

Cunningham Lindsey

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Policyholder: [REDACTED]

Subject Property Address:

11, Fawley Road

London

NW6 1SJ

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: 23/12/2014

Cunningham Lindsey Ref: MNHPD/KL/7182491

INTRODUCTION

This report has been prepared by our Building Consultant Mr Yiu-Shan Wong BSc ACIAT C.Build E MCABE MCIQB RMaPS Cert CII, and is being investigated in accordance with our Project Managed Service.

Unless stated otherwise all directions are referred to as looking towards the front door from the outside the property.

DESCRIPTION OF BUILDING

The subject property is a semi detached house converted into flats in a residential estate location on a plot that is level.

The general layout of the site is shown on the attached sketch plan.

There are trees within influencing distance of the property. This includes a Local Authority Lime tree approximately 10m in height and only 8m distance away from the building. There are also 2 No Hawthorn trees situated within Honeysuckle Road also owned by the Local Authority, one situated on the flank elevation and the other towards the rear of the risk address.

DISCOVERY OF DAMAGE

The damage appears to be on-going subsidence to the property which was first discovered back in 2001 and repaired in 2004. Damage reappeared in 2008 and repaired 2010. This is now the 3rd time that the damage has returned.

NATURE AND EXTENT OF DAMAGE

Description and Mechanism

The principal damage is similar to previous damage and takes the form of tapering diagonal cracking predominately to the front LH section of the building and has also spread to the whole flank elevation and also the rear LH corner.

The indicated mechanism of movement is downwards movement towards the front left corner and rear LH corner, both ends dipping downwards towards the street trees.

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.

Onset and Progression

The damage appears to have occurred over a period of time but has been deteriorating over the summer months.

SITE INVESTIGATIONS

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

The ground investigation was carried out by CET Safehouse Ltd on 23rd June 2014, 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

This was located at the front of the bay.

The underside of the foundation is at 1.1m below ground level with the foundation comprising of 320mm of brick corbel on top of 300mm concrete strip footings. The soil beneath the property foundations has been identified as clay.

Roots were present down to 1.7m. Samples of root taken from beneath the foundations have been analysed and originate from the Pomoideae family which includes the Whitebeam, Rowan, Apple, Pear, Cotoneaster, Hawthorn & Pyracantha tree. There is a Hawthorn tree located on the public pavement within the flank of the property in Honeysuckle Road which is in the ownership of the Local Authority.

A second site investigation was carried out on the 9th December 2014. This comprised of 2No trial pits/boreholes. TP1 was undertaken to the front corner, whilst TP2 was to the rear corner of the building.

The results showed similar results, with roots down to 2.0m depth within both TPs and although the roots within TP1 were negative, the roots from TP2 were identified as being from the Hawthorn tree.

Given the history of the damage, previous ground investigations undertaken identified the following roots:

1. Site investigation undertaken on 09/02/2004 to the front corner identified roots to 2.0m depth but inconclusive regarding tree identification.
2. Site investigation undertaken on 06/06/2004 to the front corner identified roots to 2.0m depth and roots identified as originating from the Lime tree.
3. Site investigation undertaken on 23/02/2009 to the front corner identified roots to 2.0m depth and roots identified as originating from the Lime tree.
4. Site investigation undertaken on 23/09/2009 to the front corner identified roots to 2.2m depth and roots identified as originating from Lilac/Privet.

Given that a total of 6No site investigation has now been undertaken over time, it appears that the dominant trees identified are from the 3No Local Authority street trees, these being the Lime growing to the front corner, a Hawthorn growing on the flank elevation (Honeysuckle Road) and the Hawthorn growing on the rear LH corner (Honeysuckle Street).

MONITORING

A programme of crack width/level monitoring has been underway since February 2014.

In summary, the results to date show seasonal movement, with the area of most movement recorded to the front LH corner and rear LH corner of the building. 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.

CAUSE OF DAMAGE

Taking an overview view of the damage that has returned for the 3rd time along with the latest site investigations 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 3No street tree located in the public footpath.

I base this view on the fact that the foundations of the property in the area of damage have been built at a relatively shallow depth, 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. 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 3No LA street trees, these being the Plane tree and 2No Hawthorns.

RECOMMENDATIONS

As this is the 3rd re-occurrence of damage, we feel that the only option is to ensure that the street trees located in the footpath 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.

HEAVE ASSESSMENT

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

The initial site investigation has been undertaken during the summer months and the amount of desiccation is minor and, in my opinion, represents purely seasonal desiccation rather than a persistent soil moisture deficit.

There is no evidence of significant tilt towards the street tree having occurred to the house, or distortion within the property, as would be expected if a significant persistent soil moisture deficit had been set up, and where the tree was planted after the house was built.

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

Given that the initial claim spend for superstructure repairs back in 2001-2004 amounted to £22,000.00 and a further £31,500.00 was spent when damage returned back in 2008-2010, we anticipate the following:

If the street trees are removed then I consider that works including structural crack repair and redecoration at an approximate cost of £35,000.00 will be appropriate in order to repair the damage in this case.

However, if the street trees are not removed then it will almost certainly mean that it will 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 £150,000.00.

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