

TECHNICAL REPORT ON A SUBSIDENCE CLAIM

Crawford Reference: SU1704565

**52 Crowlees Road
Mirfield
West Yorkshire
WF14 9JE**



Prepared for

**RSA
6th Floor
Bowling Mill
Dean Clough
Halifax
HX3 5WA**

Claim Reference 201712008117

SUBSIDENCE CLAIM

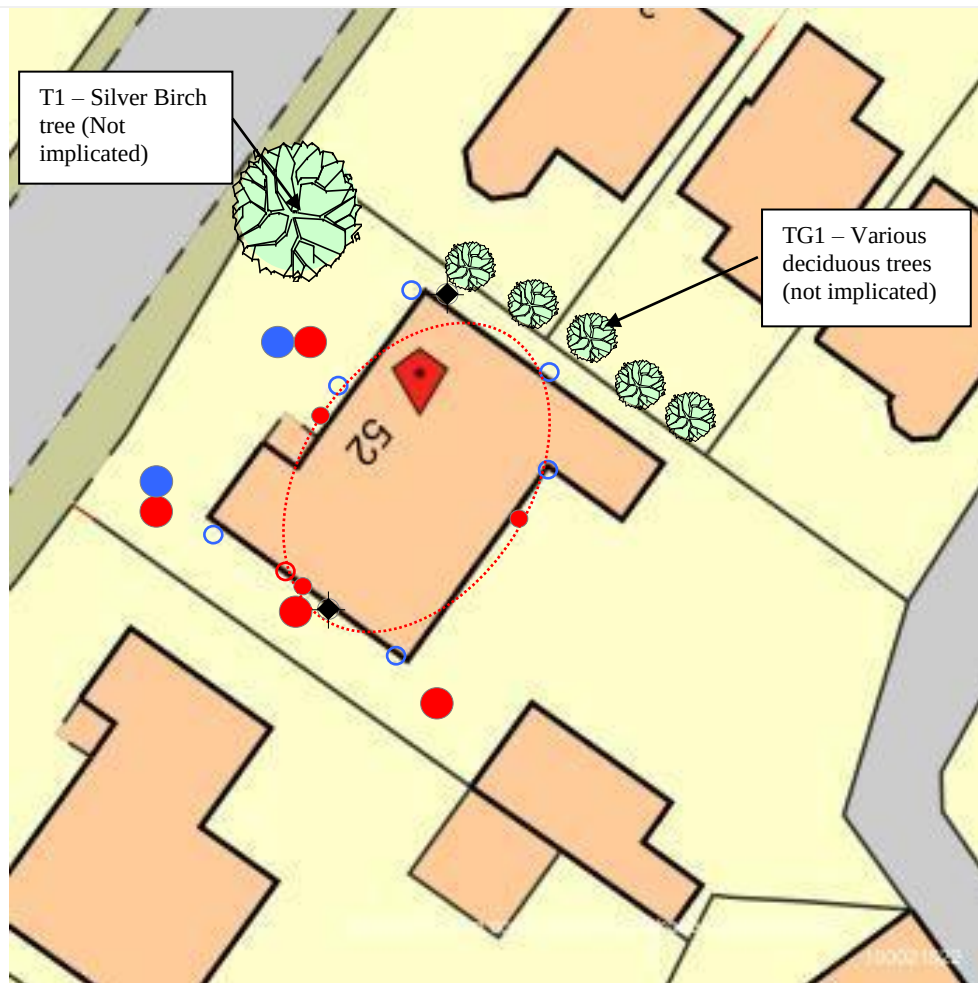
24 January 2018



Subsidence Division
Cartwright House
Tottle Road
Riverside Business Park, Nottingham, NG2 1RT
Tel: 0115 943 8230
Fax: 0121 200 0309

Site Plan**This plan is Not to Scale**

This is an Aerial Photograph of the property and the immediate surrounding area. The positions of utilities etc are only indicative and contractors must satisfy themselves regarding actual location before commencing works.



