

TECHNICAL REPORT ON A SUBSIDENCE CLAIM

Crawford Reference: [REDACTED]

[REDACTED]
Waterlooville
PO8 8PT



prepared for

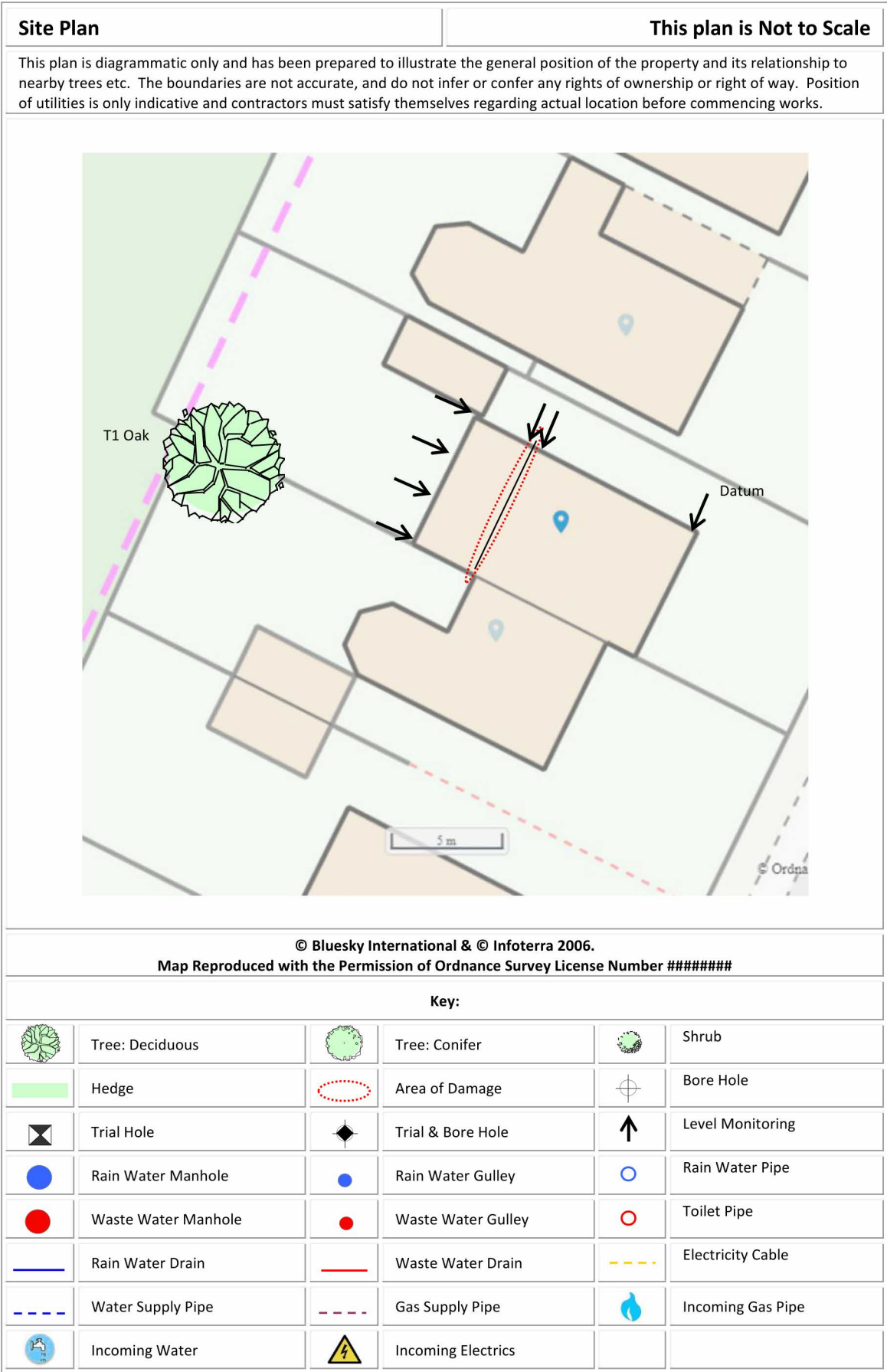
Midas Underwriting AXA

[REDACTED]
SUBSIDENCE CLAIM

DATE 14 September 2022

Crawford Claims Solutions – Subsidence
Cartwright House, Tottle Road,
Riverside Business Park, Nottingham, NG2 1RT
Tel: 0115 943 8266

