Innovation Group

Addendum Report

On behalf of **Sheilas Wheels**

Report Date: 20 Jan 2020

[redacted]

Risk Address: 59 Hillway, London, N6 6AD

[redacted]

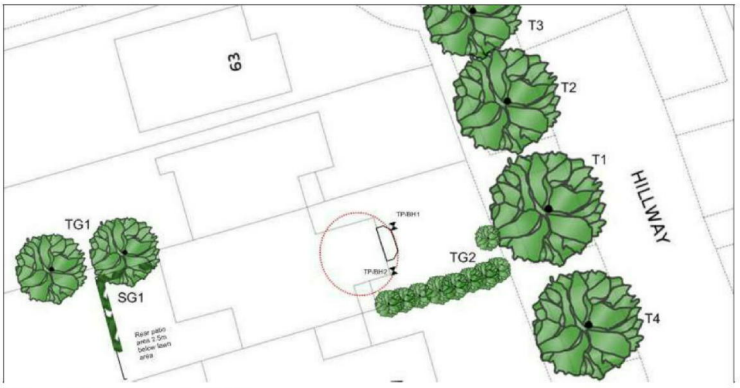
CLAIM HISTORY

We refer to our previous reports and correspondence.

The property is a three storey detached house of traditional construction and has 4 bedrooms.

Date of Construction	1927
Purchased	2016
Policy Inception Date	17 April 2015
Damage First Noticed	01 August 2018
Claim Notified To Insurer	07 August 2018
Date of our Inspection	30 August 2018

The site slopes down from right to left and there is an upward slope to the front elevation. There is a row of mature Lime trees along Hillway under the control of Holly Lodge Estates and approximately 10m from the front elevation – see site plan below.



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

Reference to the 1:50,000 scale British Geological Survey suggests there is no superficial geology recorded and underlying bedrock geology is on the border between Claygate Member and London Clay.

When Mr Alderton first noticed damage, in Aug 2018, he obtained a report from a firm of local consulting engineer, HNL and copy of the report prepared by David Broom BSc (Hons) CEng MICE is attached as Appendix A. David Broom concluded the damage was the result of subsidence;

...it is reasonable to infer that the subsidence has been caused by desiccation of the shrinkable clay subsoil influenced by the moisture demands of trees situated to the front of the property.

Following receipt of the report Mr Alderton contacted his insurers who appointed Innovation Group to deal with the claim.

[redacted]

DAMAGE

There are two distinct areas of damage;

- To the front of the property including the driveway.
- To the retaining wall steps leading to the raised lawn in the rear garden.

The damage is fully detailed in the HNL report (see appendix A). The damage to the rear retaining wall is unrelated to the Lime trees at the front and is not considered further in this report.

The damage to the front indicates rotational movement towards the row of Lime trees. The damage comprises cracking up to 3mm wide and would be classified as 'aesthetic' in accordance with BRE Digest 251 *Assessment of damage in low-rise buildings.*

SITE INVESTIGATIONS

A site investigation was carried out in Oct 2018 (attached with the Arboricultural Report as Appendix B).

The investigation comprised two trial pits and boreholes one to the front bay and the second to the side of the front projection. These confirmed that the foundations are a concrete strip footing bearing at between 900mm and 1000mm below ground level on to a soft to firm, silty CLAY. The clay has a Plasticity Index between 30% and 37% indicating a medium shrinkage potential.

The Oedometer results suggest desiccation to about 2.4m below ground level. To elaborate, the laboratory re-compact the retrieved soils and load them to their *in-situ* stress. Water is introduced to the sample and the free surface swell is measured. This has many advantages over other soils tests (suctions and moisture contents included) because it measures directly the swell that is taking place, rather than attempting to use a proxy measure and inferring the results. Strains in excess of 0.010 are usually indicative of root induced desiccation. Clay soils can sustain strains of up to 0.1 (and possibly more in exceptional cases) where there are tall, healthy trees. In this case, the maximum recorded strain is 0.017 which we believe is indicative of 'moderate' root induced desiccation.

0 – 0.005	0.005 – 0.01	0.01 – 0.025	0.025 – 0.05	0.05 – 0.1
very slight	Slight	moderate	severe	very severe

TABLE 1
Reproduced and Modified from B.R.E. Digest 412 - Categories of Desiccation – to Categorise Strains

Roots were found to a depth of 1.3m and these were identified as:

- Tilia (Lime)
- Viataceae (creeper) in poor condition and little starch – probably from vegetation that has been removed.
- Cupressaceae (Cypress)

The roots appear to emanate from the nearby Lime and Italian Cypress trees.

[redacted]

ARBOROCULTURAL REPORT

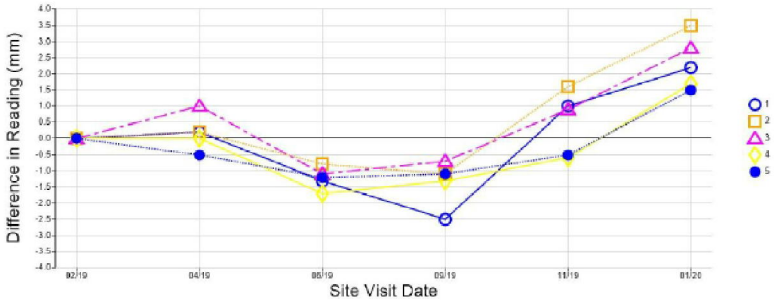
An arboricultural report was carried out in Oct 2018. This recommended the removal of the nearest Lime tree T1 and three Italian Cypress trees closest to the building.

Given their relative sizes the Arboriculturalist considers the Lime tree T1 to be the dominant tree implicated in the damage.

The three Cypress trees have been removed and T1 was reduced by HLE as part of routine pruning work in about Nov 2018.

MONITORING

Despite the pruning work the level monitoring continues to show pronounced seasonal movement with the building moving down, as the soil is desiccated and shrinks through the action of the Lime tree and then recovering over the winter period (after leaf fall).



[redacted]

DISCUSSION

The initial inspection suggested the damage was indicative of rotational subsidence movement towards the row of Lime trees in the pavement out the risk address.

Subsequent site investigations show the foundations bear on to a clay subsoil with a medium shrinkage potential. Roots were found beneath the foundations and these have been identified and Tilia and Cupressaceae and appear to emanate from the nearby Lime and Italian Cypress.

An Arboriculturalist recommended removal of the Lime tree T1 (considered to be the dominant tree) and removal of three Cypress. The Cypress trees have been removed but the Lime has been pruned rather than removed.

The subsequent level monitoring (following the pruning work) continues to show a clear pattern of seasonal movement suggesting the pruning work has been ineffective.

RECOMMENDATIONS

Given the circumstances and the failure of the pruning work to effectively mitigate the nuisance and damage caused by the Lime tree we consider the only effective solution is to fell the tree.

If this application to fell is refused, we would have to look at an engineering solution to stabilise the property either by the construction of a root barrier or through underpinning. While quotations for this work have not been obtained, it is envisaged these costs would be in the region of £30,000.

Richard Rollit BSc (Hons) MBA CEng MICE ACILA
Subsidence Director
Innovation Group

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APPENDIX A HNL REPORT

102434 - 59 Hillway ESI Report.pdf

APPENDIX B ARBORICULTURAL AND SITE INVESTIGATION REPORT

59 Hillway SI COMPLETE 18.10.18.

APPENDIX C LEVEL MONITORING

59 Hillway LEVEL MONITORING 03.01.

[redacted]