



2 The Boulevard, City West One Office Park, Gelderd Road, Leeds, LS12 6NY
01924 428691

Policyholder: Mr Mark Hamilton-Bowker

Subject Property Address:

12 Brooklyn Drive
Emmer Green
READING
RG4 8SS

INSURANCE CLAIM

CONCERNING SUBSIDENCE DAMAGE

ENGINEERING APPRAISAL REPORT

This report is prepared on behalf of Fairmead Insurance 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: 08/01/2021

Updated: 17/12/2021

Our Ref: 9075732

INTRODUCTION

This report has been prepared by our Building Surveyor, Alistair Sutton BSc (Hons), and is being investigated in accordance with our Project Managed Service.

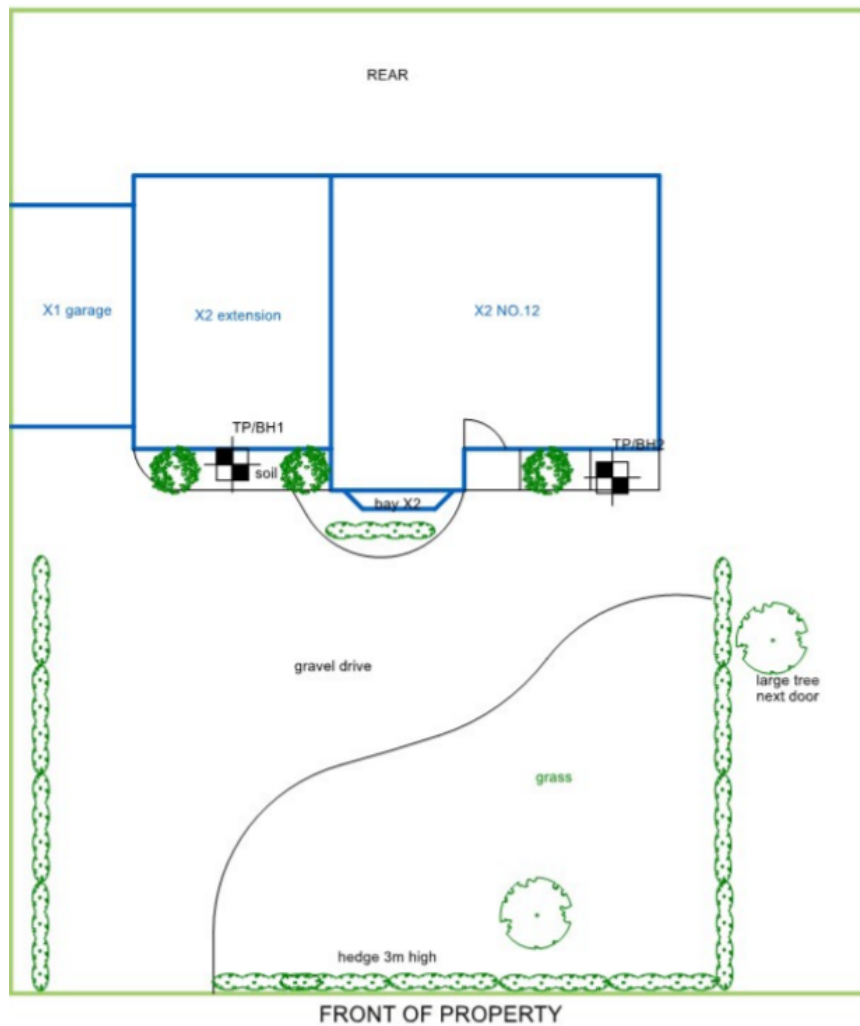
Unless stated otherwise all directions are referred to as looking towards the front door from the outside the property.

DESCRIPTION OF BUILDING

The subject property is a detached house, in a suburban location, on a plot that is level. The overall layout is recorded on our site plan.

The property has also been extended to the left-hand side historically.

The general layout of the site is shown below;



There are trees within influencing distance of the property.

CIRCUMSTANCES OF DISCOVERY OF DAMAGE

The policyholder and homeowner, Mr Hamilton-Bowker, first discovered the damage in August 2020.

The Policyholder first registered a claim for subsidence with current Insurers in 2013. The claim was repudiated. The Policyholder has proceeded to repair the crack damage as advised but noticed the damage keeps returning. Recently, the damage has become much more apparent. He subsequently contacted his insurers.

NATURE AND EXTENT OF DAMAGE

The principal damage is to the right-hand side of the property, taking the form of cracks to render externally with corresponding cracking to plaster finishes internally. The pattern of damage indicates a mechanism of downwards movement towards the front and right-hand side of the property.

