

# Supplementary Engineer's Report



## Claim Details:

Report Date	30 <sup>th</sup> November 2017
Policyholder	16 Goldhurst Terrace Limited
Address	16 Goldhurst Terrace, London, NW6 3HU

**SITE PLAN NOT TO SCALE**

This plan is diagrammatic only and has been prepared to illustrate the general position of the property and its relationship to nearby drains and trees etc. The boundaries are not accurate, and do not infer or confer any rights of ownership or right-of-way. OS images provided by Innovation Group Environmental Services. © Crown Copyright 2009. All rights reserved. Licence number 100043218

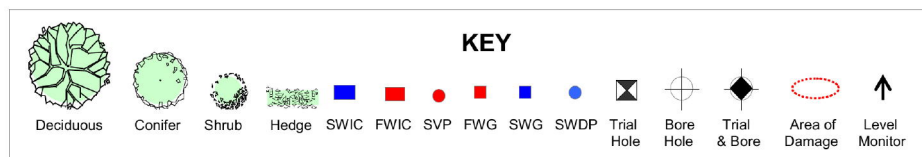
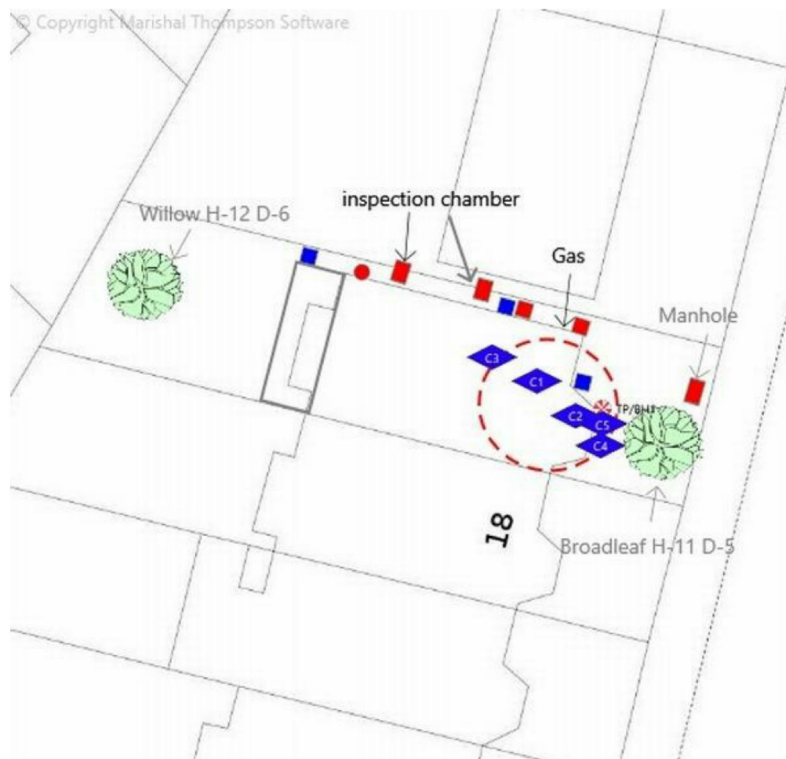


FIGURE 1 Site Plan

## INTRODUCTION

The claim was initially reported to insurers on 20<sup>th</sup> February 2017 and Innovation Subsidence Management Services (ISMS) were appointed to handle the claim.

The report briefly describes the damage, identifies the cause and gives recommendations on the required remedial measures.

The report should not be used in the same way as a pre-purchase survey. It has been prepared specifically in connection with the present insurance claim and should not be relied on as a statement of structural adequacy. It does not deal with the general condition of the building, decorations, services, timber rot or infestation etc.

Investigations have been carried out in accordance with the guidance issued by The Institution of Structural Engineers. All directions are given relative to an observer facing the front of the property. We have not commented on any part of the building that is covered or inaccessible.

## CIRCUMSTANCES

Our initial Engineers Report outlined the claim related to cracking that was noted on a survey to flat 1 prior to notification. This prompted them to submit a claim to insurers. Investigations were carried out which indicated that the lime tree in the front garden was causing the downward movement of the front of the property. Further investigations noted the tree was protected by a Tree Preservation Order and so a request for removal of the tree was submitted to the local authority.

## PROPERTY

The property is a large four storey semi-detached house converted into three flats. The main area of damage is to flat one which is a split level flat with the bedrooms in the lower ground floor and living space at ground floor level.



## HISTORY

Date of Construction	1900
Purchased	NULL
Policy Inception Date	21 November 2016
Damage First Noticed	
Claim Notified To Insurer	20 February 2017
Date of our Inspection	30 March 2017

### **ADEQUACY OF BUILDING SUM INSURED**

The current building sum insured is considered adequate

### **TOPOGRAPHY**

The site slopes gently upwards from left to right. There is a gentle downward slope from right to left at the front of the property and a terraced garden to the rear.

### **GEOLOGY**

Reference to the 1:50,000 scale British Geological Survey suggests the Superficial geology of the site is No drift geology recorded which overlies a Bedrock geology of London Clay.

### **DAMAGE RELATING TO THE CLAIM**

The following is a summary of the damage relating to the Insurance claim, including any unrelated damage in the same vicinity, with supporting photographs where appropriate.

