



**TECHNICAL REPORT ON A SUBSIDENCE CLAIM**



**TRS Main Property Binder (June)  
128 Haverstock Hill  
London  
NW3 2AY**

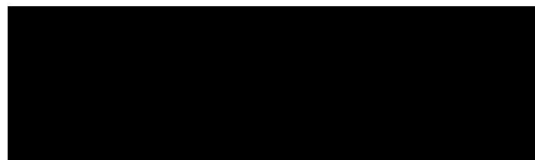


Prepared for

**AXA Commercial - London Property Team**

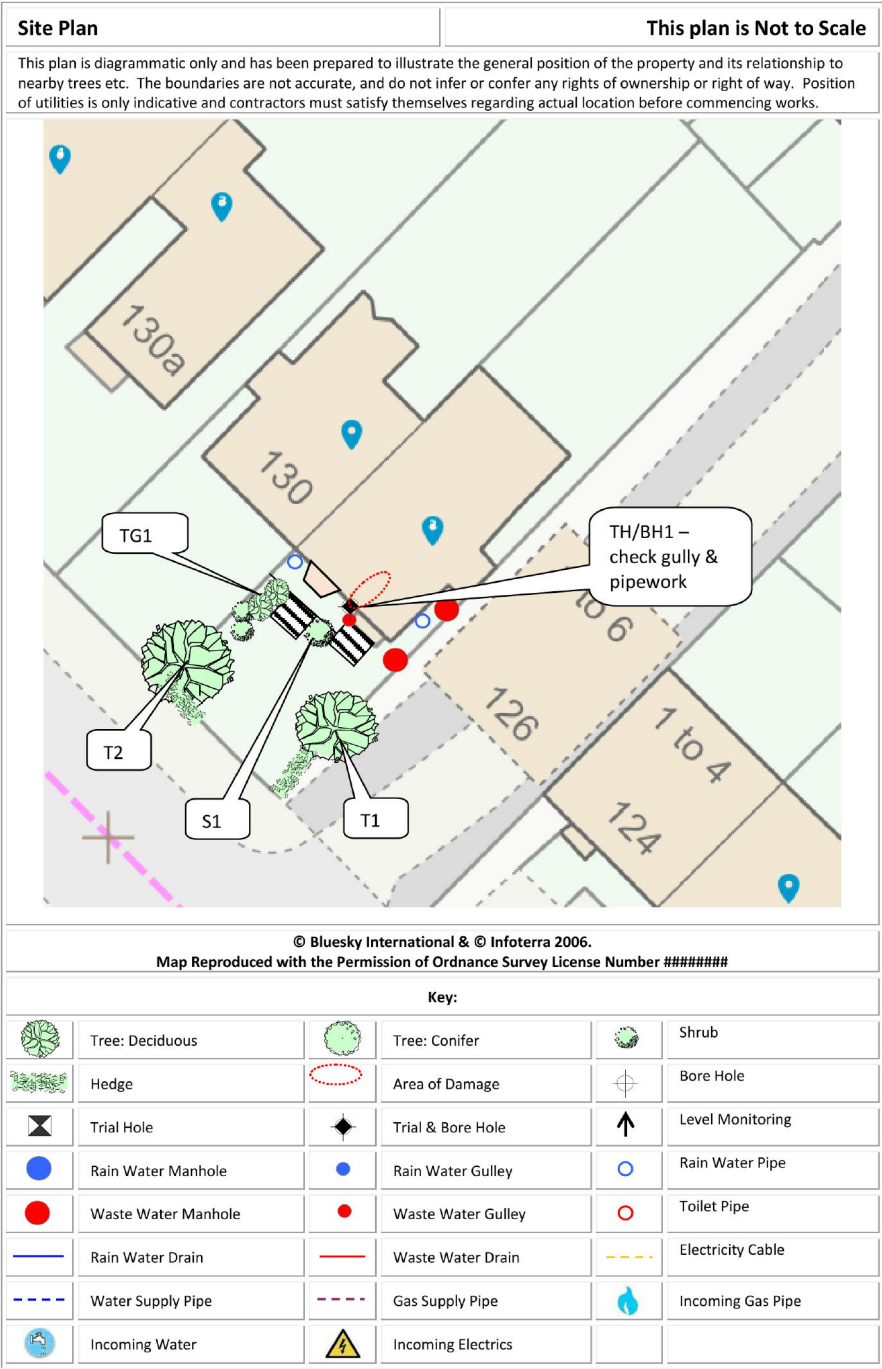


6<sup>th</sup> August 2021



Chartered Loss Adjusters





## INTRODUCTION

We have been asked by AXA Commercial - London Property Team to comment on movement that has taken place to the above property. We are required to briefly describe the damage, establish a likely cause and list any remedial measures that may be needed.

