



Policyholder: [REDACTED]

Subject Property Address:

64 Thistle Road
Hedge End
SOUTHAMPTON
Hampshire
SO30 0TT

INSURANCE CLAIM

CONCERNING SUSPECTED SUBSIDENCE

ENGINEERING APPRAISAL REPORT

This report is prepared on behalf of [REDACTED] for the purpose of investigating a claim for subsidence. It is not intended to cover any other aspect of structural inadequacy or building defect that may otherwise have been in existence at the time of inspection.

Date: 26/05/2023

INTRODUCTION

The technical aspects of this claim are being overseen by our Building Consultant Sarah Granlund BSc (Hons) Grad IEMA Cert CIL A Cert CII, in accordance with our Project Managed Service.

1.1. Description of building

The main property is a detached house constructed circa 1985 in a residential estate location on a plot that is considered generally to be level.

The property also has an attached garage to the front left which was extended upward to first floor level. The junction and extended first floor areas are the primary subject of the claim.

1.2. Discovery of damage

The policyholder first discovered the damage in 2018. The damage was only slight at that time and therefore, the property was monitored under the direction of a Structural Engineer. The monitoring demonstrated cyclical movements with the cracking more evident during the summer months. A claim for original damage was made to insurers in October 2020.

Following repairs and claim completion in April 2021, the policyholder noted damage occurring again in the same areas as before after the dry summer of 2022 and notified insurers of the damage in August 2022.

Nature and extent of damage

- i. Description and Mechanism: The main area of damage is to the Junction of main property and garage / extension projection. This pattern of cracking indicates a mechanism of differential foundation movement of the front and rear.
- ii. Significance: The level of damage is slight, and is classified as category 2 in accordance with BRE Digest 251 - Assessment of damage in low-rise buildings.
- iii. Onset and Progression: Mr & Mrs Meads advised that damage originally commenced during the event year of 2018. The damage reappeared during the event year of 2022. We consider that the current damage has occurred recently.

The movement will be of a cyclical nature with cracks opening in the summer and closing in the winter.

2. SITE INVESTIGATIONS

A site investigation was carried out by Auger in March 2023 to confirm the cause of damage. The investigation comprised of one trial hole and one remote borehole. The trial hole was located to the mid-left flank and the borehole within the grassed area of the rear garden.

The results of the site investigation confirm that the property is built off very stiff gravelly silty CLAY.

The trial hole was excavated to the target depth of 3000 mm below ground level (BGL). This exposed the foundation and confirmed this to be comprised of brickwork to 800 mm BGL, underlain by a 800 mm thick concrete strip to a total depth of 1600 mm BGL.

The foundation was seated onto a moist, very stiff brown fine-to-medium gravelly silty CLAY.

In-situ shear vane testing confirmed values of 95 kPa at the foundation underside, with increasing stiffness with depth, recording values of 121 kPa at the base of the borehole.

No roots were noted at the underside of the foundation.

A remote borehole was sunk through the rear lawned area, achieving a target depth of 3000 mm BGL. The soil composition was recorded from 1600 mm BGL as moist, very stiff brown fine-to-medium gravelly silty CLAY.

In-situ shear vane testing confirmed values of 95 kPa at 1600 mm BGL, with increasing stiffness with depth, recording values of 150 kPa at the base of the borehole.

Roots were encountered at 1600, 2100 and 2600 mm BGL.

Soil and root samples were bagged and taken off-site for laboratory analysis.

All soil samples were confirmed to be pure CLAY (> 95% passing the 0.425 mm sieve).

Moisture contents of the samples extracted from trial hole 1 ranged from 22 to 23%. Atterberg tests confirmed the CLAY to be intermediate to high plasticity and of medium volume change potential (VCP).

Moisture contents of the samples extracted from the remote borehole ranged from 26 to 30%. Atterberg tests confirmed the CLAY to be high plasticity and of medium-to-high VCP.

Roots recovered from the borehole were anatomically analysed with 16 roots identified as *Quercus* spp. which are oaks; one root was too decayed for identification.

The roots were tested for starch, and this returned a negative result indicating that they were dead at the time of testing. This result however does not necessarily reflect the state of the parent tree.

A survey of proximate drainage services was also undertaken, which confirmed no defects which could be allowing water to escape into the soils below foundation level.

3. MONITORING

Level monitoring has been initiated however, the results are in their infancy and no conclusions can be drawn from them at this time.

The level monitoring will continue bi-monthly, and results assessed as they are received.

4. CONCLUSIONS

4.1. Cause of Subsidence

Based on the information detailed above, we are of the opinion that damage has occurred due to clay shrinkage subsidence. This has been caused by moisture extraction by roots altering the moisture content of the clay subsoil, resulting in volume changes, which in turn have affected the foundations.

4.2. Recommendations

4.2.1 Mitigation:

We consider the damage will not progress if appropriate measures are taken to remove the cause. In this instance it is likely that vegetation for which the Local Authority is responsible is contributing toward the cause of damage.

The lack of roots found below foundation level of the property could be considered a hindrance to progression however, with shrinkable clay soil confirmed and good foundation depth, if cyclical movement is evidenced by the level monitoring, this satisfies the balance of probabilities test in regard to evidencing causal factors, and that the oak trees to the rear are an effective cause of the movement.

Consideration may need to be given to a further site investigation should the Local Authority be resistant to removal.

4.2.2 Repair:

We have not yet decided on the final type of repair required but have produced an outline of the most likely requirements. This involves undertaking superstructure repairs and redecoration. This decision has been taken based on our knowledge and experience of dealing with similar claims.

On behalf of Sedgwick International UK

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Building Consultant

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