

ADDENDUM TECHNICAL REPORT

Crawford Reference: SU2206126

**Stanton Guildhouse Ltd
The Stanton Guildhouse
Broadway
Worcestershire
WR12 7NE**



prepared for

**Aviva - Commercial
Commercial Claims/Subsidence
Level 3 West
Perth
PH2 0NH**

Claim Reference 4502193098-1



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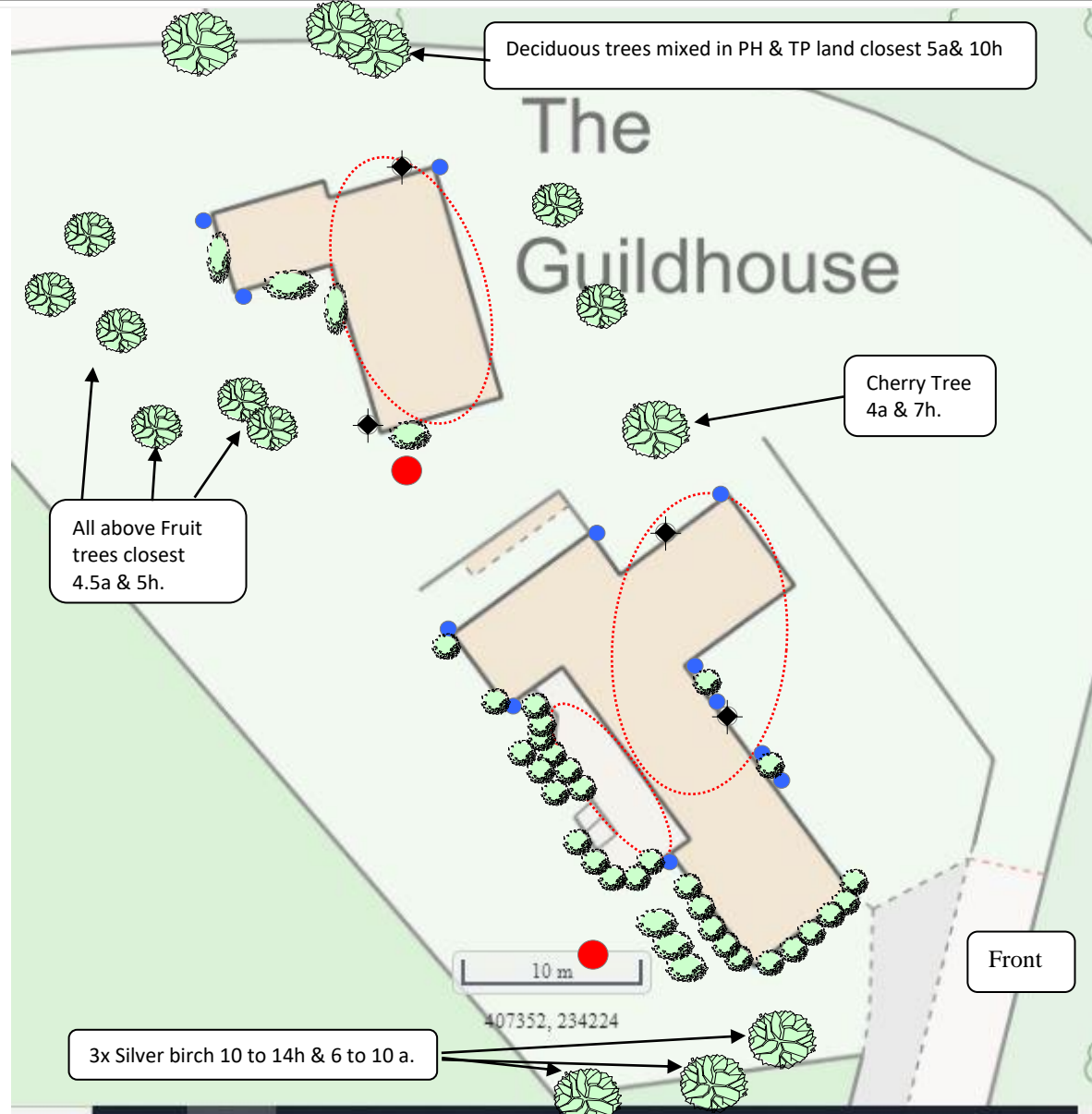
SUBSIDENCE CLAIM

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Site Plan

This plan is Not to Scale



















This plan is diagrammatic only and has been prepared to illustrate the general position of the property and its relationship to nearby trees etc. The boundaries are not accurate, and do not infer or confer any rights of ownership or right of way. Position of utilities is only indicative and contractors must satisfy themselves regarding actual location before commencing works.



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Key:

	Tree: Deciduous		Tree: Conifer		Shrub
	Hedge		Area of Damage		Bore Hole
	Trial Hole		Trial & Bore Hole		Level Monitoring
	Rain Water Manhole		Rain Water Gully		Rain Water Pipe
	Waste Water Manhole		Waste Water Gully		Toilet Pipe
	Rain Water Drain		Waste Water Drain		Electricity Cable

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INTRODUCTION

We have been instructed by insurers to investigate a claim for subsidence at the above property. The area of damage, timescale and circumstances are outlined in our initial Technical Report. This report should be read in conjunction with that report.

To establish the cause of damage, further investigations have been undertaken and these are described below.