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Map Reproduced with the Permission of Ordnance Survey License Number #####

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 asked by RSA 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

In late November 2017 following discovery of internal cracking to the property that the advice of a local builder was sought. Having been aware of the cracking for a number of months previously and noting that they had progressed the builder advised that the property could be suffering from subsidence. Becoming concerned a claim was submitted to Insurers for consideration.

PROPERTY

Single storey detached bungalow of traditional construction with bradstone walls surmounted by a gabled, tiled roof. The property benefits from a single storey extension to the rear constructed 2003. In addition there is a detached double garage.

HISTORY & TIMESCALE

We await insurer's advice on how they wish us to proceed with the claim.

Date of Construction	Circa 1982
Purchased	1982
Policy Inception Date	04/03/2017
Damage First Noticed	06/12/2017
Claim Notified to Insurer.....	06/12/2017
Date of our Inspection.....	19/01/2018
Issue of Report	24/01/2018
Anticipated Completion of Claim	Summer 2018

TOPOGRAPHY

The property occupies a reasonably level site with no unusual or adverse topographic features.

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GEOLOGY

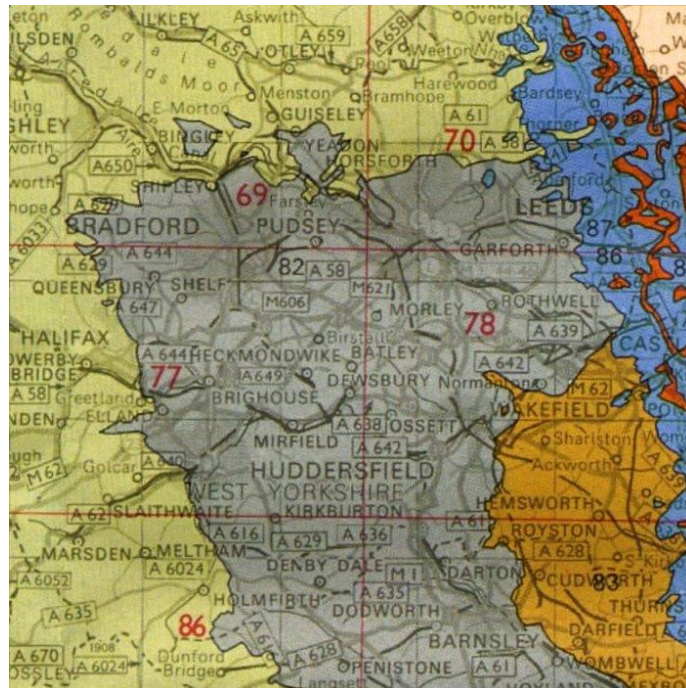
Reference to the 1:625,000 scale British Geological Survey Map (solid edition) OS Tile number SESW suggests the underlying geology to be Sandstone.

Sandstones comprise cemented sand particles. They have an average porosity of around 30% or more, depending on the degree and nature of the cementitious material that binds the grains. Although not shrinkable, the superficial weathered deposits may be.

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 vegetation¹ 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

Although not directly implicated it is of merit to note that 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
TG1 - Deciduous	5 m	3 m	Neighbour 5
T1 – Silver Birch	7 m	6 m	Owner

¹ Driscoll R. (1983) “Influence of Vegetation on Clays” Geotechnique. Vol 33.

OBSERVATIONS

The main area of damage affects external elevations to all aspects of the property together with internal rooms.

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

INTERNAL

Internal crack to right of front left lounge chimney breast



Internal cracking to rear wall of inner hallway to right of door leading to rear kitchen

Front left lounge - Cracking on wall plaster to front chimney breast, along coving line to right and above rear right internal door leading to hallway. Cracking less than 1mm wide.

Left mid-section dining room - Cracking to wall plaster to front left corner and along ceiling line and wall to internal wall shared with front left lounge and rear kitchen. Cracking up to 1mm wide.

