

Policyholder: Ruth Tamir

Subject Property Address:

Flat 6  
Fitzjohns Mansions  
10 Netherhall Gardens  
LONDON  
NW3 5RS

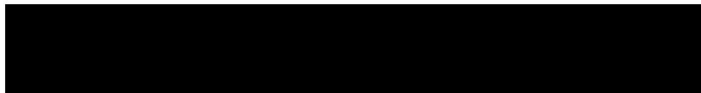
**INSURANCE CLAIM**

**CONCERNING SUBSIDENCE DAMAGE**

**ENGINEERING APPRAISAL REPORT**

This report is prepared on behalf of NIG 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: 01/07/2019





## INTRODUCTION

This report has been prepared by our Surveyor, Mark Wood BSc(Hons), ICIQB, Cert CII, BDMA Ins.Tech, 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 Purpose built flat/s in an urban area on a plot that is gently sloping down from left to right. The overall layout is recorded on our site plan.

The general layout of the site is shown on the attached sketch plan.

There are trees within influencing distance of the property. There are two deciduous trees in the rear garden of the risk address. There are also two larger deciduous trees in the rear garden of a neighbour's property.

The drainage system is a combined system which is shown on the attached plan.

## CIRCUMSTANCES OF DISCOVERY OF DAMAGE

The policyholder and homeowner, Ruth Tamir, first discovered the damage on 29/9/18.

Ms Tamir suddenly noted the cracking A claim was submitted to Insurers.

## NATURE AND EXTENT OF DAMAGE

Sketches showing the layout of the site and the damage are attached.

### Description and Mechanism

The principal damage is internal and external in Flat no.6 on the 1<sup>st</sup> floor in the rear projection to the rear of the main building and takes the form of vertical cracking at the junction of the main building and rear projection.

The indicated mechanism of movement is rotation of the rear projection to the rear of the main building towards the vegetation to the rear.

### Significance

The level of damage is very slight, and is classified as category 1 in accordance with BRE Digest 251 - Assessment of damage in low-rise buildings..

### Onset and Progression

Ruth Tamir has advised that damage first commenced in September 2018.

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.

#### SITE INVESTIGATIONS

Reference to the solid and drift geological survey map shows the anticipated subsoil as clay.

The ground investigation was carried out by CET Safehouse Ltd on 5<sup>th</sup> April 2019 and for precise details of the results please refer to the attached Site Investigation report.

The contractor was instructed to excavate a trial hole to the rear projection. The trial hole extended to a depth of 1.1m and established that the rear projection has a 450mm thick strip foundation founded 950mm below ground level. The underlying subsoil consisted of a soft to firm light brown silty clay.

A hand augered borehole was sunk to a depth of 4.2m, the light brown silty clay soil at the underside of the foundation remained consistent to a depth of 1.7m where the soil changed to a firm light brown silty clay with orange grey and dark brown flecks. This soil remained consistent until 3.7m where the soil became a firm becoming stiff light brown silty clay with orange grey and dark brown flecks and gypsum fragments which remained consistent to completion of the borehole at 4.2m. Laboratory testing has shown that the clay soil to be of a very high plasticity.

Roots up to 1.5mm diameter were noted at the underside of the foundation and to a depth of 3.7m. The roots were analysed and found to originate from Populus species (Poplar.)

The site investigation results confirm the soils moisture contents are drier than normal due to moisture extraction from the vegetation to the rear of the property.

Camera surveying of drains located close by the area of damage have been undertaken and reveal a section of the drain requires minor repair.

#### MONITORING

Level monitoring has been underway since January 2019. The level monitoring generally demonstrated a slight recovery of the rear projection between January and May.

Such a pattern of cyclical movement is generally indicative of vegetation related clay shrinkage subsidence.

The level monitoring exercise is to continue.

#### CAUSE OF DAMAGE

Taking an overview of all the site investigation and level monitoring results referred to above, it is my opinion that the cause of damage results from clay shrinkage subsidence brought about by the action of roots from the vegetation to the rear of the property.

I base this view on the fact that the foundations of the property in the area of damage have been built at a relatively shallow depth, 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 analysis of the site investigation results indicates that the soil has been affected by shrinkage. Poplar tree roots are present in the clay subsoil

Continuation / 4

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 Poplar tree.

I have also considered whether there could be any other influencing factors and I am satisfied that there is no factor, other than the vegetation, that is causing the damage.

#### RECOMMENDATIONS

It is recommended that the Poplar tree located to the rear 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 (and a copy of OCA UK Limited's report is attached herewith).

In the meantime I shall arrange for the drains located close by the property to be repaired.

Level monitoring will continue after removal of the tree in order to check for stability. A detailed scope of repairs will be finalised upon conclusion of the monitoring.

#### HEAVE ASSESSMENT

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

The site investigation has been undertaken with desiccation suggested by the moisture content readings at 3m. The amount of desiccation is minor and, in my opinion, represents purely seasonal desiccation rather than a persistent soil moisture deficit. I believe this to equate to ground recovery of the subsidence that has taken place this summer, rather than being true heave, and consequently I am not of the opinion that long term heave will result should the Poplar tree be removed.

I am not of the opinion that heave of the clay subsoil is a threat to adjacent property.

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 Poplar tree is removed then I consider that works including structural crack repair and redecoration at an approximate cost of £5,584 will be appropriate in order to repair the damage in this case.

If the street 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 £150,000.

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*Building Consultant*

Tracey Husband  
*Claims Technician*