SITE INVESTIGATION SUMMARY

Section 1. INITIAL DETAILS

Policyholder Name:	Mrs A Gaskin	**Date of Validation:**	25-05-23
360 Reference:	LIV-SN-22-006091	**Completed By:**	James Reeves

SUMMARY OF RESULTS

(Please summarise the results of the investigations in a format that can be used and understood by the claims handler)

PLEASE ENSURE WE STATE THE "PRIMARY" CAUSE OF THE SUBSIDENCE

Trial pit/borehole 1 (left-hand side of the front elevation)

The trial pit has confirmed that this section of the property is founded on a concrete foundation which is 1,000mm deep, 400mm thick, with a 250mm projection.

From 1.00m to 1.50m, the ground was described as firm brown clay. The insitu shear vane testing results confirmed the ground to be firm in this soil banding level. From 1.50m to the borehole termination depth of 4.00m, the ground was described as firm/stiff brown clay with some chalk. The insitu shear vane testing results confirmed the ground to be firm in this soil banding level. The borehole had to be terminated at 4.00m due to a layer of bedrock being encountered.

Multiple tree roots from the Rosoideae family were found from 0.90m to 2.40m below ground level, however, these roots were found to be very decayed.

Trial pit/borehole 2 (right-hand side of the rear elevation)

The trial pit has confirmed that this section of the property is founded on a concrete foundation which is 1,000mm deep, 700mm thick, with a 200mm projection.

From 1.00m to 1.50m, the ground was described as firm brown clay. The insitu shear vane testing results confirmed the ground to be firm in this soil banding level. From 1.50m to the borehole termination depth of 4.00m, the ground was described as firm/stiff brown clay with some chalk. The insitu shear vane testing results confirmed the ground to be firm in this soil banding level. The borehole had to be terminated at 4.00m due to a layer of bedrock being encountered.

Trial pit / borehole 3

This was sunk to the rear of the garage, to a depth of 2.9 metres, which confirmed the foundations to be 0.5 metres deep, sitting on a concrete footing. The soil descriptions were described as being firm CLAY with some medium gravel (inc. chalk). Roots were discovered from the nearby vegetation FRAXINUS (Ash) and ACER (Maple, Sycamore) to a depth of 1.9 metres. No ground water was struck during the investigation and the borehole remained dried on completion. At 2.9 metres below ground level the operatives encountered an obstruction reported as sandstone which prevented further penetration with the auger.

Trial pit / borehole 4

This was sunk to the rear left corner of the house, to a depth of 2.2 metres, which confirmed the foundations to be 1.0 metres deep, sitting on a concrete footing. The soil descriptions were described as being firm CLAY with some medium gravel (inc. chalk). Roots were discovered from the nearby vegetation FRAXINUS (Ash) and ACER (Maple, Sycamore) to a depth of 1.7 metres. At 2.2 metres below ground level the operatives encountered an obstruction reported as chalk which prevented further penetration with the auger.

Laboratory testing suggests moisture depletion evident at the time of sampling in TP/BH3 and 4 at depths beyond normal ambient soil drying processes such as evaporation indicative of the soil

drying effects of vegetation. Precise level monitoring results are also supportive of a pattern of foundation movement attributed to the drying effects of vegetation. As the clay soil has adequate load-bearing capacity, we are satisfied that the moisture demand of the vegetation has caused the subsidence to occur.

Drainage Survey

No visible defects were noted to the underground drainage system.

Summary

We are satisfied that the site investigation has confirmed that the damage to the property has occurred due to tree-root induced clay shrinkage subsidence.

The borehole data has shown the presence of a firm clay soil beneath the foundation of the property in both investigation areas, albeit, limited root evidence was gathered. This is not a surprise however, given the narrow diameter of the borehole, meaning sometimes roots can be missed, even if they are close to the excavation area.

Given the timing of the damage, we are confident that excessive clay shrinkage has been caused by the surrounding, which has allowed for some slight downward movement of the foundation to occur.

Additional investigations have been undertaken to provide sufficient evidence to support a TPO application for the removal of the Domestic Third Party (DTP) 2 (Smith) trees where their own Arboricultural Consultant as made recommendations for the removal of T1 – Field Maple, T2 Ash and T4 Sycamore in the spirit of good neighbourliness and Mr Smith's desire to assist Ms Gaskin in resolving the damage at her property.

SI's have identified firm clays with low to high plasticity, desiccated soils and roots positively implicating the trees identified by the neighbours arborist.

Ongoing level monitoring readings at point 10 (rear left corner of main property) are supportive of movement attributed to a vegetative influence.

In order to abate any further movement from occurring, some vegetation mitigation works are going to need to be undertaken.

An arborist was instructed who recommended the removal of W1 - Remove (fell) Oak, Ash and Field Maples stems within 20.0m of the building. TG1 & SG1 & the reduction of HG1.

Monitoring has been ongoing from 22/04/2023 to 05/01/2024 with downward movement shown during the warmer months and recovery during the colder months.