

Engineers Report

Risk Address 9 Rudlands
Ipswich
Suffolk
IP8 3RQ

360 Reference DLG-SN-20-002038
Claim Refence 074634619
Policy Holder Mrs. J. Oakley

Date Notified 29.09.20
Date Instructed 29.09.20
Report Date 05.10.20



Description of Premises

The insured's property is a 3-bedroom detached two-storey property, originally built in 1982 from cavity brick walls with a pitched, tiled roof. There is a single-storey extension to the left-hand side that was added circa 2004 and a conservatory to the rear that was added circa 1998. There is also a detached single garage to the rear right, and this is also of brick construction with a flat roof. The insured has owned the property since 1993.

The property is in a residential area and the site is gently sloping with no unusual features.

Discovery of Damage / Claim History

Some minor cracking was noted during the summer of 2019, but this was not of great concern. However, over recent weeks the cracking has deteriorated significantly. Consequently, the buildings insurers were notified, and a subsidence claim was registered.

Due to current travel restrictions a 'virtual' inspection was undertaken, with the insured providing details and imagery of the damage via 360 Globalnet's Site View digital claims system. All information supplied was subsequently reviewed by our Engineer and discussed in detail with the insured.

Focus of Damage and Report

This document addresses damage notified to insurers in relation to cracking, focussed mainly to the right-hand side of the main house. It should not be considered to be an exhaustive list. All directions are stated when viewing the property from the front.



Photos of damage



Cracking Below Landing Window



Internal Cracking



Cracking Below Landing Window



Cracking Above Landing Window



Cracking to Landing Window Head



Cracking Above External Door

External

Right-Hand Side Elevation

There is significant crack above the kitchen door, and this extends up to the landing window above. Cracking is evident above the landing window and below the kitchen door and both frames have been pulled.

Internal

Kitchen - Cracking is evident above the door head.

Staircase / Landing - There is significant cracking above and below the landing window at the head of the staircase and this is in excess of 5mm wide.

Rear Bedroom - Some minor cracking has been noted.

Classification of Damage

It is common practice to categorise the damage in accordance with B.R.E. Digest 251 “Assessment of Damage in Low-Rise Buildings”. In this case, the damage to the extension falls into **Category 3** “**Moderate**”.

Category	Crack Width	Degree of Damage
0	Hairline cracks of less than 0.1 mm	Negligible
1	Typical crack widths are 0.1 to 1mm.	Very slight
2	Typical crack widths are 1 to 5mm.	Slight
3	Typical crack widths are 5 to 15mm, or several of, say, 3 mm.	Moderate
4	Typical crack widths are 15 to 25mm, but also depends on number of cracks.	Severe
5	Typical crack widths are greater than 25mm but depends on number of cracks.	Very Severe

Evidence of External Influences

Trees

There is a mature Oak tree in the Council land at the rear of the property, and it is understood that this is subject to a Tree Preservation Order. The tree is estimated to be 18 metres tall and 16 metres from the rear of the house. There is a Cherry tree in the rear garden and a Conifer in the neighbour’s garden at the front.

Drains

The foul and surface water drains are located to the right-hand side and front of the property.



Site Geology and Ground Conditions

Indicative Site Geology and Soils Data for:

9 Rudlands, Ipswich, Suffolk, IP8 3RQ

Ref: DLG-SN-20-002038

No of SI's within 0.32km from address on identical lithology. (See comments)	2
Closest - Furthest distance of a site investigation from the address (km).	0.22 - 0.32
Total number of boreholes.	3
Percentage of site investigations where root samples were taken.	0%
Percentage of site investigations where drainage was recorded.	100%
Number of samples tested at greater than 0.5m depth.	18
BRE Digest 240. "Volume change potential" from Av. Modified Plasticity Index (I _p) of 41%.	High