#### **INTERNALLY**

Lower ground floor front bedroom

1mm cracking to the front bay, around the window and by the door to the en-suite. Bedroom door is also binding.

Lower ground floor front bedroom en-suite

Separation in the wall tiles by the door, corresponding with the cracking in the bedroom.

Lower ground floor hall

1mm cracking to the ceiling and above the door to the front bedroom.

Ground floor front room

Hairline cracking to the right hand internal wall, corresponding with cracking in the communal hallway. Hairline cracking above the opening to the kitchen.

Communal hall

- Hairline cracking to the left hand wall, corresponding with the cracking in flat 1. 1mm cracking above the door to flat 1. Cracking to the stairwell ceiling.

#### **EXTERNALLY**

Front threshold has dropped resulting in separation between the door and left hand wall.

- Cracking below the front bay at lower ground floor level, dropped brick arch and 2mm cracking above the lower ground floor centre window.



Fig 01 – Below front bay

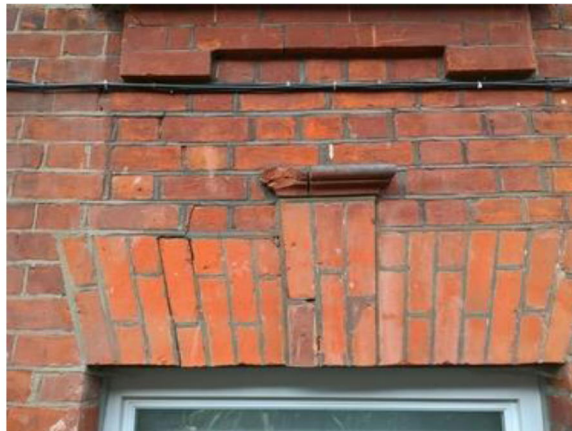


Fig 02 – Above front bay

**MECHANISM OF MOVEMENT**

The indicated mechanism of movement is a seasonal, downward movement of the front of the property.

**DAMAGE CATEGORY**

It is common practice to categorise the structural significance of the damage in this instance, the damage falls into Category 1 (Very Slight).

Category 0	Negligible	<0.1 mm
Category 1	Very Slight	0.1 - 2mm
Category 2	Slight	>2 but < 5mm
Category 3	Moderate	>5 but < 15mm
Category 4	Severe	>15 but < 25mm
Category 5	Very Severe	>25mm

**Extract from Table 1. B.R.E Digest 251**  
Classification of damage based on crack widths

## INVESTIGATIONS

### SITE EXCAVATIONS

Site investigations during the previous claim were carried out by Innovation Environmental Services (IGES) on the 11<sup>th</sup> August 2017 and their report dated 25<sup>th</sup> August 2017 reference C34832G16135 refers.

Due to the presence of electricity lines, we were unable to confirm the foundation depth of the property, with the borehole being undertaken as close to the property as possible. It appeared that the ground conditions from the base of the retaining wall was a very stiff clay with live roots to a depth of 3.7 metres. The subsidence therefore appeared to be due to clay shrinkage due to the influence of the lime tree in the front garden.

### HEAVE

Given the details uncovered in the site investigation report regarding the soil characteristics we do not consider that heave of the site will be an issue once the vegetation has been removed.

### Roots

Site investigations revealed the presence of roots in the boreholes to 3.7 metres which we believe to be below foundation level. Samples of these roots were recovered and sent to an independent laboratory with no prior knowledge of the site they were removed from. The results identified the live roots as Tilia (lime).

### MONITORING

Crack monitoring was instructed due to the nature of the site. The crack monitoring has shown some minor seasonal movement between May 2017 and November 2017.

### ARBOURICULTURAL REPORT

Following the initial diagnosis that the damage was likely to relate to root induced, clay shrinkage subsidence Arboricultural consultants, IGES were appointed to deal with mitigation measures. Their initial assessment report is dated 18<sup>th</sup> August 2017, (Reference: SA-73305).

A copy of the report is attached.

**SUMMARY AND CONCLUSIONS**

Based on the above evidence, it is clear that the risk property has suffered damage as a result of tree root induced, clay shrinkage subsidence. The foundations of the property rest on a clay subsoil which has been proven to have a Medium to High potential for volumetric change in relation to its moisture content. The effects on the property, of seasonal moisture changes in the soil are recorded in the level monitoring readings reproduced above.

Roots, identified as belonging to nearby vegetation were recovered from beneath the foundations.

In conclusion, I am of the opinion that the principal cause of the damage is the effect of the vegetation to the front of the property mentioned in IGES report.

**REPAIR COSTS**

Where it is possible to mitigate further movement by removal of the implicated vegetation, we consider that superstructure repairs alone will suffice. The current estimated cost of this work is £3986.68. Where it is not possible to prevent further damage caused by seasonal movement induced by the effects of the implicated vegetation, it will be necessary to stabilise the building by foundation augmentation.

Whilst no detailed designs have currently been developed for a suitable scheme of stabilisation, we believe that it would be reasonable to anticipate substructure works costs in the region of £20,000 to £30,000, in addition to enabling works of £5,000 to £10,000.

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Subsidence Engineer  
Innovation Subsidence Management Services**