A secondary area of less significant damage is to the left-hand side of the property, manifesting itself as plaster cracking, with a possible indicated mechanism of movement towards the front of the site.

Significance

The level of damage is slight and is classified as category 2 in accordance with BRE Digest 251 - Assessment of damage in low-rise buildings.

Onset and Progression

Mr Hamilton-Bowker has advised that damage first commenced historically but has worsened within the last three months.

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

The ground investigation was carried out by Auger on 23/11/2020, or details of the trial pit and borehole locations please see plan above.

Trial Pit 1/Borehole 1

This was located to the left-hand side of the property, to the front elevation of the two-storey extension. The trial pit excavation revealed the building to be constructed off of a 500mm thick concrete strip foundation, the underside of which is located 1m below ground floor level externally. In turn, this is supported to a depth of 2.5m by no-shrinkable gravels. At 2.5m in depth, a clay sub-soil with an intermediate potential for volumetric change was encountered, before chalk from 3m in depth. At 3.3m the borehole was abandoned as target depth was reached.

Roots were observed to the underside of the foundation only but cannot be causing volumetric change to a non-shrinkable gravel. These roots were found to be emanating from shrubs including a Pittosporum.

Trial Pit 2/Borehole 2

This was located to the right-hand side of the front elevation of the property. The trial pit excavation revealed the building to be constructed off of a c450mm thick concrete strip foundation, the underside of which is located 900mm below ground floor level externally. In turn, this is supported to a depth of 2.4m by no-clay soils. From 2.4m -3.2m, chalk was encountered before the trial pit was abandoned as target depth was reached.

Laboratory testing of the clay soils has confirmed a state of desiccation at 1.9m in depth and both low, medium and high volume change potential clay soils, the high-volume change potential being desiccated. Roots were observed to the underside of the foundation at 900mm and at 1.4m and identified as follows:

TH/BH2, 0.9m		
5 no.	Examined root: similar to EUONYMUS (Spindle) - bushes with small green-white flowers growing in clusters, that turn into popcorn-like pink fruits. Tentative.	Alive, recently*.
1 no.	Examined root: FUCHSIA.	Alive, recently*.
9 no.	Unfortunately all with insufficient cells for identification.	
TH/BH2, 1.4m		
1 no.	Examined root: the family LEGUMINOSAE (a group of closely related trees: Robinia (False Acacia), Laburnum, Sophora (Pagoda tree), Gleditsia (Honey Locust), Cercis (Judas tree/Redbud), Albizia (Silk tree), Acacia (Mimosa), as well as such shrubs as Wisteria, Lupins, Gorse and Brooms).	Dead*.

