

ADDENDUM TECHNICAL REPORT

Crawford Reference: SU1703328

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Prepared for

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Beaufort House
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Claim Reference 179768

SUBSIDENCE CLAIM

DATE 20th November 2017



Crawford[®]

Specialist Property Services UK - Subsidence

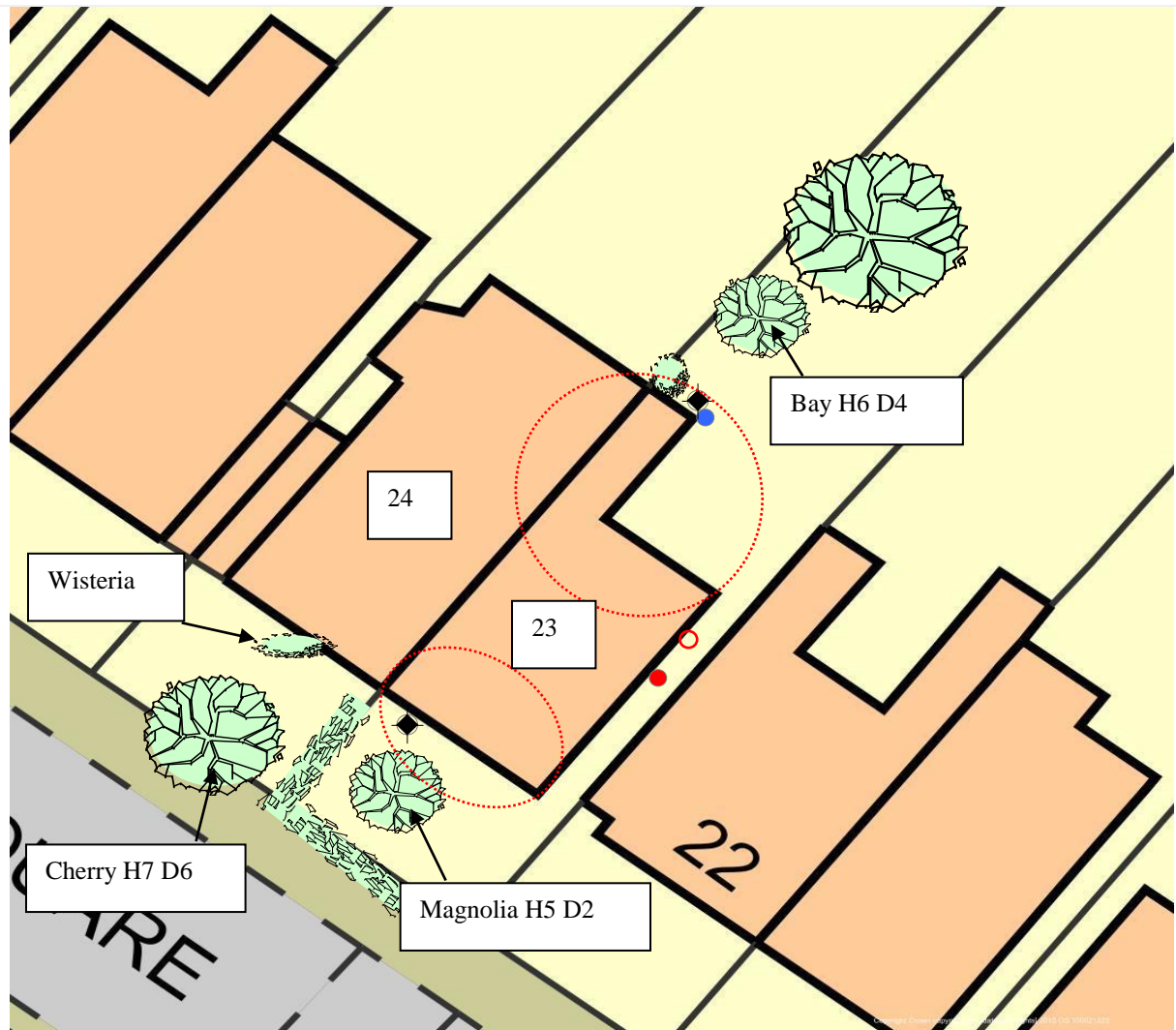
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Watford, Herts, WD17 1AP
Tel: 01923 471755
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Site Plan

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
	Water Supply Pipe		Gas Supply Pipe		Incoming Gas Pipe
	Incoming Water		Incoming Electrics		

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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.

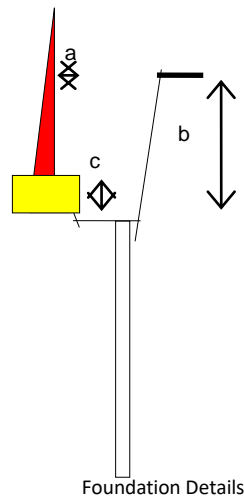
To establish the cause of damage, further investigations have been undertaken and these are described below.

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. Trial Hole 1 revealed a brick footing with no projection founded at a depth of 0.25m below ground level which bears onto a brown slightly sandy silty clay.



No.	Borehole Depth	Footing (a)	Underside (b)	Thickness (c)
TH1	3.00 m.	0 mm.	250 mm.	250 mm.

AUGERED BOREHOLES

A 50mm diameter hand auger was sunk - see site plan for location(s). Borehole 1 confirmed the continuation of the clay subsoil encountered within the trial pit, with roots to a depth of 1.6m below ground level. The borehole remained dry and open upon completion.

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 instructions to test the samples to determine if there is evidence of root induced desiccation.

ROOTS

Roots were retrieved from the trial hole and have been submitted to a botanist for identification.

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DRAINS

The site investigations did not reveal any suggestion that leakage from drainage is adversely affecting the property. As such, a drainage investigation was not warranted.

DISCUSSION

Unfortunately, it was not possible to excavate the trial pit to the front of the property as originally intended as the site investigation contractor felt that there was insufficient room to excavate the trial pit due to the presence of the raised terrace. The investigation was therefore restricted to the trial pit and borehole to the rear of the property. The results of the site investigations here confirm that the cause of subsidence is root-induced clay shrinkage. The clay is plastic and thus will shrink and swell with changes in moisture content. Roots have extracted moisture below the depth of the footings, thus causing differential foundation movement to occur. This is supported by the following investigation results:-

- The moisture content profile indicates a reduction in moisture content between a depth of 0.4m and 1.9m which is indicative of desiccation at this level. This is also co-incident with the depth of root activity.
- Atterberg limit testing indicates that the soil has a high plasticity and hence will shrink and swell with changes in moisture content.
- Roots were found to a depth of 1.6m.
- Shear vane readings indicate an increase in shear strength of the clay between a depth of 0.4m and 1.5m indicating desiccation at this depth

RECOMMENDATION

The cause of the movement needs to be dealt with first. The results of the site investigation did not formally implicate the vegetation within the rear garden as due to the nature of the borehole sampling, it is not always possible to retrieve root evidence from the borehole samples. Whilst we are satisfied that your bay tree can be removed, we propose obtaining an Arboricultural Report to comment on vegetation management works required at both the front and rear of the property prior to proceeding with any mitigation works.

Following completion of the tree management works, we will undertake a suitable period of monitoring to confirm stability has been achieved before undertaking repairs to the property.

HISTORY & TIMESCALE

Date of Construction	Circa 1840
Purchased	2007
Policy Inception Date	31/07/2012
Damage First Noticed	July 2017
Claim Notified to Insurer	29/09/2017
Date of our Inspection.....	03/10/2017
Issue of Report	21/12/2017
Anticipated Completion of Claim	Summer 2018

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