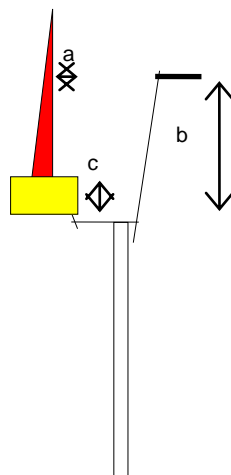
INVESTIGATIONS

The following investigations were undertaken to identify the cause of movement.

TRIAL HOLES

A trial hole was excavated to expose the foundations - see site plan for location and the diagram below for details. Four trial holes have been undertaken at the property as follows.

- Trial hole one was undertaken on the front elevation of the main building to its lefthand side. This confirmed that at this point the structure benefitted from a concrete foundation which stepped out from the face of the buildings wall by 180mm. This foundation was 680mm thick in total and the underside of the foundation was 1100 deep underground and sited in soils described as being stiff brown and grey CLAY.
- Trial hole two was undertaken against the main building on the internal courtyard side of the outrigger on the building which housed the ground floor bedroom. This confirmed that the building at this point had a concrete foundation which projected 190mm out from the external face of the wall. This foundation was 700mm thick and it was 1000mm deep underground to its underside. The foundations at this point sat in soils described as being stiff brown and grey CLAY.
- Trial three at the property was undertaken on the front lefthand corner of the workshop beside the entrance door. This confirmed that the structure benefitted from a concrete foundation which projected 170mm out from the face of the building and was 110mm thick. The foundations of the workshop were found to be 810mm deep underground at this point of the building and they sat in soils described as being stiff brown and grey CLAY.
- A final trial hole, trial hole 4 was taken on the rear right hand side of the workshop and this confirmed that at this point the structure benefitted from a concrete foundation which projected away from the external face of the building by 100mm, the foundation was found to be 500mm thick and it was 1900mm deep to its underside. As with each other trial hole the foundations were found to be sitting in soils described as being stiff brown and grey CLAY.



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No.	Borehole Depth	Footing (a)	Underside (b)	Thickness (c)
TH1	3.00 m.	180 mm.	1,100 mm.	680 mm.
TH2	3.00 m.	190 mm.	1,000 mm.	700 mm.
TH3	3.00 m.	170 mm.	810 mm.	110 mm.
TH4	3.00 m.	100 mm.	1,900 mm.	500 mm.

AUGERED BOREHOLES

A 50mm diameter hand auger was sunk - see site plan for location(s). Boreholes were taken from within each trial hole to a depth of 3000mm underground.

- Borehole number one confirmed that from 1300mm deep underground to 3000mm deep underground that the soils changed to become stiff grey-brown slightly gravelly clay. Roots were recovered within this borehole soil sample beneath the depth of the foundations of the building and to a depth of 2500mm underground.
- Borehole number two confirmed that there were no changes in the soils to the terminated borehole depth of 3000mm underground. Vegetation roots were recovered in this borehole from the underside of the foundations to a depth of 2500mm underground.
- Borehole number three confirmed that from 1100mm underground the soils changed to become stiff grey-brown slightly gravelly clay to the terminated borehole depth of 3000mm underground. Vegetation roots were recovered in the soils sampled beneath the depth of the foundations of the structure at this point to a depth of 3000mm underground where the borehole was terminated.
- Borehole number four confirmed that there were no changes in the soils recovered for sampling to the terminated borehole depth of 3000mm underground. Roots were recovered in the soil samples taken from beneath the foundations and to the depth of 3000mm underground.

SOIL SAMPLES

Soil samples were retrieved from the bore, wrapped in clingfilm before being bagged and deposited with a testing laboratory the same day. The laboratory have undertaken testing to the samples and they have determined there is evidence of root induced desiccation.

ROOTS

Roots were also retrieved from the trial hole and they have been analysed by a botanist for identification. They were confirmed to be from *Salix* spp, *Laurus* spp. *Pomoideae* spp. and *Fraxinus* spp. which are Willow, Laurel, Apple or Pear or Hawthorn plus other species and from Ash Trees.

DRAINS

A CCTV survey has been undertaken to the drainage systems at the property and this has highlighted some defects with the drains which shall need to be attended to by the customer under a separate accidental damage to drains claim if the policy provides such cover.

The drains are evidenced not to be the cause of the subsidence at the structure due to the root presence in desiccated clay soils beneath the foundations of the structures.

We shall need to be notified when the drains have been attended to and repaired.

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 have though been advised that the side room within the workshop has previously been underpinned.

RECOMMENDATION

Although the cause of the movement needs to be dealt with, we note the vegetation is subject to a Preservation Order. Unfortunately, current legislation requires certain investigations to be carried out to support an application for the tree works.

Typically, these investigations would involve trial pit(s) to determine the depth and type of footings, boreholes to determine the nature of the subsoil/influence of any roots and monitoring to establish the rate and pattern of movement. The monitoring data provided must be sufficient to show a pattern of movement consistent with the influence of the vegetation and therefore it may be necessary to carry out the monitoring for up to a 12 month period.

It has also been necessary to obtain a specialist Arboricultural Report. We shall provide you with a copy of this report and the Arboricultural consultants recommendation.

We will report further once these investigations have been completed.

HISTORY & TIMESCALE

We await insurers advice on how they wish us to proceed with the claim.

Date of Construction	1963
Purchased	1963
Policy Inception Date.....	23/10/2021
Damage First Noticed	25/09/2022
Claim Notified to Insurer	27/10/2022
Date of our Inspection.....	05/12/2022
Issue of Report.....	06/07/2023
Anticipated Completion of Claim	Autumn 2024
Anticipated Duration of Works.....	10 Weeks
Anticipated Completion of Works	Autumn 2024

Yours faithfully,

Carl Billings

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