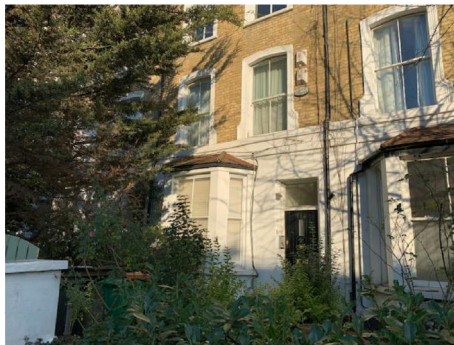




TECHNICAL REPORT ON A SUBSIDENCE CLAIM

[REDACTED]
114 Highgate Road Management Limited
114 Highgate Road
London
NW5 1PB



Prepared for

[REDACTED]
[REDACTED]

[REDACTED]

SUBSIDENCE CLAIM

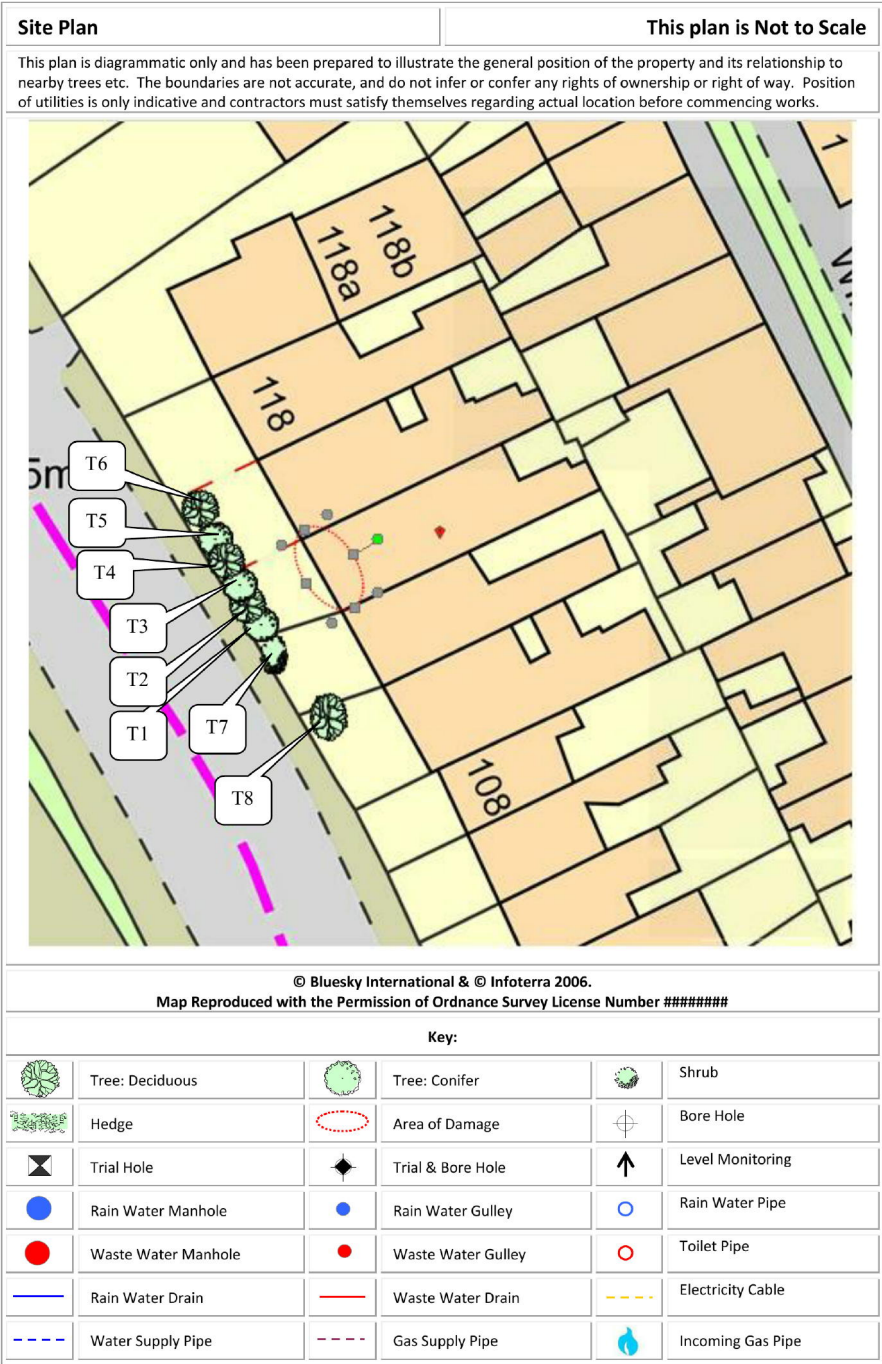
16th December 2019



[REDACTED]

Chartered Loss Adjusters

[REDACTED]



INTRODUCTION

We have been asked by Allianz Commercial 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

Cracking was first noticed in October 2019. The cracking significantly worsened which prompted the insured to contact insurers.

PROPERTY

Four storey town house converted into flats of traditional construction with part render and part brick walls surmounted by a pitched tiled roof.

HISTORY & TIMESCALE

Date of Construction	1890
Purchased	To Be Confirmed
Policy Inception Date.....	10/03/2008
Damage First Noticed	01/09/2019
Claim Notified to Insurer.....	11/11/2019
Date of our Inspection.....	04/12/2019
Issue of Report.....	16/12/2019
Anticipated Completion of Claim	December 2020

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 London Clay.

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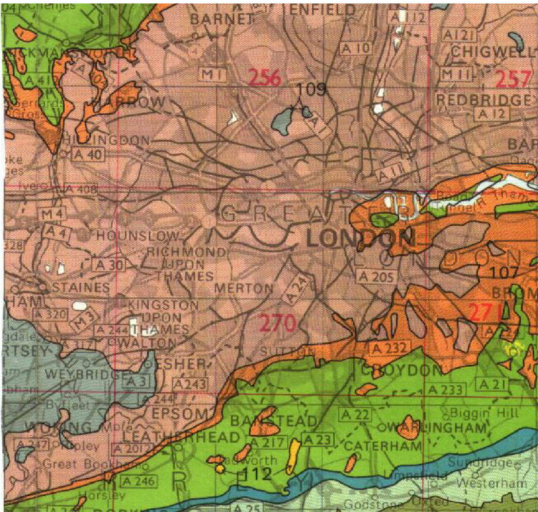