Chartered Loss Adjusters



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INTRODUCTION

We have been asked by Midas Underwriting AXA 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

Crawford & Company dealt with a previous subsidence claim in 2012 for the previous Insurers. The cause of subsidence to the rear extension was investigated and found to be tree-related clay shrinkage. Oak roots were found and the Arboriculturist recommended 3 Oak trees, 2 in the neighbouring garden to the right and one to the left, were removed. The two to the right were not protected and were removed by the neighbour. The tree to the left (T1) was protected so level monitoring evidence was required. This showed no movement over Summer 2012 which meant there was insufficient evidence to apply for removal. Recommendations were reviewed and an application was made to reduce the T1 Oak which was approved by the Council and then undertaken by the neighbour. We understand she has reduced it again on one subsequent occasion and her property is now on the market. Your Policyholder returned from Summer holiday recently and noticed the cracks starting in the rear extension in the same area as previously. She was therefore concerned that damage would re-appear every hot summer.

PROPERTY

Two storey semi-detached house of traditional construction with brick walls surmounted by a hipped, tiled roof. There is a single storey extension at the rear.

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HISTORY & TIMESCALE

Next Steps:

1. Level monitoring readings
2. Further arboricultural report

Date of Construction	c.1970
Purchased	2009
Policy Inception Date	01/10/2020
Damage First Noticed.....	03/09/2022
Claim Notified to Insurer.....	08/09/2022
Date of our Inspection	13/09/2022
Issue of Report	28/09/2022
Anticipated Completion of Claim	Winter 2023

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 SUSE suggests the underlying geology to be Lambeth Group, previously called the Woolwich and Reading Beds.

Woolwich and Readings Beds occur in three facies¹ comprising marine fossiliferous sand (East Kent), estuarine deposits known as Woolwich Beds (West Kent, East Surrey and Essex) and fluvial strata known as the Reading Beds (West and North). They are a sedimentary complex comprising a basal bed of glauconic sands, loams and pebbles with variable clays and sands above.

Page and Skipper² regard them as “highly diverse – there is probably no other group of sediments within the UK that displays such a range of textures and fabrics within such a small stratigraphical thickness”.

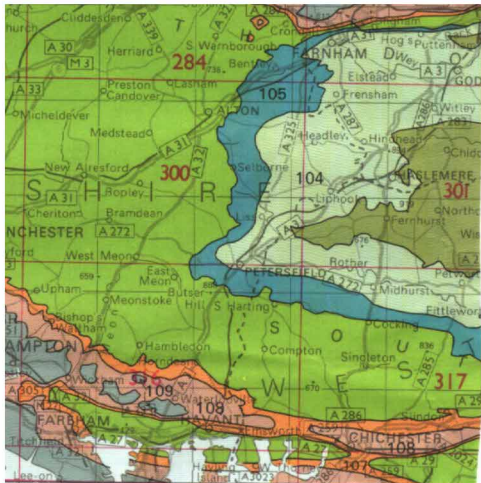
The sands are yellow, greenish brown, containing layers of mottled clay. They have an average depth of around 15mtrs. The Reading beds consist of mottled, plastic clays and light coloured sands with thin bands of flint pebbles.

From an engineering perspective they are probably more prone to loss of fines and erosion due to flowing water (leaking drains etc.) than clay shrinkage. However, if there is a high clay content they can suffer root induced clay shrinkage (seasonal shrinkage alone is probably quite rare) although the movement is usually fairly modest, depending on the provenance of the clay in the soil matrix.

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

¹ Sherlock R.L. (1962) "LONDON & THAMES VALLEY" H.M.S.O.

² Page D. & Skipper J (2000). "Ground Engineering Journal"



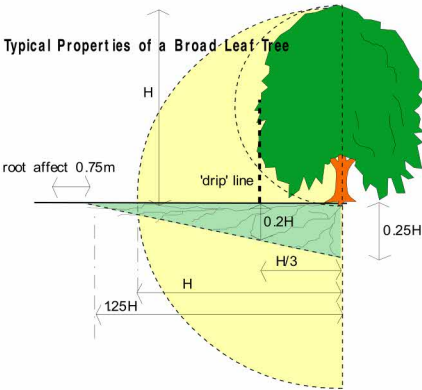
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VEGETATION

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
Oak	20 m	12 m	Neighbour

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. Oak trees (*Quercus*) are deciduous and native to Europe. They can reach heights in excess of 35m, but more typically grow to between 18 - 25m, depending on health, environment and soil conditions. They have a medium growth rate of around 250mm per year and strong root activity³.