Our 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, timber rot or infestation etc.

The report is made on behalf of Crawford & Company and by receiving the report and acting on it, the client - or any third party relying on it - accepts that no individual is personally liable in contract, tort or breach of Statutory duty. Where works address repairs **that are not covered** by the insurance policy we recommend that you seek professional advice on the repair methodology and whether the works will involve the Construction (Design & Management) Regulations 2015. Compliance with these Regulations is compulsory; failure to do so may result in prosecution. We have not taken account of the regulations and you must take appropriate advice.

We have not commented on any part of the building that is covered or inaccessible.

## TECHNICAL CIRCUMSTANCES

The owner of Flat A, Barry Rowe, advised the tenant informed him in early July 2021 that a crack had recently. Following this a claim was notified to Insurers.

## PROPERTY

The property is a four-storey semi-detached house of traditional construction with solid brick walls surmounted by a hipped and tiled roof.

The property has been converted into 4 flats.

## HISTORY & TIMESCALE

Site investigations are being organised.

Date of Construction .....	circa 1880's
Purchased .....	2007
Policy Inception Date.....	01/06/2007
Damage First Noticed .....	July 2021
Claim Notified to Insurer.....	19/07/2021
Date of our Inspection.....	28/07/2021
Issue of Report.....	06/08/2021
Anticipated Completion of Claim .....	Spring 2022

## TOPOGRAPHY

The property occupies a reasonably level site with no unusual or adverse topographic features.

## GEOLOGY

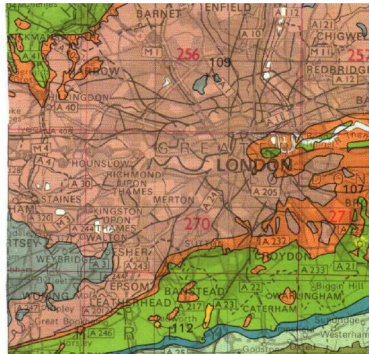
Reference to the 1:625,000 scale British Geological Survey Map (solid edition) OS Tile number TQNW suggests the underlying geology to be Clay Soils.

Clay soil superficial deposits are a cohesive soil characterised by their fine particle size and are usually derived from weathering of an underlying “solid geology” clay soil such as London Clay or Oxford Clay.

Like the solid geology sub-soil from which they are derived they shrink when dry, and swell when wet and can be troublesome when there is vegetation<sup>1</sup> nearby and Gypsum and selenite crystals can be encountered (particularly in the south east). Protection using Class II Sulphate Resisting cement is therefore recommended for buried concrete.

The superficial deposits are thought to be none - Solid Outcropping.

The solid geology appears to outcrop in this location, although we cannot rule out the presence of superficial deposits at shallow depth.



Geology. Reproduced with consent of The British Geological Survey at Keyworth.  
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## VEGETATION

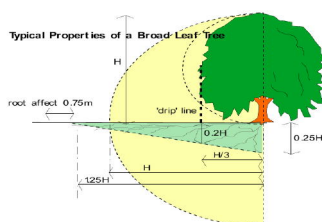
There are several trees and shrubs nearby that are potential factors in the damage under investigation.

Type	Height	Distance	Ownership
T1 Deciduous	10 m	7 m	Owners
T2 Lime	10 m	8 m	Owners
S1 Shrubs	2 m	3 m	Owners
TG1 Deciduous	3 m	3 m	Owners

See sketch. Tree roots can be troublesome in cohesive (clay) soils because they can induce volumetric change. They are rarely troublesome in non-cohesive soils (sands and gravels etc.) other than when they enter drains, in which case blockages can ensue.

Broadleaf trees typically have wider spreading roots and higher water demands than coniferous species and many are better adapted to growing on heavy clay soils. Some are capable of sprouting from cut stumps or bare wood and most will tolerate pruning better than conifers.

<sup>1</sup> Driscoll L. R. (1983) “Influence of Vegetation on Clays” Geotechnique, Vol 33.  
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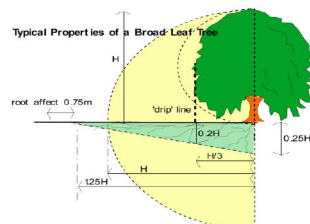


Typical proportions of a broadleaf tree. Note the potential root zone. It must be noted that every tree is different, and the root zone will vary with soil type, health of the tree and climatic conditions.