London Clays are marine deposits characterised by their silty, sandy composition. They are typically stiff, dark or bluish grey, weathered dark to mid-brown superficially with fine particle size (less than 0.002mm). Tomlinson¹ describes it as a ‘fat’ clay with high loadbearing characteristics due to pre-consolidation pressures in its geological history.

The upper horizon is often encountered at shallow depth, sometimes just below ground level. They have high shrink/swell potentials^{2,3} and can be troublesome in the presence of vegetation.

The superficial deposits are thought 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 vegetation⁴ 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.



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

There are several trees and shrubs nearby, some with roots that may extend beneath the house foundations. The following are of particular interest:-

Type	Height	Distance	Ownership
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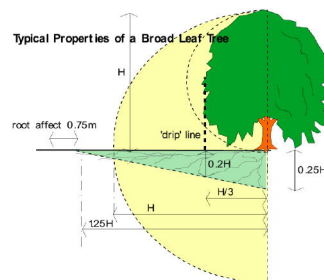
¹ Tomlinson M.J. (1991) “Foundations Design & Construction” Longman Scientific Publishing.
² B.S. 5930 (1981) “Site Investigations”
³ Driscoll R. (1983) “Influence of Vegetation on Clays” Geotechnique. Vol 33.
⁴ Table 1, Chapter 4.2, Para. 2.3 of N.H.B.C. Standards, 1986.
⁵ Driscoll R. (1983) “Influence of Vegetation on Clays” Geotechnique. Vol 33.
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Deciduous	10 m	3 m	Owners
Conifers	10 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.

