

Arboricultural Consultancy for Aviva

Note⁽¹⁾: This report is intended for use between the client, Marishal Thompson Group and any parties detailed within the report. It is based on the understanding at the time of visiting the property that Engineers are satisfied that damage is attributable to clay shrinkage subsidence exacerbated by vegetation.

1. Case Details

| | | | | | |
|--------------------|--------------------|-------------------|-----------------------------------|--------------------|------------------------|
| Insured | Mr Martin Jourdan | Address | 55 Shirlock Road, London, NW3 2HR | | |
| Client | Infront Innovation | Contact | Carl Daborn | Claim No. | IFS-AVI-ROF-13-0044640 |
| MT Ref | NL/2911130956/TP | Consultant | Thomas Peppiatt | Contact No. | 08702 416 180 |
| Report Date | 19/12/2013 | | | | |

Scope of Report: To survey the property and determine significant vegetation contributing to subsidence damage, make recommendation for remedial action and assess initial mitigation and recovery prospects. The survey does not make an assessment for decay or hazard evaluation.

2. Property and Damage Description

The insured structure is a 3 storey end-terrace house. It has been extended with a single-storey extension to the rear. The property occupies a level site with no adverse topographical features.

Damage is located throughout the insured dwelling. Please refer to the engineers report for a full description of the claim history and damage.

3. Technical Reports

In preparing our report we have had the benefit of the following technical investigations:

| | | | | | | | |
|---------------|-------------------------------------|--------------|-------------------------------------|-------------------|-------------------------------------|------------|-------------------------------------|
| Soil Analysis | <input checked="" type="checkbox"/> | Drain Report | <input checked="" type="checkbox"/> | Foundation Detail | <input checked="" type="checkbox"/> | Monitoring | <input checked="" type="checkbox"/> |
| Root Analysis | <input checked="" type="checkbox"/> | Borehole Log | <input checked="" type="checkbox"/> | Engineers Report | <input checked="" type="checkbox"/> | | |

4. Action Plan

| Mitigation | |
|--|-----|
| Insured Involved? | Yes |
| Local Authority involved? | Yes |
| Other third party Mitigation involved? | Yes |
| Recovery | |
| Is there a potential recovery action? | Yes |

| Tree Works | |
|--|--|
| Local Authority | Camden London Borough |
| TPO / Conservation Area / Planning Protection Searches | Insured: Conservation Area Third Party: TPO and Conservation Area |
| Additional Comments | |
| Awaiting Further Instructions. | |
| A potential recovery action has been identified. | |

5. Technical Synopsis

This report is based upon our understanding at the time of visiting the property that Infront Innovation engineers are satisfied that damage is due to clay shrinkage subsidence exacerbated by vegetation.

We have been instructed to advise on the causal vegetation and to deliver management proposals which will provide on-going and long term stability allowing repairs to be undertaken.

Site Investigations indicate that the foundations to the property extend to a depth of 700mm in TP/BH1 and 450mm in TP/BH2 and bear on to a substrate described as CLAY. NHBC chapter 4.2 (2010) categorises the supporting subsoil as being of HIGH plasticity, i.e. capable of volumetric change potential in response to moisture content.

Roots recovered from TP/BH2 have been formally identified as Lime spp. The most likely origin of the roots is T4 (Lime). Such circumstances confirms the potential for T4 (Lime) to influence soil volumes and to contribute to the damage observed.

Sample trial pits are generally small in size and the recovery of roots from such a small hole leads us to conclude that these will not

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be isolated roots.

There is currently no positive root identification to implicate T1 (Magnolia), C1 (Clematis), TG2 (Cypress), S1 (Bamboo), S2 (Rose), SG3 (Mixed species group), T6 (Magnolia) and T7 (Birch (Silver)) however, based on our assessment on site we consider that the footings of the subject property fall within the anticipated rooting zone of this vegetation.