Previous Soils Data <small>nr = Non recorded</small>	Depth <i>m.</i>	M.C. <i>(%)</i>	L.L. <i>(%)</i>	P.I. <i>(%)</i>	P.L. <i>(%)</i>	425um <i>(%)</i>	Suction <i>kPa</i>	Oed Strain
Sample population	14	14	14	14	14	14	2	0
~ Minimum (Av - 1 StdDiv)	0.8	25	46	30	16	98	73	nr
~ Maximum (Av + 1 StdDiv)	3.8	36	80	54	26	100	312	nr
Average	2.1	31	63	42	21	99	193	nr
General soils description	Firm/Soft brown sandy CLAY with some fine gravel							
BGS 1:50 000 maps as a: Bedrock Geology	1:50 000 scale bedrock geology description: Thames Group - Clay, Silt And Sand. Sedimentary Bedrock formed in the Palaeogene period. Local environment previously dominated by deep seas. Setting: Deep seas. These sedimentary rocks are marine in origin. They are detrital and comprise coarse- to fine-grained slurries of debris from the continental shelf flowing into a deep-sea environment, forming distinctively graded beds.							
BGS 1km Hexagonal Superficial Deposit Depth Data Mean Depth = 6m Max Depth = 25m Coverage = 60% Note: The BGS only record superficial deposits greater than 1m in depth	1:50 000 scale superficial geology description: None recorded.							
BGS 1:50,000 Artificial Ground	Non recorded							

BGS "GeoSure" 5km Hexagonal Hazard Ratings	
Shrink/Swell	Significant with areas of localised significant rating.
Collapsible Deposits	Low
Compressible Ground	Low with areas of localised significant rating.
Landslides	Low with areas of localised significant rating.
Running Sand	Low with areas of localised significant rating.
Soluble Rocks	Low
Mining (not incl coal) 1km hex	Underground mining is known or considered likely to have occurred in the area.

Government Coal Authority Data (<25m = found within 25m)	No data recorded for this location.
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Comments: The location is in a low SI density area. The two SIs reported above are on exactly the same Bedrock Geology with no overlying Superficial deposits.

Summary and Conclusions

It is clear that there has been some localised foundation movement affecting the rear right-hand side of the original property and therefore a valid subsidence claim arises, subject to the policy excess of £1000.

The cause of the subsidence is almost certainly clay shrinkage due to the moisture demand of the surrounding vegetation, notably the Oak tree to the rear. The property is built off a shrinkable clay soil and the last three years have been extremely dry, and this leads to a progressive drying of the sub-soil, causing the tree roots to extend further to obtain moisture and desiccating the clay over a wider area. This has now been sufficient to cause some movement to the right-hand side of the property.

Movement due to clay shrinkage is not progressive and movement will cease as the clay rehydrates over the winter and spring. However, unless the moisture demand of the vegetation is reduced, further movement will occur following the next period of prolonged, dry weather. It will therefore be necessary to remove, or at least reduce, the Oak tree. As the tree is protected, the Local Authority will require a high level of evidence before they will consider any tree works.

In order to confirm the cause of the subsidence a site investigation will be undertaken. A trial pit will be excavated on the rear corner and any roots found will be analysed to confirm their species. The drains will also be surveyed to ensure that they have not been damaged.

An arborist will be instructed to review all of the vegetation and make recommendations for tree management. Level monitoring will also be required in order to provide the level of evidence require to obtain tree removal or reduction. Ultimately if tree works are not permitted then a root barrier or underpinning may be needed.

At this stage the damage is localised, and repairs will likely entail crack stitching and re-decoration. A detailed schedule of repairs will be prepared following an assessment by a contractor.

Next Steps

- Site investigation to be instructed, including drainage survey
- Level monitoring to be instructed
- Arborist to be instructed to recommend appropriate tree management
- If sufficient evidence is obtained, make application to lift Tree Preservation Order
- If successful, arrange tree removal
- Once property has stabilised, instruct a contractor to carry out repairs or agree a cash settlement with the insured
- Update all parties on a regular basis