Engineers Report

Risk Address	**Field House** **Wood Street** **Skelmanthorpe** **Huddersfield** **West Yorkshire** **HS8 9BN**
Claim Reference	**084665694**
Policyholder	**Mr G Harper**
Date Notified	**26 September 2022**
Date Instructed	**26 September 2022**
Report Date	**30 November 2022**

Description of premises

The risk address is a three-storey, 4-bedroom, detached property, built in traditional cavity wall construction, clad in stonework, surmounted by a pitched and hipped tiled roof. The ground floor construction detail is believed to be of solid ground bearing concrete, with the first-floor construction detail believed to be of suspended timber.

There is an adjoining double garage to the left-hand side of the main building.

The original construction of the property was circa 1980's, with the Policyholder purchasing the property on 10 December 2013.

The property is situated on a site which slopes steeply from right-to-left, with no unusually adverse features recorded during our review. The property is located on a main road, as part of a small residential housing estate, within the eastern outskirts of the West Yorkshire village of Skelmanthorpe.

Discovery of Damage

The Policyholder advises that the damage was first noted to the property during the early part of 2022. Cracking has been recorded internally to a number of rooms, to both the lower ground and ground floor.

As a result of their concern, the Policyholder decided to submit a claim for potential subsidence under their Home Insurance Policy for consideration and assistance.

A 'virtual' inspection was undertaken, with the Policyholder 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 Policyholder.

Focus of Damage and Report

This document discusses the damage noted during the course of our review. All comments and references to the building are made by looking at the property from the front. We have noted the following areas of potential concern:

Internal Damage

Lower ground floor

Front left-hand bedroom

There is a predominantly vertical 1-2mm crack to the middle of the left-hand wall, above the rear left-hand window. There is a 1-2mm crack at the junction of the left-hand wall and the ceiling.

There is a diagonal 1-2mm crack to the front wall at high level, above the left-hand side of the front window. There is a 1mm crack at the junction of the front wall and the ceiling. There is a predominantly vertical 1-2mm crack to the front wall, beneath the front window board.

Ground floor

Front left-hand bedroom

There is a predominantly vertical 1-2mm crack to the front wall, beneath the front window board.

Rear left-hand bedroom

There is a diagonal 1-2mm crack to the rear of the left-hand wall at low level, underneath the left-hand circular window.

External damage

Left-hand elevation

There is a diagonal 1mm crack to the front section of the left-hand elevation at low level. There is a diagonal 1mm crack above the rear lower ground floor window on the left-hand elevation.

The block paving towards the left-hand side of the main building has distorted, with clear evidence of areas which have dropped and blocks becoming displaced.

Diagonal cracking to front wall of front left-hand bedroom

Vertical cracking to front wall of front left-hand bedroom

Diagonal cracking to left-hand wall of rear left-hand bedroom

Vertical cracking to front wall of front left-hand bedroom

Previous photograph to show significance of Sycamore within the front garden

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 localised damage to the property falls into Category 2 "Slight".

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

Non-Subsidence Related Damage

No other damage of significance was noted during the time of our review.

Evidence of external influences

Trees.

The following vegetation, was observed at the risk address and is a potential external influence, based on the pattern of damage, direction of movement and on the information in the table below.

Trees / vegetation	Distance to building (m)	Approx. height (m)	Mature height (m)	Water demand	Ownership	Action
Sycamore	3	12	8	High	Policyholder	TBC

Drains.

There is drainage located within the vicinity of the damage, however given the timing and mechanism of the movement, we do not believe that any potential drainage defects are a contributory factor to the damage on this occasion. As part of our investigative works however, we will be conducting a survey of the underground drainage system.

