

Engineers Report

Risk Address 7 Glamis Close
Waterlooville
Hampshire
PO7 8JN

360 Reference DLG-SN-20-001935
Insurer Reference 074274952
Policy Holder Mr. T. Evans

Date Notified 10.09.20
Date Instructed 10.09.20
Report Date 12.09.20



Description of Premises

The insured's property is a 3 / 4-bedroom, detached two-storey property constructed circa 1980 from cavity brick walls with tile hanging and a pitched, tiled roof. There is a double garage to the front left-hand side, and this continues back along the left-hand wall forming a single storey extension. This is of brick construction with a flat roof and was added by previous owners. The insured has owned the property since August 2018.

The property is in a residential area and the site is relatively flat with no unusual features.

Discovery of Damage

There has been difficulty with the rear door to the extension and a specialist attended to adjust the door. Cracking was noted to the extension and consequently, insurers were notified, and a subsidence claim was registered.

Due to current Coronavirus 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 customer's daughter.

Focus of Damage and Report

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



Internal Damage

There is significant cracking and displacement of the coving and ceiling at the junction with the main house and the cracking, with cracking to the wall junctions as well. The floor has also dropped significantly.

External Damage

On the rear elevation, the brickwork has dropped and displaced along the damp course line. The steps have also rotated away. Cracking is also evident above the door opening, which has distorted significantly.



Rear View on Extension



Displaced Brickwork at Low Level



Cracking Adjacent Door



Cracking Adjacent Door



Cracking and Displacement to Ceiling



Movement of Floor

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

Site Geology and Ground Conditions

Indicative Site Geology and Soils Data for:

7 Glamis Close, Waterlooville, Hampshire, PO7 8JN

Ref: DLG-SN-20-001935

No of SI's within 0.58km from address on identical lithology. (See comments)	6
Closest - Furthest distance of a site investigation from the address (km).	0.2 - 0.57
Total number of boreholes.	8
Percentage of site investigations where root samples were taken.	67%
Percentage of site investigations where drainage was recorded.	17%
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 45%.	High

Previous Soils Data nr = Non recorded	Depth m.	M.C. (%)	L.L. (%)	P.I. (%)	P.L. (%)	425um (%)	Suction kPa	Oed Strain
Sample population	40	31	9	9	9	9	13	17
~ Minimum (Av - 1 StdDiv)	0.7	28	58	35	22	95	10	0.0195
~ Maximum (Av + 1 StdDiv)	3.6	37	80	55	28	100	354	0.0511
Average	2.0	33	69	45	25	98	107	0.0195
General soils description	Firm brown/grey sandy CLAY with some fine gravel / silt							
BGS 1:50 000 maps as a: Bedrock Geology	1:50 000 scale bedrock geology description: London Clay Formation - 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	1:50 000 scale superficial geology description: None recorded. Mean Depth = 1m Max Depth = 1m Coverage = 7% Note: The BGS only record superficial deposits greater than 1m in depth							
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	Moderate
Compressible Ground	Low with areas of localised significant rating.
Landslides	Low with areas of localised significant rating.
Running Sand	Moderate with areas of localised significant rating.
Soluble Rocks	Significant
Mining (not incl coal) 1km hex	Localised small scale mining may 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 medium/high SI density area. The six SIs reported above are on exactly the same Bedrock Geology with no overlying Superficial deposits.

Evidence of External Influences

Trees

There is a mature Oak tree in the rear garden, and this is estimated to be 12 metres tall and 6 metres from the extension. There is also a double row of Conifer trees along the left-hand boundary which comes to within 1 metre of the extension.

Drains

The property is served by a domestic drainage system although the exact layout is not known.

Summary and Conclusions

It is clear that there has been some localised foundation movement affecting the left-hand side extension to the property and therefore a valid subsidence claim arises, subject to the policy excess of £2000.

Given the timing of the damage, following a period of extremely dry weather, and the proximity of significant vegetation it is clear that the cause of the movement is clay shrinkage. There is a large Oak tree close to the extension and this has a high water-demand. The tree roots will have extended further during the dry weather and this will have desiccated the clay over a wider area than normal. The Conifer hedging will also be contributing to the clay shrinkage, albeit they are not the dominant cause.

Movement due to clay shrinkage is seasonal and therefore the foundations will stabilise as the clay rehydrates over the winter and spring. However, unless the moisture demand of the vegetation is reduced, further movement will occur following future periods of prolonged dry weather.

The Oak tree is understood to be subject to a Tree Preservation Order and therefore a high level of evidence will be required to justify its removal. Level monitoring will be required over the autumn, winter and spring seasons in order to confirm the extent of seasonal movement occurring and if the evidence is sufficient then the Local Authority may agree to remove it.

If the tree cannot be removed, or at least reduced, then some alternative means of stabilisation will be required. This will either be a root barrier or underpinning.

The superstructure damage can be repaired relatively easily once the extension has stabilised. The floor will need to be re-levelled and a new door may be required. A schedule of repairs will be agreed once a contractor has undertaken a detailed inspection.

A further update will be provided on receipt of the site investigation report.

Next Steps

- Site investigation to be instructed
- Level monitoring and arborist report also to be instructed
- Application to lift Tree Preservation Orders to be submitted if sufficient evidence is obtained
- Alternative stabilisation measures to be considered if Application is refused
- Superstructure repairs to be recommended once property is confirmed as being stable
- Update all parties on a regular basis

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360Globalnet Subsidence Team