Typical proportions of an Oak showing the potential root zone. They have by far the most aggressive of root systems, often spreading considerable distances (1.5 x height or more).

Maximum tree-to-damage distance recorded in the Kew survey was 30mtrs, with 50% of all cases occurring within 9.5mtrs⁴. Life expectancy > 100 years, although they are vulnerable to insect and fungal attack. Old and young trees are tolerant of quite heavy pruning and crown reduction, although re-growth can be an ongoing problem.

³ Richardson & Gale (1994) "Tree Recognition" Richardson's Botanical Identifications
⁴ Cutler & Richardson (1991) "Tree Roots & Buildings" Longman Scientific

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Oaks are, in my experience, worthy of considerable respect when dealing with subsidence claims. Their root system extends for surprising distances and can be associated with particularly high soil suctions.

Because of difficulties in controlling the oak, and its vigorous root system, I regard it as being far more significant (in terms of a subsidence league table) than either the willow or poplar tree.

OBSERVATIONS

The area of damage is the rear extension.

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

INTERNAL



Left junction



Right junction

Open Plan Kitchen/Breakfast Room (Extension)

Slight vertical crack at left extension junction translating to horizontal crack at base of arch

Slight vertical crack at right junction

Drop of flooring to the extension causing a slight lip in the flooring at the junction

EXTERNAL

Oak tree

Right Elevation

Stepped vertical crack at junction

CATEGORY

In structural terms the damage falls into Category 2 of Table 1, Building Research Establishment⁵ Digest 251, which describes it as "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.

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



DISCUSSION

The damage indicates very slight renewed subsidence movement in the same area as the previous claim. The cause will be clay shrinkage exacerbated by moisture extraction by roots from the Oak tree (T1) in the rear garden of No.95 Sutton Road. This was previously reduced to mitigate the subsidence, together with removal of 2 Oaks in the rear garden of 99 Sutton Road. This mitigation had been successful up until this summer, which has been particularly hot and dry. The tree has a full crown and we understand was last reduced around 2019.

RECOMMENDATIONS

Given the minimal damage/movement, we believe a tree management programme (further reduction and then planned regular maintenance) will be sufficient to keep the extension stable and free from further subsidence. However, this will be reviewed by a specialist Arboriculturist. We will also arrange level monitoring to re-start to provide further information for the Arboriculturist to consider when making their recommendations.

Assuming tree works are carried out before Spring 2023, the monitoring should extend through Summer 2023 to establish if this has been effective. If so, then repairs are relatively minimal and will be below the policy excess.

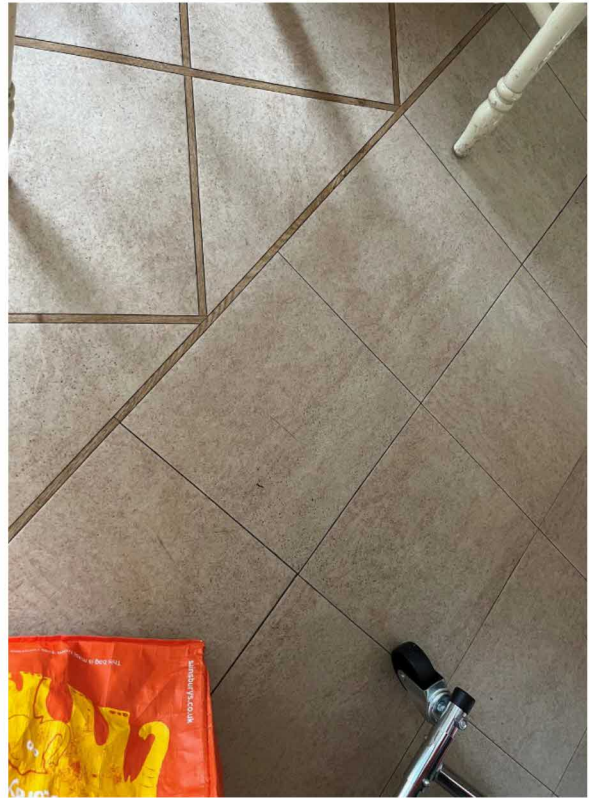
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PHOTOGRAPHS



Right junction



Floor junction

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