360Globalnet

Site Geology and ground conditions

Indicative Site Geology and Soils Data for:

Filed House, Wood Street, Skelmanthorpe, Huddersfield, West Yorkshire, HS8 9BN **Ref: 084665694**

No of SI's within 4.3km from address on identical lithology. **(See comments)**	**4**
Closest - Furthest distance of a site investigation from the address (km).	**0.09 - 4.3**
Total number of boreholes.	**5**
Percentage of site investigations where root samples where taken.	**75%**
Percentage of site investigations where drainage was recorded.	**0%**
Number of samples tested at greater than 0.5m depth.	**13**
BRE Digest 240. "Volume change potential" from Av. Modified Plasticity Index (I'p) of 18%.	**Low**

Previous Soils Data nr = Non recorded	***Depth m.***	***M.C. (%)***	***L.L. (%)***	***P.I. (%)***	***P.L. (%)***	***425um (%)***	***Suction kPa***	***Oed Strain***
Sample population	13	13	13	13	13	13	5	2
~ Minimum (Av - 1 StdDiv)	0.5	18	39	10	21	49	22	0.0120
~ Maximum (Av + 1 StdDiv)	1.6	25	49	26	31	100	65	0.0210
Average	1.0	22	44	18	26	76	43	0.0120
General soils description	Soft/Firm dark brown/orange sandy CLAY with some fine-medium gravel							
BGS 1:50 000 maps as a: Bedrock Geology	**1:50 000 scale bedrock geology description:** Penistone Flags - Sandstone. Sedimentary Bedrock formed in the Carboniferous period. Local environment previously dominated by swamps, estuaries and deltas. **Setting**: Swamps, estuaries and deltas. These sedimentary rocks are fluvial, palustrine and shallow-marine in origin. They are detrital, forming deposits reflecting the channels, floodplains and deltas of a river in a coastal setting (with periodic inundation from the sea).							
BGS 1km Hexagonal Superficial Deposit Depth Data Mean Depth = 0m Max Depth = 0m Coverage = 0% **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	Low
Collapsible Deposits	Low
Compressible Ground	Low with areas of localised significant rating.
Landslides	Moderate with areas of localised significant rating.
Running Sand	Low
Soluble Rocks	Low
Mining (not coal) 1km hx grid	Localised small scale mining may have occurred in the area.

Government Coal Authority Data (<25m = found within 25m)	Reporting area/ Surface Resource Area

Comments: The location is in a very low SI density area. The four SIs reported above are on exactly the same Bedrock Geology with no overlying Superficial deposits.

 25-10-22

Summary and Conclusions

The liability of the claim is to be deferred, pending the result of an intrusive ground investigation and drainage survey. This is required in order to confirm whether the damage noted to the property is related to progressive subsidence movement or not.

We note there is a significant Sycamore tree within the front garden, and there could be a possibility that roots from this vegetation has caused the clay sub-strata underneath the foundation of the property to shrink, and as such, cause localised subsidence movement to occur. In addition to this, we note the especially dry summer, and the increase in subsidence claims throughout the country. We need to therefore investigate this aspect further.

It should be noted however, that it is both likely that the Sycamore pre-dates the property's construction date, and, the Sycamore is on a higher level than the building, therefore the chance for roots getting underneath the foundation to cause potential shrinkage would be more difficult. We do need to investigate this further, though.

A trial pit and borehole will be undertaken to confirm the depth of the property's foundation, as well as assessing the content and condition of the sub-soil beneath the foundation, to both the front and rear elevations. This will also provide a good indicator as to whether the ground has been affected by an external influence, and allowed some slight downward movement of the foundation.

Once we have gathered and reviewed the ground investigation information, we will re-consider Insurers' prospective liability for the claim.

It may be that a further investigative exercise is required to confirm if the damage noted is related to subsidence or not, which could be in the form of crack and level monitoring. This would effectively measure the cracking and the building itself every 8 weeks over a 4-6 month period, to confirm the ongoing movement patterns of the property. We will discuss this in more detail however once the investigative report has been reviewed.

Next Steps

- Instruct site investigation.
- Review investigation data and re-assess potential claim liabiltiy.

James Reeves BSc (Hons), NEBOSH
360Globalnet Subsidence Team