Level monitoring has also confirmed a period of soil recovery over the winter months; this is consistent with the known influence of vegetation and confirms that defective drainage is not a material cause of the damage.

Where vegetation is involved it produces a characteristic seasonal pattern of foundation movement. No other cause produces a similar pattern. Level monitoring can demonstrate this pattern. If it is occurring soil drying by vegetation must be involved, unless the foundations are less than 300mm in depth.

A survey of the property's drainage system has been undertaken and no major defects were recorded.

Given the above information, results of site investigations, and when considered on balance of probability, the identified vegetation is considered causal. A program of vegetation management is therefore appropriate with a view to restoring stable conditions.

In assessing the potential drying influence of the vegetation on site, T4 (Lime) and T7 (Birch (Silver)) are considered the dominant feature and accordingly we have identified them as the principal cause of subsidence. T1 (Magnolia), C1 (Clematis), TG2 (Cypress), S1 (Bamboo), S2 (Rose), SG3 (Mixed species group) and T6 (Magnolia) are also considered to retain a contributory influence.

Please refer to Section 6 for management prescriptions.

Whilst we have given consideration to pruning as a means of mitigating the vegetative influence, this has been discounted.

Pruning is generally ineffective and in the context of the current claim we consider the above vegetation too large and close for pruning to be effective.

There is insufficient space to reasonably support a replacement planting at the exact location of proposed removals, although scope exists to replant elsewhere; an alternative location should be possible to find. Species selection should be appropriate for the chosen site and ultimate tree height should not exceed 75% of the available distance to built structures.

We recommend the efficacy of the management recommendations be qualified by means of further monitoring to confirm stability.

At the time of our survey it was not possible to ascertain the exact ownership of all vegetation. Further consultation with those involved and/or Land Registry searches may therefore be required to identify exact ownership.

| | |
|--|-----|
| Is vegetation likely to be a contributory factor in the current damage? | Yes |
| Is vegetation management likely to contribute to the future stability of the property? | Yes |
| Is replacement planting considered appropriate? | No |
| Would DNA profiling be of assistance in this case? | No |

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6.0 Recommendations

6.1 Table 1 - Current Claim Requirements

These recommendations may be subject to review following additional site investigations

| Tree No. | Species | Age Cat | Approx. Height (m) | Distance to Building (m) | Ownership | Action | Requirement |
|---|--|---------|--------------------|--------------------------|---------------------|--------|---|
| C1 | Clematis | 1 | 6 | 1.5 | C - Insured | Remove | Remove and grub out stump. |
| S1 | Bamboo | 1 | 3 | 1.5 | D - Unknown | Remove | Remove and grub out stump. |
| S2 | Rose | 1 | 2.3 | 0 | C - Insured | Remove | Remove and grub out stump. |
| SG3 | Mixed species group x1 Broom, x1 Rose. | 1 | 3 | 0 | C - Insured | Remove | Remove and treat stump to inhibit regrowth. |
| T1 | Magnolia | 1 | 4.5 | 1.4 | C - Insured | Remove | Remove and treat stump to inhibit regrowth. |
| T4 | Lime | 3 | 16 | 5 | D - Unknown | Remove | Remove and treat stump to inhibit regrowth. |
| T6 | Magnolia | 1 | 2.5 | 1.5 | C - Insured | Remove | Remove and treat stump to inhibit regrowth. |
| T7 | Birch (Silver) | 1 | 12.5 | 5.6 | B - Local Authority | Remove | Remove and treat stump to inhibit regrowth. |
| TG2 | Cypress | 1 | 7 | 4 | D - Unknown | Remove | Remove. |
| Age Cat: 1 = Younger than property; 2 = Similar age to the property; 3 = Significantly older than property | | | | | | | |

