

TECHNICAL REPORT ON A SUBSIDENCE CLAIM

Crawford Reference: SU1900467

Kubinski Chartered Accountants

**Eldon House
201 Penistone Road Kirkburton
Huddersfield
HD8 0PE**



Prepared for



SUBSIDENCE CLAIM

DATE 23rd March 2019 (Rev A)



Crawford®

Subsidence Division

Cartwright House,

Tottle Road,

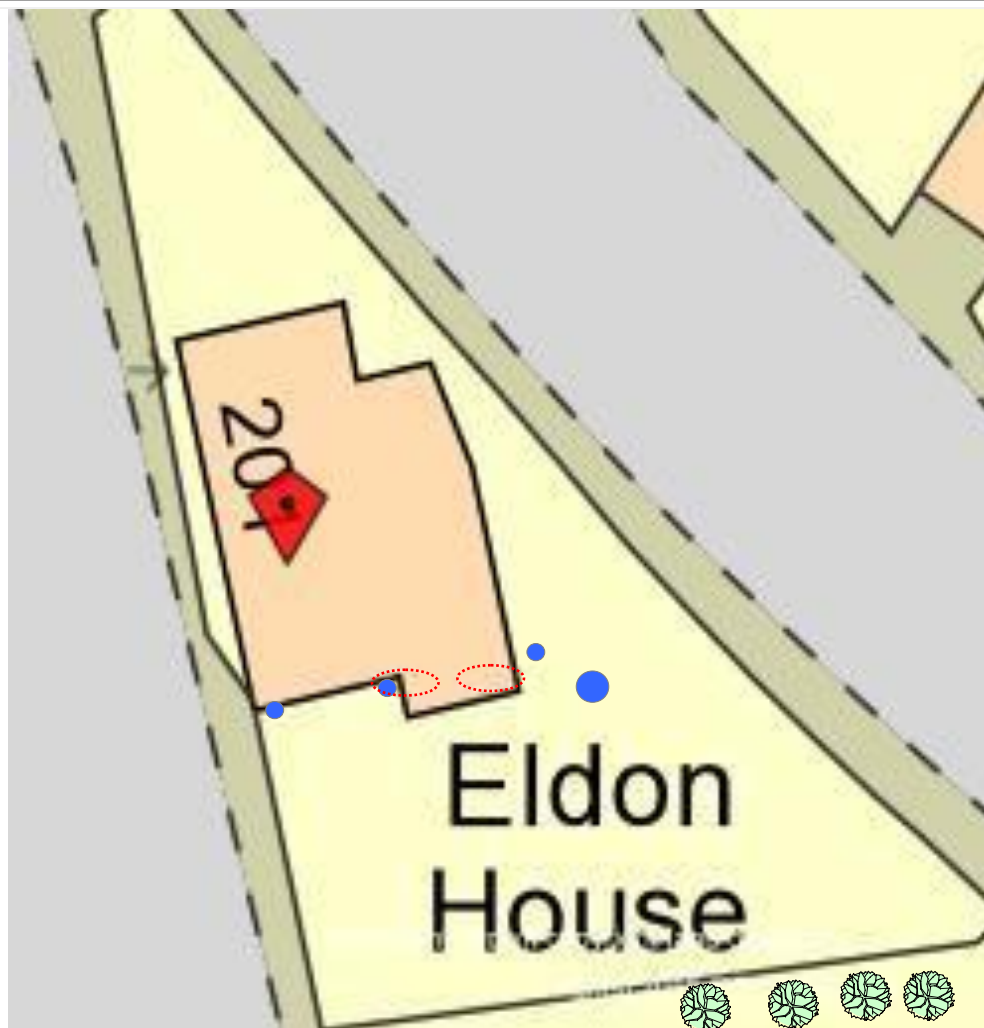
Riverside Business Park, Nottingham, NG2 1RT

Tel: 0115 943 5273

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 Towergate Commercial 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

The Insured noticed the damage in October 2018 and obtained advice from an engineer following which a claim was notified to Insurers.

PROPERTY

Two storey large detached office building of traditional construction with stone walls surmounted by a gabled slated roof.

HISTORY & TIMESCALE

We will now complete site investigations

Date of Construction	Circa 1800
Purchased	01/10/1993
Policy Inception Date.....	01/05/2017
Damage First Noticed	05/10/2018
Claim Notified to Insurer.....	10/12/2018
Date of our Inspection.....	13/02/2019
Issue of Report.....	14/03/2019
Anticipated Completion of Claim	December 2019

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TOPOGRAPHY

The property occupies a sloping site from front to rear.

