sedgwick.

[redacted]

Policyholder: [redacted]

Subject Property Address:

37C Westbere Road
LONDON
NW2 3SP

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: 06/04/2022

[redacted]

[redacted]

INTRODUCTION

This report has been prepared by our Chartered Builder, Gavin Catheline MCIOB, 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 two-storey semi-detached house constructed c.1900 which has been converted in to 3 self contained flats. To the rear of the property is a two storey projection and a single storey extension. The property is located in a mature residential area and on a plot that is generally level.

The claim concerns damage to flat C and its rear single storey extension.

CIRCUMSTANCES OF DISCOVERY OF DAMAGE

The current tenant of flat C first discovered the damage in summer 2020.

Sudden discovery of cracking in kitchen above doorrear external door.

NATURE AND EXTENT OF DAMAGE

Description and Mechanism

The principal damage takes the form of diagonal tapered cracking and the rear external door is distorted, sloping towards the rear right corner.

The indicated mechanism of movement is downward towards the rear right corner of the rear single storey extension.

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 current tenant of the property has advised that damage first commenced in Summer 2020.

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.

SITE INVESTIGATIONS

Site investigations were carried out by CET Property Assurance Ltd on 13th October 2021 and for details of the trial pit and borehole locations, together with test results, please refer to the attached CET factual report.

Trial Pit 01/Borehole 01
This was located adjacent to the rear right corner of the rear single storey extension, within the area of damage and this revealed a concrete strip foundation with an overall founding depth of 950mm below ground level. The founding subsoil is described as firm, orange / brown, silty CLAY. Numerous roots up to 4mm in diameter were observed beneath the foundations. The clay subsoil became stiffer with depth and extended throughout the borehole to a depth of 6.0m below ground level with further roots being observed within the subsoil samples to a depth of 3.5m. A datum was installed at the base of the borehole at 6.0m as a reference point for level monitoring.

The subsoil samples retrieved from borehole 01 were sent to a laboratory for analysis. This has revealed that the clay subsoil is of very high plasticity index, meaning that the material is very susceptible to movement due to shrinkage and swelling with variations in moisture content. This is to say that if moisture is withdrawn from the subsoil, for example due the action of roots, then shrinkage i.e. a volumetric reduction will occur. Analysis of the subsoil moisture content profiles and soil suction values indicates that the subsoil in borehole 01, within the area of damage has a moisture deficit at a depth of approximately 1.5m below ground level. This indicates that the subsoil in borehole 01 has been affected by shrinkage due to the action of the roots found beneath the foundations.

The roots have been analysed in the laboratory and have been identified as *Populus* – which are Poplars and Aspens. These roots clearly emanate from the Aspen trees on land to the rear of the property, which comes under the control of Network Rail.

MONITORING

Crack width and level monitoring has been underway since 08/11/2021.

The level monitoring readings indicate an upward trend of movement within the area of damage. The most recent readings taken on 4th March 2022 show upward movement indicative of recovery of the clay subsoil of approximately 3mm.

This mechanism of movement is consistent with rehydration and swelling of the clay subsoil following shrinkage in the previous summer, caused by the moisture uptake of the roots found beneath the foundations.

The level monitoring results to date confirm the involvement of the Aspen trees.

We expect the building to begin to move downward during the summer 2022 unless the implicated trees are removed in good time.

Monitoring will continue and we will issue further updates as readings become available.

CAUSE OF DAMAGE

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.

RECOMMENDATIONS

Our recommendation is that mitigation measures are undertaken to address the cause of damage and restore stability to the subsoil and building foundations. Consideration can then be given to the required building repairs.

MITIGATION

We consider the damage will not progress if appropriate measures are taken to remove the cause. In this instance it is vegetation for which a commercial third party, Network Rail, is responsible is contributing toward the cause of damage.

We have identified the following trees within influencing distance to the property and which are likely to be implicated in the current damage:

T1 – Aspen tree – 17m high, 13m distance from rear right corner – owned by Network Rail.

G1 – Group of deciduous trees including Aspen, Sycamore and Ash – 16m high, 13m distance from rear – owned by Network Rail.

We will obtain an Arboricultural Report to advise us on the effects of the trees and to provide us with recommendations for tree management works required to restore stability and mitigate the damage.

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. In addition the results of the Site Investigation, laboratory testing and monitoring have been taken into account.

HEAVE ASSESSMENT

We have assessed whether significant heave will occur should the vegetation as referred to above be removed.

The site investigation has been undertaken during the autumn months with desiccation suggested by the soil suction and moisture content readings at 1.5m below ground level. The amount of desiccation is minor and, in our opinion, represents purely seasonal desiccation rather than a persistent soil moisture deficit.

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

REPAIR COSTS

If the recommended tree management works is undertaken as described in the attached Arboricultural Report, then we 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 recommended tree management works is not undertaken as described in the attached Arboricultural Report, 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 [redacted]

Gavin Catheline MCIOB
Building Consultant

David McCormack
Claims Technician
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