However heavy pruning of any tree should be avoided if possible, as it stimulates the formation of dense masses of weakly attached new branches which can become dangerous if not re-cut periodically to keep their weight down.

Limes (*Tilia*) are deciduous and can reach heights between 25-30m depending on health, environment and soil conditions.

They have a medium growth rate of around 300mm per year and medium root activity<sup>2</sup>. Maximum tree-to-damage distance recorded in the Kew survey was 20mtrs, with 50% of all cases occurring within 6mtrs<sup>3</sup>.



Typical proportions of a Lime tree, showing the potential root zone.

Lime roots can be moderately deep on clay soils. They have a life expectancy > 100 years and both old and young trees withstand quite heavy pruning and crown thinning.

Older trees frequently develop shoots around the base of the trunk. They are vulnerable to aphid attack that produces sticky exudates of honeydew.

Shrubs. Sometimes even small shrubs can cause localised subsidence damage. In the Kew Garden Survey data was collected between 1979 - 86 to record the number of roots of each species received for identification. Of the 1009 roots identified, 367 (36%) belonged to the family *Rosoideae* or Rose. Next came the family *Oleaceae* (Forsythia, Jasmin, Privet and Lilac) with 354 (35%) enquiries.

*Berberis*, *Viburnum*, *Hedera* (ivy), *Hydrangea* and *Pyracanthus* are also regularly associated with foundation movement, the latter having surprisingly large roots on occasions.

<sup>2</sup> Richardson & Gale (1994) "Tree Recognition" Richardson's Botanical Identifications

<sup>3</sup> Cutler & Richardson (1991) "Tree Roots & Buildings" Longman Scientific

**OBSERVATIONS**

The front elevation is the main area of damage to the property.

The following is an abbreviated description. Photographs accompanying this report illustrate the nature and extent of the problem.

**INTERNAL****Front Bedroom****Walls/Ceiling/Coving – Emulsion**

- 1mm diagonal crack to right hand division wall which commences approximately 1m above floor level and radiates diagonally to the rear of the room behind the radiator cover from the left reveal of the door to the walk-in wardrobe
- <1mm vertical crack at the junction of the right division wall and front elevation
- Cracking to the ceiling to the front elevation
- Crack to the ceiling at the junction of the bay and main room

**Right Hand Walk-in Wardrobe****Walls/Ceiling/Coving – Emulsion**

- Crack to the division wall in the front bedroom is reflected on this side of the wall
- <1mm slight diagonal crack to the left hand side of the door to the bathroom on the front elevation.

**EXTERNAL**

- A slight crack was noted to the left elevation of the stairs to the upper ground floor radiating from the junction with the front elevation of the main house.

**CATEGORY**

In structural terms the damage falls into Category 1 of Table 1, Building Research Establishment<sup>4</sup> Digest 251, which describes it as “very slight”.

Category 0	"negligible"	< 0.1mm
Category 1	"very slight"	0.1 - 1mm
Category 2	"slight"	>1 but < 5mm
Category 3	"moderate"	>5 but < 15mm
Category 4	"severe"	>15 but < 25mm
Category 5	"very severe"	>25 mm

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

<sup>4</sup> Building Research Establishment, [REDACTED]

## **DISCUSSION**

The damage at this stage is very minor but the pattern and nature of the cracks is potentially indicative of an episode of subsidence. If the damage is due to subsidence the cause of movement would appear to be either clay shrinkage or subsoil softening/erosion due to drains leaking.

Further site investigations will be required. Typically, these would involve trial pit(s) to determine the nature of the footings and subsoil and a localised drainage survey.

We will report further once these investigations have been completed.

In the event that our site investigations established that a localised escape of water is the most likely cause of the damage. We would recommend that upon conclusion of this claim, the insured considers commissioning a aboricultural report regarding the future maintenance warranted to trees T1 & T2, in terms of minimising the future risk of these trees causing root induced clay shrinkage subsidence to the property.

## **RECOMMENDATIONS**

On receipt of the Site Investigation report, we will advise on causation and the scope of mitigation works required.

**David Watt BSc (Hons)**  
**Crawford Claims Solutions – Subsidence**



TECHNICAL REPORT

128 Haverstock Hill

**PHOTOGRAPHS**

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