

Cunningham Lindsey t/as Sedgwick



Subject Property Address:

221 Goldhurst Terrace
LONDON
NW6 3EP

INSURANCE CLAIM

CONCERNING SUBSIDENCE DAMAGE

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: 31/08/2018

Cunningham Lindsey [REDACTED]





INTRODUCTION

Technical aspects of this claim are being overseen by our Building Consultant, Gavin Catheline, in accordance with our project managed service.

DESCRIPTION OF BUILDING

The subject property is a mid terrace house constructed in approximately 1890 in a mature residential area on a plot that is generally level.

The claim concerns damage to the front two storey bay window.

CIRCUMSTANCES OF DISCOVERY OF DAMAGE

The policyholder and homeowner, [REDACTED], first discovered the damage in October 2017.

The damage was discovered by the buildings maintenance manager during a routine visit to the property. He then sought advice from a structural engineer.

NATURE AND EXTENT OF DAMAGE

Description and Mechanism

The principal damage takes the form of vertical and diagonal tapered cracking between bay window and main house.

The indicated mechanism of movement is downward towards the front.

Significance

The level of damage is moderate, and is classified as category 3 in accordance with BRE Digest 251 - Assessment of damage in low-rise buildings.

Onset and Progression

[REDACTED] has advised that damage first commenced in Summer 2017.

We consider that the crack damage has occurred recently, but that distortions are historic.

It is likely that movement will be of a cyclical nature with cracks opening in the summer and closing in the winter until the necessary mitigation measures are undertaken to address the cause of damage.



SITE INVESTIGATIONS

Reference to the solid and drift geological survey map shows the anticipated subsoil as London clay.

The ground investigation was carried out by CET Property Assurance Ltd on 25th April 2018, for details of the trial pit and borehole locations, together with test results, please refer to the attached CET factual report.

Trial Pit 1/Borehole 1 was excavated adjacent to the front right corner of the front bay window. The trial pit extended to a depth of 1200mm below ground level but the foundation depth was not determined. The brick wall continues to a depth of 1200mm indicating that the foundations are in excess of this depth.

Borehole 1 was put down to the rear of the trial pit and this revealed that the subsoil in this area is a stiff silty clay material. The clay subsoil extends throughout the borehole to a depth of 5000mm below ground level. Live roots were found within the subsoil samples to a depth of 2200mm below ground level.

A remote borehole was put down in the rear garden for soil comparison purposes and this revealed the same clay subsoil to a depth of 5800mm below ground level but no roots were observed in this borehole.

The clay subsoil samples were sent to a laboratory for testing and have been found to be of high and very high plasticity index, meaning that the material is very susceptible to movement due to shrinkage and swelling with variations in moisture content.

Samples of roots taken from borehole 1 have been analysed and originate from an Acer / Sycamore tree. There is a Sycamore tree located in the front garden of the property which is the responsibility of the policyholder. This tree is subject to Local Authority Statutory Controls.

The site investigation results confirm the presence of a highly shrinkable clay subsoil which was found to be significantly drier in the area of damage compared to that of the remote borehole in the rear garden. Furthermore, the site investigations have confirmed the presence of roots from the nearby Sycamore tree in the subsoil within the area of damage to the property.

No drainage Investigations have been undertaken as the drains are a significant distance from the area of damage and the site investigation has shown the soil to be dry which suggests the drains have not adversely affected the soils.



MONITORING

Crack width and level monitoring has been underway since May 2018.

Results of the crack width/level monitoring carried out to date are attached in table/graphical format together with a plan showing the location of the monitoring studs within the insured property.

In summary, the results to date show downward movement towards the Sycamore tree in the front garden. This downward movement was recorded during drier weather conditions indicative of clay shrinkage subsidence exacerbated by the increased moisture demands of the Sycamore tree.

CAUSE OF DAMAGE

Taking an overview of all the site investigation and monitoring results referred to above, it is my opinion that the cause of damage results from clay shrinkage subsidence brought about by the action of roots from the Sycamore tree located in the front garden of the risk address.

I base this view on the fact that the foundations of the property in the area of damage have been built bearing onto shrinkable clay subsoil. The soil is susceptible to movement as a result of changes in volume of the clay with variations in moisture content and analysis of the site investigation results indicates that the soil has been affected by shrinkage. Sycamore tree roots are present in the clay subsoil beneath the foundations. In this case, I am satisfied that the damage has therefore been caused by clay shrinkage subsidence following moisture extraction by the Sycamore tree.

RECOMMENDATIONS

It is recommended that the Sycamore tree located in the front garden and close to the property is removed to mitigate against further movement. The Mitigation Centre of Oriel Services Ltd will liaise with the Local Authority in this regard.

Crack width/level monitoring will continue after removal of the tree in order to check for stability. A detailed scope of repairs will be finalised upon conclusion of the monitoring.

HEAVE ASSESSMENT

I have assessed whether significant heave/ground recovery will occur should the vegetation as referred to above be removed.

I conclude that this is not the case as no desiccation has been found in the soil samples. The reason for the lack of desiccation is that the clay subsoil has rehydrated over the wetter winter months such that the moisture deficit that would have existed last summer has been replenished, and equilibrium moisture content has returned. Consequently, as there is no desiccation then there cannot possibly be any heave/swelling of the clay subsoil.



In summary, based on the site investigation results, the timing of the investigation and the nature and extent of damage within the property, I have concluded that significant heave and/or ground recovery will not occur should the vegetation management described above be undertaken.

REPAIRS

If the Sycamore tree is removed then I consider that works including structural crack repair and redecoration at an approximate cost of £10,000 will be appropriate in order to repair the damage in this case.

If the Sycamore tree is not removed then it may be necessary to consider underpinning of the foundations of the property in the area of damage, in addition to structural crack repair and redecoration needed to repair the damage. The total cost of this option is estimated at £50,000.

For Cunningham Lindsey:

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Building Consultant

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Senior Claims Technician