6.2 Table 2 - Future Risk Recommendations

| Tree No. | Species | Age Cat | Approx. Height (m) | Distance to Building (m) | Ownership | Action | Requirement |
|---|---|---------|--------------------|--------------------------|-------------|-----------------------------|--|
| SG1 | Mixed species group Including Laurel. | 1 | 2 | 2 | C - Insured | Action to avoid future risk | Do not allow to exceed current dimensions. |
| SG2 | Mixed species group Including Ivy and Rose. | 1 | 2.5 | 0.8 | D - Unknown | Action to avoid future risk | Reduce and maintain at 1.5m height. |
| SG4 | Mixed species group x1 Forsythia, x1 Rose, x1 Prunus. | 1 | 2.5 | 2.3 | C - Insured | Action to avoid future risk | Do not allow to exceed current dimensions. |
| T2 | Magnolia | 1 | 4.5 | 4.5 | C - Insured | Action to avoid future risk | Do not allow to exceed current dimensions. |
| T3 | Acer | 1 | 4.8 | 6.4 | C - Insured | Action to avoid future risk | Do not allow to exceed current dimensions. |
| T5 | Ash | 1 | 9.5 | 12 | D - Unknown | Action to avoid future risk | Do not allow to exceed current dimensions. |
| TG1 | Mixed species group Including Magnolia and Quince. | 1 | 4.5 | 6.5 | C - Insured | Action to avoid future risk | Do not allow to exceed current dimensions. |
| Age Cat: 1 = Younger than property; 2 = Similar age to the property; 3 = Significantly older than property | | | | | | | |

* Estimated

Third party property addresses should be treated as indicative only, should precise detail be required then Marishal Thompson can undertake Land Registry Searches