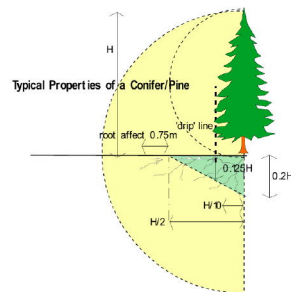
Broadleaf trees typically have wider spreading roots and higher water demands than coniferous species and many are better adapted to growing on heavy clay soils. Some are capable of sprouting from cut stumps or bare wood and most will tolerate pruning better than conifers.



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.

Conifers ~ The term is usually used to refer to cypresses and close relatives, but in the broader sense includes any trees that bear cones and nearly all of them have simple needle or scale like leaves, sometimes arranged into fronds as in the cypresses.



Typical tree proportions showing the root zone. This is a conservative estimate, as the zone can equal the height of the tree.

Generally they have less invasive roots and lower water demands than broadleaved species, but cypresses are often associated with subsidence as they are very fast growing, popular hedge plants that are frequently planted near houses.

OBSERVATIONS

The front bay window, front elevation and the front rooms on each of the flats are the areas of concern.

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

All Observations are viewing the property from the front.

INTERNAL

Cracking in en-suite to Flat C



Cracking to front bay in Flat A

The damage internally is confined to the rooms on the front elevation.

Flat A – Cracking in front lounge and the abutment of the bay window and the main house. Maximum crack width of 6-7mm.

Flat B – Cracking in living room to front elevation. Cracks to the front wall and the party walls. Maximum crack width 2-3mm.

Flat 2 – Cracking in living room adjacent to front elevation and the top floor bathroom and study. Cracks to the front wall and the party walls. Maximum crack width 2-3mm.

Communal areas – cracking to walls and ceiling around the front door and entrance hallway.

EXTERNAL

Cracking around front bay window

Cracking on front bay sill

There is cracking at the abutment of the front bay window and the main house as well as the front elevation at the junction of the party wall.

CATEGORY

In structural terms the damage falls into Category 3 of Table 1, Building Research Establishment⁵ Digest 251, which describes it as "moderate".

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.

⁵ Building Research Establishment, Garston, Watford. Tel: 01923.674040

DISCUSSION

The pattern and nature of the cracks is indicative of an episode of subsidence. The cause of movement appears to be clay shrinkage.

The timing of the event, the presence of shrinkable clay beneath the foundations and the proximity of vegetation where there is damage indicates the shrinkage to be root induced. This is a commonly encountered problem and probably accounts for around 70% of subsidence claims notified to insurers.

Fortunately, the cause of the problem (dehydration) is reversible. Clay soils will re-hydrate in the winter months, causing the clays to swell and the cracks to close. Provided the cause of movement is dealt with (in this case, vegetation) there should not be a recurrence of movement.

No structural changes to the building have been carried out which has contributed to the current subsidence related damage under investigation. We are not aware of any previous underpinning.

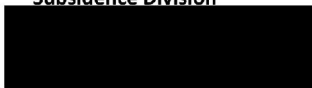
RECOMMENDATIONS

The cause of the movement needs to be dealt with first. We have completed a Soil Risk Analysis (VISCAT Assessment) and we are satisfied that your trees can be removed.

We will obtain an Arborists report and quotation for the recommended tree works and undertake statutory checks for Preservation Orders or whether the tree(s) are in a Conservation Area.

Provided the tree management works are completed expeditiously, consideration may then be given to carrying out the appropriate repairs to the property.

Daniel Willet BSc MCIQB MFPWS
Subsidence Division

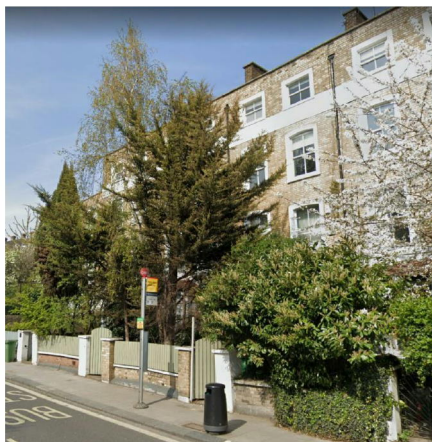


PHOTOGRAPHS



Front Wall cracking in Flat B





Vegetation in the Insureds and neighbours front gardens

