Cunningham Lindsey

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Policyholder: Beitov Properties Ltd

Subject Property Address:

40, Elsworthy Road
London
NW3 3DL

INSURANCE CLAIM

CONCERNING SUBSIDENCE DAMAGE

UPDATED 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: January 2017

Cunningham Lindsey Ref: MNHPD/TGH/7941448

INTRODUCTION

This report has been prepared by our Chartered Building Surveyor, Michael Robinson BSc (Hons) MRICS Cert CII, and the damage to the property 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 four storey semi detached house which has been converted into seperate flats. It is likely that the property was constructed in around 1900 but the date of the conversion is unknown. The builidng is of traditional construction with solid brick walls under a pitched and hipped roof. The property is located within an established residential area which has been designated a Conservation Area on a plot which is esentially level.

There are trees within influencing distance of the property. An arboricultural report has been commissioned and for precise details of the vegetation within rooting distance of the property please refer to the Arboricultural Assessment Report from OCA UK Ltd.

Of particular note are two False Acacia which are approximately 13m to 14m high and at a distance of 3.9m and 5.4m from the front left corner. The trees are sited within the front garden of the neighbouring property, 42 Elsworthy Road. The trees are now the subject of Tree Preservation Orders.

The drainage system is a combined system which is shown on the site plan which is incorporated within the Factual Report from CET Safehouse Ltd.

The claim essentially concerns damage to the front entrance steps and to the front left hand corner of the main building.

CIRCUMSTANCES OF DISCOVERY OF DAMAGE

We understand that cracking to the front of the property was noted during Autumn 2014 with a subsequent progression in the level of damage. It was suspected that the damage was of structural significance and a report was therefore obtained from a specialist structural repair contractor. Damage was considered to have developed as a result of clay shrinkage subsidence due to the influence of the adjacent trees. It was considered appropriate for insurers to be notified and a claim was intimated in May 2015.

NATURE AND EXTENT OF DAMAGE

Description and Mechanism

The principal damage takes the form of tapering diagonal cracking to the front left corner of the property with more significant cracking to the flank walls of the entrance steps which lead up to the main entrance at upper ground floor level. There is cracking to the front elevation with disturbance to the brick arch above the entrance porch and cracking to the stucco rendering at lower ground floor level. There is cracking to the rendering to the side walls of the steps.

Internally there is cracking within the communal entrance hall and stairwell, together with damage within the lower ground floor flat to the hallway and bathroom. At the time of our inspection access was not available to the upper flats.

The indicated mechanism of movement is downwards movement towards the front left.

There is also cracking and disturbance to the brick bin stores to the front of the site and to areas of external surfacing.

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

Damage is considered to have developed since Summer 2014. The monitoring exercise has shown the movement to be of a cyclical nature with cracks opening in the summer and closing in the winter.

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 Safehouse Ltd on 3rd June 2015 and for details of the trial pit and borehole location, together with test results, please refer to the attached CET Factual Report.

The trial pit was located adjacent to the left hand flank wall of the steps and this revealed a crushed brick foundation to a depth of 1.35m bearing onto a firm, moist, silty CLAY. A 6.0m deep borehole was sunk with soil testing to a depth of 5.0m. At a depth of 1.5m the subsoil was classified as being a stiff silty Clay which continued to a depth of 5.0m with a very stiff silty Clay below.

In-situ soil testing was undertaken and the shear vane readings increased with depth. Laboratory testing has shown the clay to be of high to very high plasticity indicating the subsoil is highly susceptible to volumetric changes due to variations in moisture content. Based upon the results of the soil suction testing and analysis of the moisture contents and soil properties, the clay was considered to be desiccated.

Roots were noted at the underside of the foundations and within the borehole to a depth of 4.0m with decomposing roots reaching as far down as 6m. Samples of the roots were taken to be analysed and were found to have originated from a member of the Leguminosae family (Laburnum, Robinia (False Acacia) and wisteria).

As previously outlined, there are two large False Acacia located close to the front left hand corner of the property.

The investigations also incorporated a CCTV drainage survey and localised defects were identified. Drainage repairs were recommended so as to restore the installation to a watertight condition and appropriate works were completed in late 2015.

MONITORING

A programme of crack width and level monitoring has been undertaken with readings being taken between June 2015 and Novemember 2016. A deep datum had been installed during the course of the initial site investigation and the monitoring readings have been taken by CET. Please refer to the report from CET for the accurate readings presented in both table and graphical formats, together with a plan showing the location of the monitoring points.

The monitoring has recorded a pattern of movement across the front left of the property with downward movement over the summer months and subsequent recovery / upward movement over the wetter winter period indicative of vegetation related clay shrinkage subsidence.

CAUSE OF DAMAGE

Taking an overview of the site investigations and the results of the level monitoring exercise we consider the damage has developed as a result of clay shrinkage subsidence brought about by the action of roots from the adjacent False Acacia trees which are located adjacent to the front left corner of the property within the grounds of 42 Elsworthy Road.

This view is based on the fact that the foundations of the property in the area of damage bear onto a clay subsoil which 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. Roots from the Leguminosae family (Robinia / False Acacia) are present in the clay subsoil beneath the foundations.

Whilst the site investigations incorporated a CCTV drainage survey which revealed localised drain defects, we do not consider the damage which forms the subject of this claim to have developed due to drain leakage. The monitoring exercise has recorded a clear pattern of cyclical movement indicative of vegetation related clay shrinkage subsidence.

RECOMMENDATIONS

It is considered that foundation stability can be achieved if the adjacent False Acacia trees were to be felled.

Following consideration of the investigations, matters had been referred to the Mitigation Centre of Oriel Services Ltd who co-ordinated the appointment of OCA UK Ltd Arboricultural Consultants. OCA UK Ltd had recommended the felling of the two False Acacia identified as T1 and T2 within their report. As the property is located within a Conservation Area it was necessary for a notification to be made to the London Borough of Camden. However following consideration of the notification the Council advised of their intention to serve Preservation Orders on the trees which they subsequently confirmed.

Additional monitoring readings have therefore been undertaken to further substantiate any application seeking consent to fell the trees and the level monitoring exercise has shown a clear pattern of cyclical movement.

We have therefore requested that OCA UK Ltd, Arboricultural Consultants, arrange for an application to be submitted to the Local Authority seeking consent to fell the two False Acacia which are the subject of Tree Preservation Orders.

It is anticipated that stability will return after removal of the trees resulting in the need for superstructure repairs and decorations.

HEAVE ASSESSMENT

We do not consider that the removal of the adjacent vegetation will result in an unacceptable risk of heave to the subject property.

REPAIRS

If the offending trees are removed then we consider that works including structural crack repair and redecoration at an approximate cost of £18,000 will be appropriate in order to repair the damage to the property.

If the trees are not removed then localised underpinning will need to be considered with any scheme incorporating the entrance steps and the front left hand corner of the main building. Such works would involve the need for alternative accommodation to the lower ground floor flat. Overall costs would be in the region of £80,000.

For Cunningham Lindsey

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