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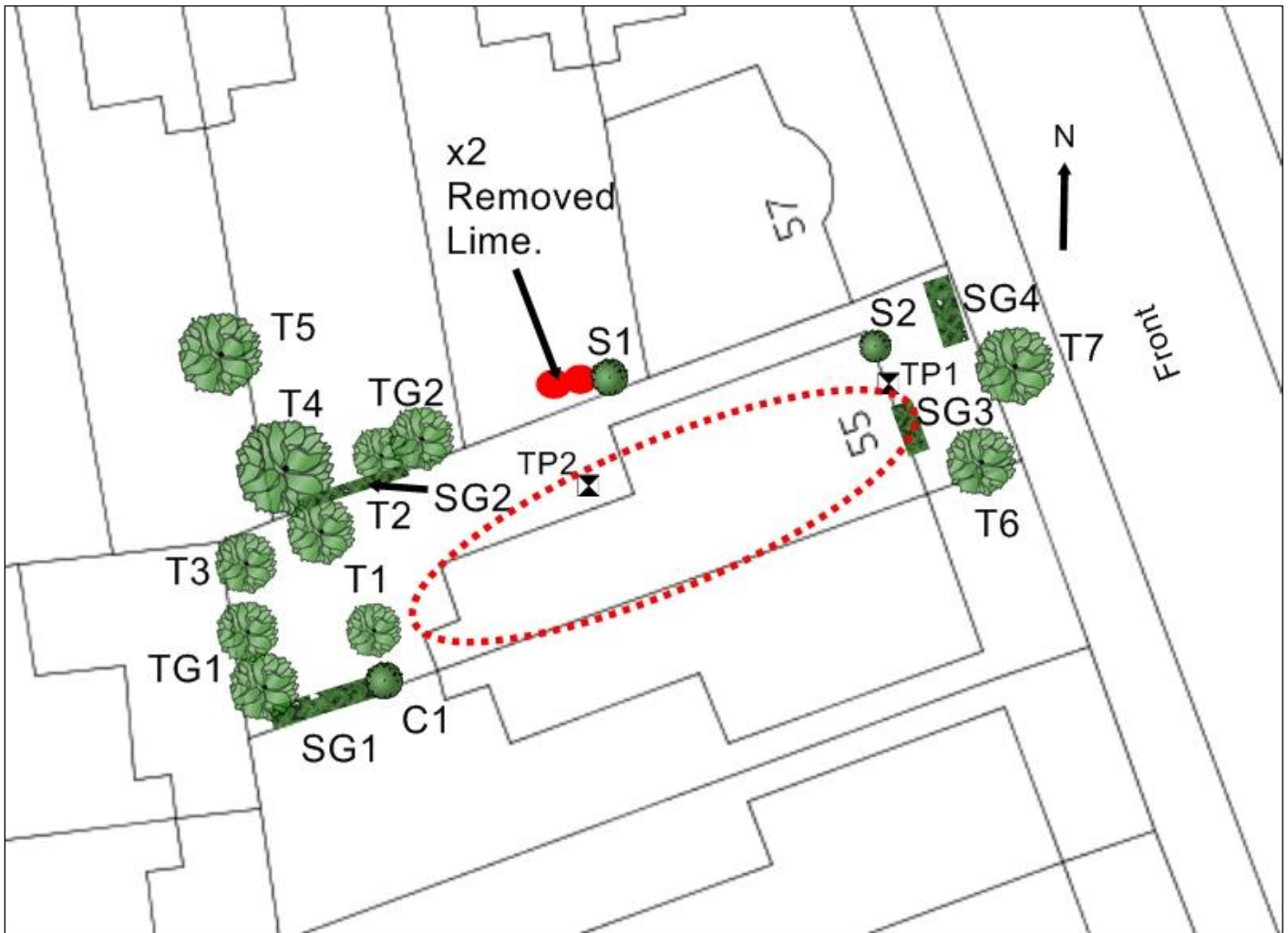
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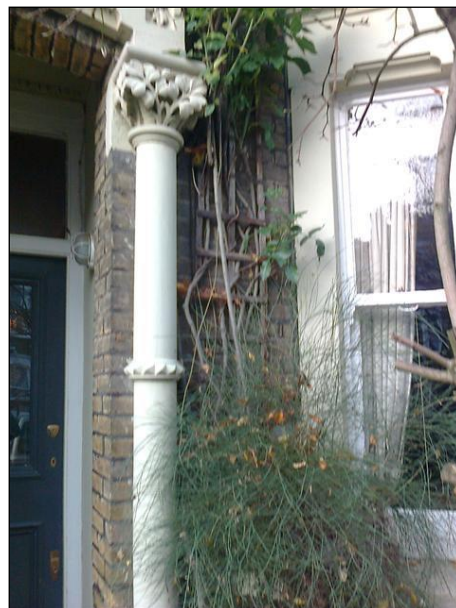
7. Site Plan



Please note that this plan is not to scale. OS Licence No. 100043218

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8. Photographs



SG3 - Mixed species group



T6 - Magnolia



T7 - Birch (Silver)

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TG1 - Mixed species group



T3 - Acer



T2 - Magnolia



T4 - Lime

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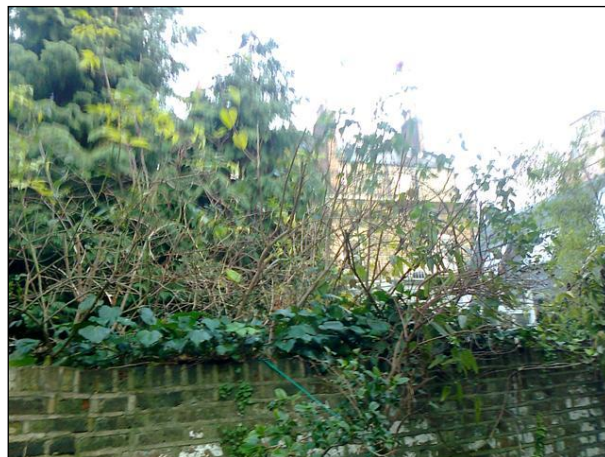
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TG2 - Cypress



SG2 - Mixed species group



S1 - Bamboo



SG4 - Mixed species group