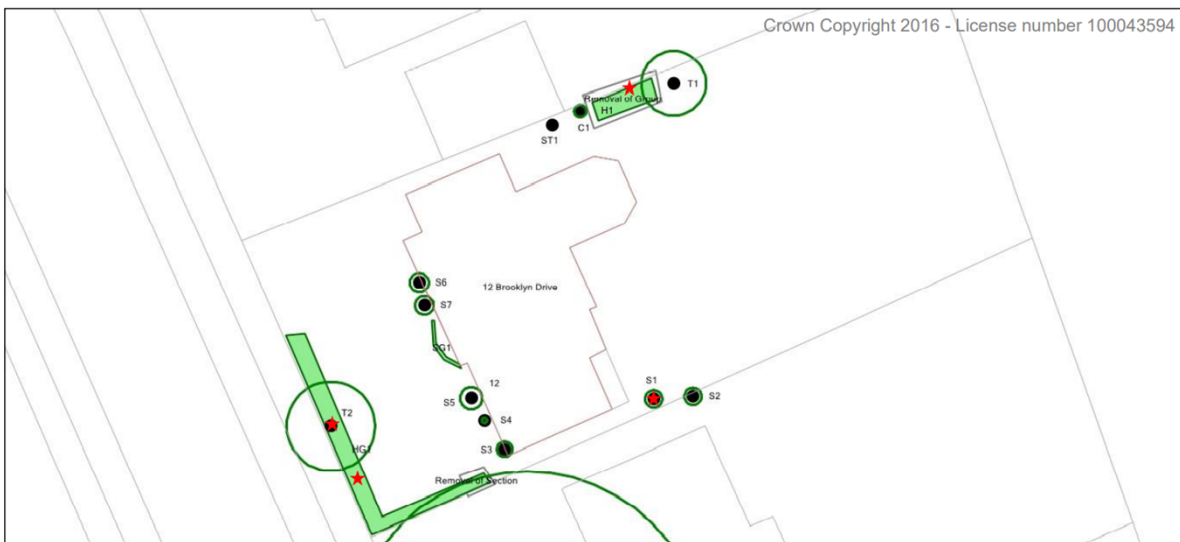
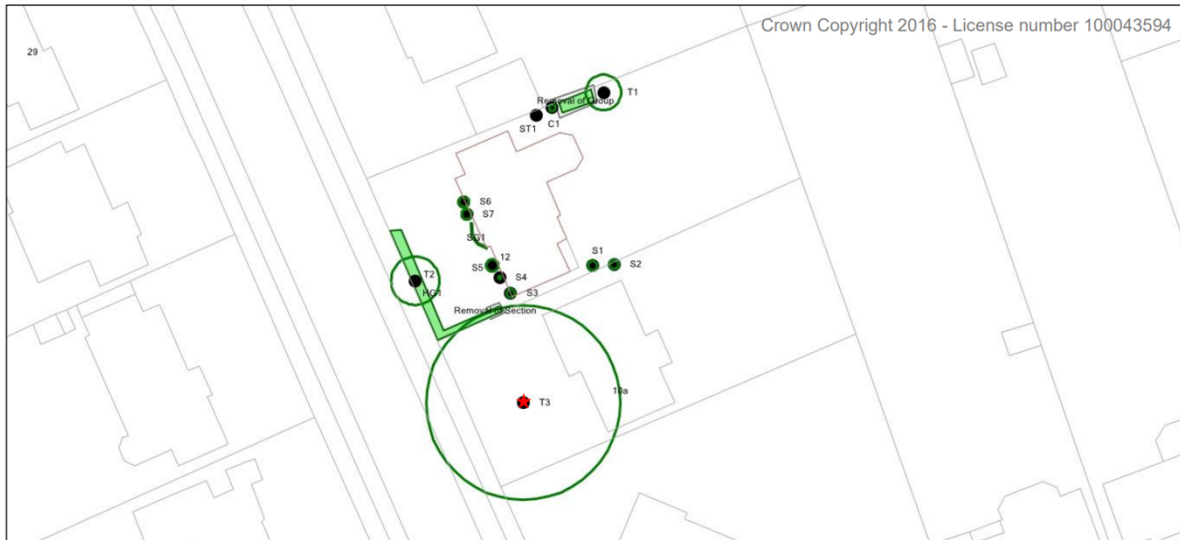
No drainage Investigations have been undertaken as the site investigation has shown the soil to be dry which suggests the drains have not adversely affected the soils.

Arboriculturalist advice

Subsequent Arboriculturalist advice identified a Laurel, Photinia, and Willow tree (all under Mr Hamilton-Bowker's ownership) together with a Pagoda tree (under neighbours' ownership) to be within influential distance and recommendations made towards their removal.

The Pagoda tree was identified as having a Tree Preservation Order in place.