Rear left hand playroom - internal cracking on front internal wall with dining room not exceeding 1mm wide.

Inner hallway - Cracking to wall / coving and ceiling to left hand side adjacent to internal front left lounge door. Cracking on rear facing internal wall to right of door leading to kitchen. Cracking to wall to right of entrance to front porch. Cracking up to 2mm wide.

Front mid-section bedroom - Cracking on front and right walls and ceiling. Cracking up to 1mm wide.

Rear right bedroom - Cracking to small vestibule leading from bedroom to hallway in walls up to 1mm wide.

Rear mid-section bathroom - Cracking on walls adjacent to internal door to hallway up to 1mm wide.

Rear kitchen - Cracking on right hand wall / coving and ceiling up to 2mm wide.

Attic - Tapered separation crack in dwarf block wall over rear wall to inner hallway up to 10mm wide.

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EXTERNAL

External cracking around concrete window reveal to left of front mid-section bedroom window



External cracking above rear kitchen door leading into high level roof

Front elevation - Vertical and stepped cracking around window reveal to front mid-section bedroom window and beneath front left lounge windows. Cracking up to 15mm wide.

Left elevation - Vertical cracking beneath front left lounge window and beneath mid-section dining room window. Cracking generally non-tapered up to 2mm wide.

Right elevation - Vertical and stepped cracking beneath front right bedroom window and at junction between rear extension and main dwelling. Cracking up to 1mm wide.

Rear elevation - Stepped and tapered cracking above rear kitchen door and rising up into high level roof line and around attic oculus window. Cracking up to 4mm wide.

CATEGORY

In structural terms the damage falls into Category 3 of Table 1, Building Research Establishment² 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.

² 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 due to an escape of water.

Water escaping from drains or from other sources in non-cohesive soils can cause localised erosion as the finer particles of soil are washed away. It can also soften cohesive soils by reducing their shear strength.

Usually, the building stabilises following repairs to the damaged service.

RECOMMENDATIONS

Subject to receiving instructions from your Insurers, the cause of movement (in this case, water escaping into the ground from leaking drains) needs to be addressed.

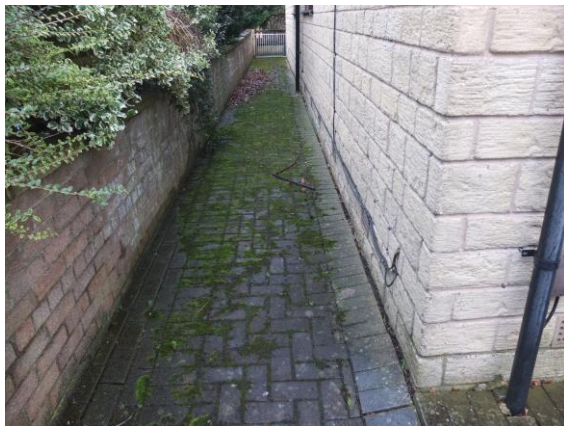
Once your Insurers instruct us, an investigation will be undertaken to establish the condition of the drains in the vicinity of the subsidence damage. This will also enable us to determine responsibility for the drainage repairs.

Once drainage repairs have been completed, due consideration may be given to superstructure repairs. A schedule of remedial works will be obtained and works may commence once the scope has been approved.

David Caress BSc (Hons) Geol, BSc (Hons) Construct Mgmt, MCIOB, C Build E, MCABE
Subsidence Division
Direct Dial: 0115 943 8230
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24 January 2018

PHOTOGRAPHS



External movement to block paving to left of main property



External crack beneath left mid-section dining room window



External cracking beneath front mid-section bedroom window



Internal crack to front left corner of rear mid-section dining room



Internal cracking to front right to front mid-bedroom



Internal cracking to right internal wall to rear kitchen

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Internal separation of blockwork in central area to attic space



Internal crack to right of front entrance door leading to porch

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