



Policyholder:



Subject Property Address:

5 Frogna Close
LONDON
NW3 6YB

INSURANCE CLAIM

CONCERNING SUSPECTED SUBSIDENCE

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: 25/01/2019





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 semi detached house constructed in approximately 1937, in a mature residential area and on a plot that is generally level.

The claim concerns damage to the rear left corner of the property.

CIRCUMSTANCES OF DISCOVERY OF DAMAGE

The policyholder and homeowner, [REDACTED] first discovered the damage in August 2018.

The damage was first discovered by the policyholder on their return from a short break away.

NATURE AND EXTENT OF DAMAGE

Description and Mechanism

The principal damage takes the form of vertical and diagonal tapered cracking.

The indicated mechanism of movement is downward towards the rear left corner of the building.

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

[REDACTED] has advised that damage first commenced in Summer 2018.

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 undertaken by CET Property Assurance Ltd on 1st November 2018 and comprised the excavation of two trial pits extended by hand augured borehole.

Trial pit / borehole 01 was excavated adjacent to the rear left corner of the main two storey house and this revealed a concrete trench fill foundation with an overall founding depth of 650mm below ground level. The founding subsoil is a naturally occurring very stiff, fragmented, mid brown, grey veined silty clay with partings of orange silt and fine sand. Roots up to 12mm in diameter were observed in the subsoil below the foundations. The very stiff clay subsoil extended throughout the borehole to a depth of 5m below ground level and a datum was installed at 6m for the purpose of level monitoring. Further roots were observed in the subsoil samples taken to a depth of 1.5m below ground level.

Trial pit / borehole 02 was excavated adjacent to the rear left corner of the rear single storey projection and this revealed a concrete trench fill foundation with an overall founding depth of 700mm below ground level. The founding subsoil is a naturally occurring very stiff, fragmented, mid brown, grey veined silty clay with partings of orange silt and fine sand. Roots up to 2mm in diameter were observed in the subsoil below the foundations. The very stiff clay subsoil extended throughout the borehole to a depth of 5m below ground level and further roots were observed in the subsoil samples taken to a depth of 1.4m.

The subsoil and root samples taken were sent to a laboratory for testing. The subsoil has been found to be 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 clay subsoil by the action of roots, then shrinkage, i.e. a volumetric reduction will occur. Analysis of the soil moisture content profile results indicates that there is a moisture deficit at approximately 1m below ground level. This indicates that the subsoil at this depth has been affected by moisture extraction by the roots present.

The roots were analysed and have all been identified as *Catalpa* – commonly known as Indian Bean tree.

MONITORING

We consider that level and crack width monitoring is required. This is to confirm the operation of a clay shrinkage subsidence mechanism and to determine when relative stability has been achieved following mitigation measures.

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

MITIGATION

We consider the damage will not progress if appropriate measures are taken to remove the cause. In this instance it is likely that vegetation for which the policyholder is responsible is contributing toward the cause of damage.

Based on the results of the site investigations we consider that the nearby Catalpa (Indian Bean Tree) is implicated. We recommend that this tree is removed and the stump treated to prevent re-growth.

Catalpa (Indian Bean Tree) – 7m high, 1.5m distance from rear left corner – Fell & treat stump.

We would also recommend that other trees and vegetation growing close to the property is generally reduced in size and periodically maintained to control moisture demands and thus reduce the risk of future subsidence damage.

REPAIR

We have not decided on the final type of repair required as our investigations have not yet been concluded. However, this is likely to involve 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 will be taken into account.

Gavin Catheline MCIQB
Building Consultant

Kerry Gilbert