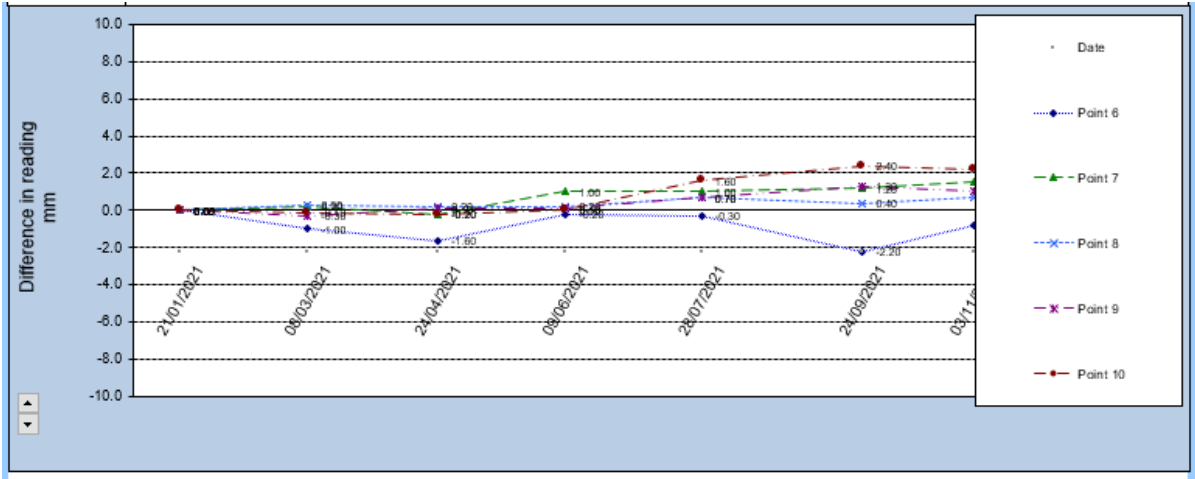
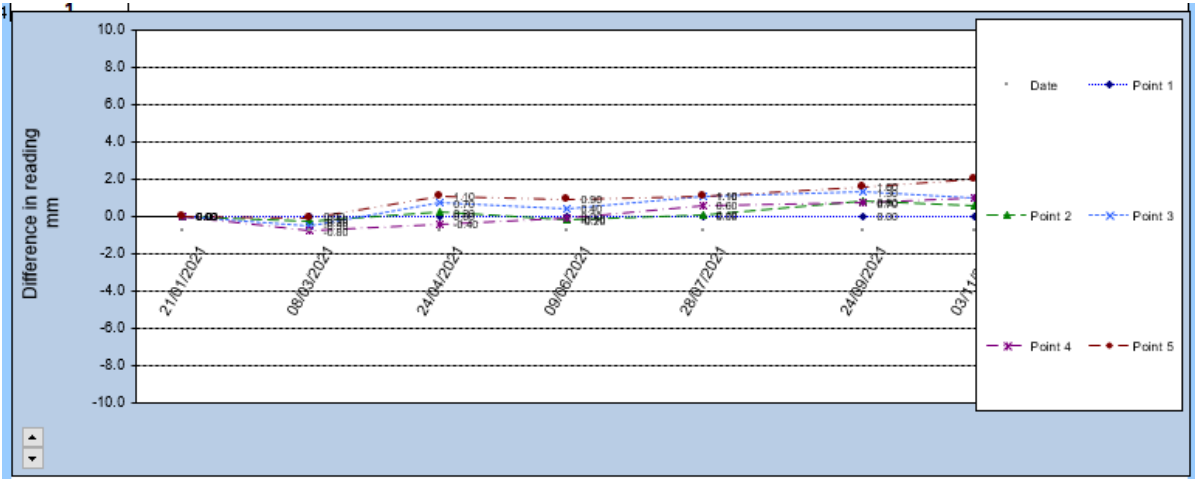
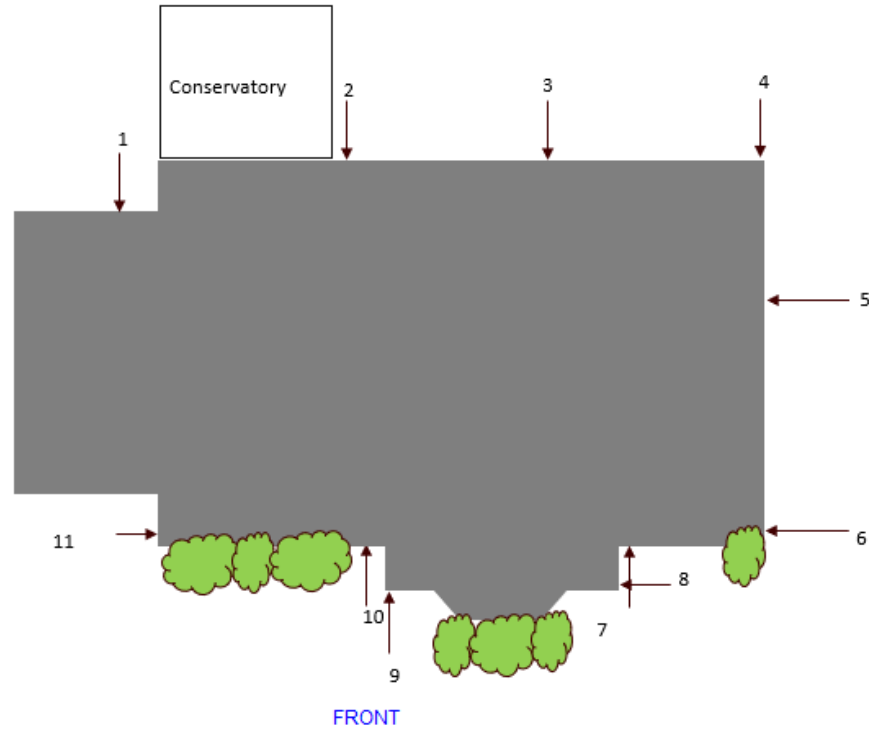
Tree No:	Species	Works Required
H1	Laurel	Fell and treat stump (deciduous).
S1	Photinia	Fell and treat stump (deciduous).
HG1	Laurel	Remove section of hedge group and grind stumps to allow a minimum clearance of 3m from the front RHS corner of the property. No work to remaining hedge in group. (Total 1.5m in length to remove).
T2	Willow	Fell and treat stump (deciduous).
T3	Pagoda Tree	Fell and treat stump (deciduous).

