

Cunningham Lindsey

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Subject Property Address:

18, Crystal Way

Waterlooville

Hants

PO7 8NB

INSURANCE CLAIM**CONCERNING SUBSIDENCE DAMAGE****ENGINEERING APPRAISAL REPORT**

This report is prepared on behalf of ----- 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: 8/2/2014

Cunningham Lindsey Ref: SOHPC/PXL/7468207

INTRODUCTION

This report has been prepared by our Chartered Builder, Gavin Catheline, 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 4 bedroom detached house which appears to have been constructed in approximately 1982.

The property is situated in a residential estate location on a plot that is gently sloping, sloping generally from back to front. The overall layout is recorded on our site plan.

DISCOVERY OF DAMAGE

The policyholder and homeowner, first discovered the damage on return from a holiday on 3/10/2013.

The damage appeared suddenly. The policyholder then advised insurers.

NATURE AND EXTENT OF DAMAGE

Description and Mechanism

The main area of damage is to the the front right hand corner of the property and takes the form of tapering diagonal cracks.

This pattern of damage indicates a mechanism of downwards movement to the front right corner of the building.

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

Mr Hitchiner has advised that damage first commenced in late summer 2013.

We consider that the damage has occurred recently.

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

The ground investigation was carried out by CET Safehouse Ltd on 14th January 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 right corner of the house.

The underside of the foundation is at 1800mm below ground level with the foundation comprising of concrete trench fill construction. The soil beneath the property foundations has been identified as a stiff clay of high and very high plasticity. The clay subsoil extended throughout the borehole to a depth of 5000mm below ground level, becoming very stiff from 2500mm. Roots up to 2mm in diameter were observed within the soil samples taken to a depth of 2500mm below ground level and further roots to 1mm diameter to a depth of 2800mm.

Samples of root taken from beneath the foundations have been analysed and originate from an Oak tree. There is an Oak tree located opposite the front right corner of the property which is in the ownership of Havant Borough Council.

The site investigation results confirm the presence of a highly plastic clay subsoil which was found to contain roots from the nearby Oak tree beneath the foundations.

MONITORING

Crack width/level monitoring has been installed and the initial readings have been taken. We will advise further as monitoring developments progress.

CAUSE OF DAMAGE

Taking an overview of all the site investigations referred to above, in addition to the timing of discovery of the damage at the end of the summer 2013, it is my opinion that the cause of damage results from clay shrinkage subsidence brought about by the action of roots from the Oak tree located in the verge opposite the front right corner of the property.

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 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 Oak tree.

RECOMMENDATIONS

It is recommended that the Oak tree located in the verge and close to the front right corner of 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. A detailed scope of building repairs would then be finalised.

It is fully anticipated that stability will return after removal of the tree and as such we shall proceed to repair immediately once the mitigation is completed.

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 will not occur should the vegetation management described above be undertaken.

REPAIRS

If the Local Authority Oak tree is removed then I consider that works including structural crack repair and redecoration at an approximate cost of £5,000.00 will be appropriate in order to repair the damage in this case.

If the Local Authority Oak 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 £80,000.00.

For Cunningham Lindsey

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