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.

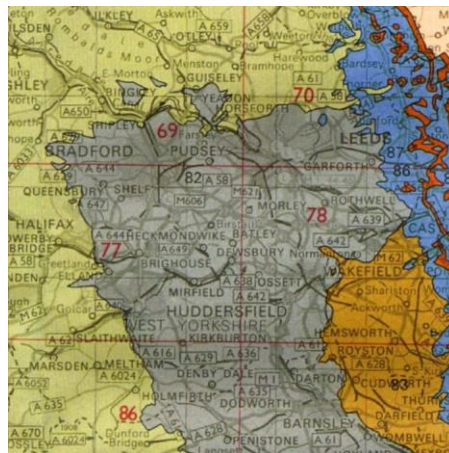
The superficial deposits are thought to be Silts.

Silts occur as glacial, alluvial or windblown deposits. They are water bearing and soft in consistency, and therefore amongst the most troublesome soils in excavation work since they are vulnerable to slumping and 'boiling'.

They can also suffer from frost heave¹. In the south-east of England they are known as Brickearth, which are generally firm to stiff, where they are less troublesome.

They do not suffer volumetric changes in the presence of vegetation in the way of clay soils, but can be a problem where there are leaking drains, water services or fluctuations in the water table, when consolidation settlement can occur.

They can also suffer localised erosion and softening in the presence of water.



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VEGETATION

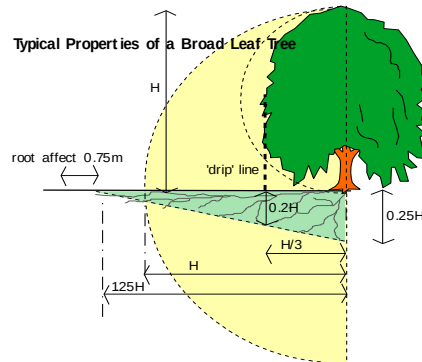
There are several trees and shrubs nearby, some with roots that may extend beneath the house foundations. The following are of particular interest:-

Type	Height	Distance	Ownership
Deciduous	10 m	10 m	Neighbour 1
Deciduous	9 m	11 m	Neighbour 1

¹ Tomlinson M.J. (1991) "Foundation Design & Construction" LONGMAN SCIENTIFIC
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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.

Broadleaf trees typically have wider spreading roots and higher water demands than coniferous species and many are better adapted to growing on heavy clay soils. Some are capable of sprouting from cut stumps or bare wood and most will tolerate pruning better than conifers.



Typical proportions of a broadleaf tree. Note the potential root zone. It must be noted that every tree is different, and the root zone will vary with soil type, health of the tree and climatic conditions.

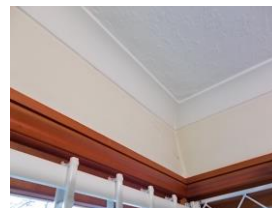
However heavy pruning of any tree should be avoided if possible, as it stimulates the formation of dense masses of weakly attached new branches which can become dangerous if not re-cut periodically to keep their weight down.

OBSERVATIONS

The Bay window is the focal point of the Insured's concerns.

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

INTERNAL



Diagonal crack above window opening to the top left hand side. The skirting board mitre joint has opened up to a gap of 5 mm.

EXTERNAL



Stepped diagonal cracks above and below window up to 3 mm wide. Distortion of window opening to 5 mm wide from bottom of frame to top. This effects both the ground floor and 1st floor bays.

CATEGORY

In structural terms the damage falls into Category 2 of Table 1, Building Research Establishment² 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.

DISCUSSION

Site investigations will confirm the cause of movement. Defects to the drainage system would be identified and noted if in the same area as the zone of subsidence.

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

The cause of movement needs to be addressed. It is recommended that a drainage survey is undertaken. This can be carried out in conjunction with superstructure repairs to the property.

A schedule of remedial works will be obtained and works may commence once the scope has been approved.

Colin Blackwood MSc MCIOB
Subsidence Division
Direct Dial: 0115 943 5273
subsidence@crawlco.co.uk

² Building Research Establishment, Garston, Watford. Tel: 01923.674040

PHOTOGRAPHS



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