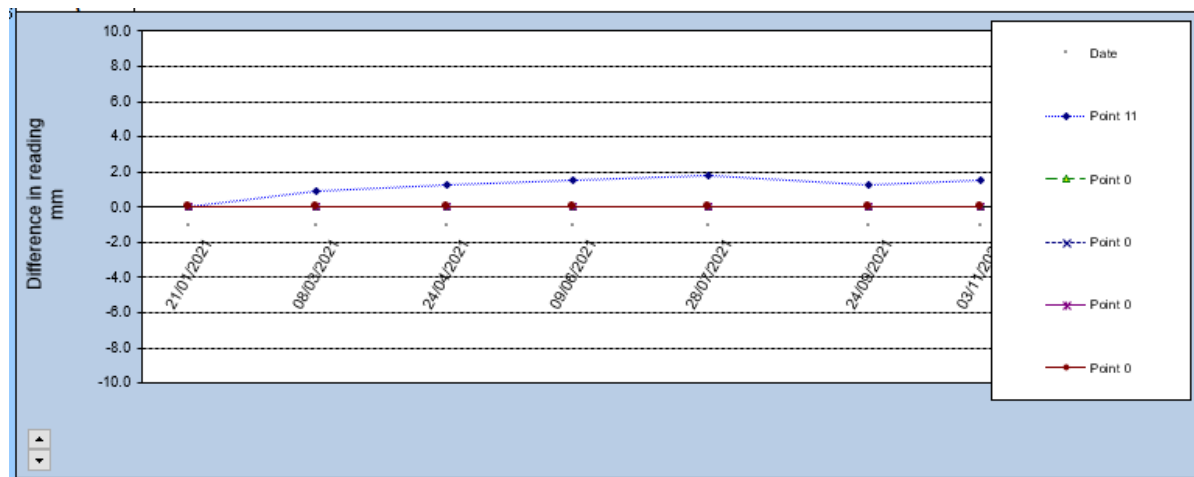


MONITORING

We considered that level monitoring would be required. This is to confirm the operation of root exacerbated clay shrinkage (cyclical movement).

A period of level monitoring between January 2021 and November 2021 has in general seen a slight cyclical movement through the summer months of 2021, with the greatest degree of movement (2mm of downward and recovery movement) observed to the front right corner of the property – monitoring Point No 6 closest to the Pagoda tree.





CAUSE OF DAMAGE

Taking an overview of all the site investigation 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 nearby vegetation.

I base this view on the fact that the foundations of the property - in the area of damage to the right-hand side - 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. Roots are present in the clay subsoil 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 roots.

I am satisfied that there is no factor other than root exacerbated clay shrinkage that is causing the damage to the right-hand side of the property.

RECOMMENDATIONS

In order to confirm mitigation requirements and the source of roots identified within the site investigation, an arboricultural survey was commissioned as outlined above. A scheme of vegetation management, including removal, was subsequently recommended.

Following receipt of the arboricultural advice mitigation works were completed in regard to trees / vegetation under Mr Hamilton-Bowker's ownership in June 2021 – i.e. H1 (Laurel), S1 (Photinia), HG1 (Laurel) and T2 (Willow).

Following the above mitigation, the only vegetation / tree remaining is the T3 (Pagoda).

REPAIRS

Based upon tree works being undertaken, we have not yet decided on the final type of repair required but have produced an outline of the most likely requirements. This involves undertaking superstructure repairs and redecoration. This decision has been taken based on our knowledge and experience of dealing with similar claims. In addition, the results of the site investigation and laboratory testing have been taken into account. At present we estimate the likely costs to be in the region of £18,000.

However, based upon our experience in dealing with similar claims, should mitigation not be undertaken and the tree remain, then it is envisaged that foundation works shall be required (i.e underpinning, mini piles etc) and the overall cost of the repairs estimated at £50,000.

Alistair Sutton BSc (Hons)
Building Consultant
For and on behalf of Sedgwick

Lauren Sharples
Claims Technician
Direct dial: 01924 428740
E-mail: Lauren.Sharples@uk.sedgwick.com