. | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | PH |
| H1 | Choisya | Semi-Mature | Fair | 1.6 | 4.0 | 15 | 0.4 | Trimmed/Pruned regularly. | Fell and treat. | Access through building | . | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN | PH |

8.0 APPENDIX 2: SITE PLAN



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|--|---|
| Location: | Flat 7 - Flat 10, Cliff Road Studios, 5 Cliff Road, London, NW1 9AN |
| Job Ref: | 69928 |
| Survey Date: | 30/05/2017 |
| By OCA | |
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9.0 APPENDIX 3: SITE PHOTOGRAPHS



T5



T9 and G1



T8



T8



T6 and G2



T6



T1



T2 and T3



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