Engineers Report

Risk Address 75 Albert Street
Camden Town
London
NW1 7LX

360 Reference DLG-SN-22-004445

[redacted]

Date Notified 15.07.22
Date Instructed 18.07.22
Report Date 29.07.22

Description of Premises

The insured's property is a 5-bedroom, three / four storey, mid-terraced house, constructed circa 1840 from part-rendered brick walls with a flat roof. The insured has owned the property since 1981.

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

Discovery of Damage

The property has been the subject of previous subsidence claims in 2003 and 2009, with the last repairs being completed in 2013. In May 2022 some recurrence of the cracking to the front was noted. The cracking has now deteriorated significantly and has now become of concern. Consequently, insurers were notified, and a further subsidence claim was registered.

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.

Focus of Damage and Report

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

Internally

The full extent of any internal damage is not known at this stage however, the main cracking affects the basement sitting room. Further cracking is evident at ground and first floor level.

Externally

Front Elevation
There is significant diagonal cracking through the render above and below the basement door and windows, above the ground floor door and window and also to the first-floor balcony.

Cracking Above Basement Window

Cracking Above Ground Floor Window

Cracking Above Front Door

Cracking at Basement Level

Cracking Below Basement Window

Cracking Adjacent to Basement Door

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 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

Site Geology and Ground Conditions

Indicative Site Geology and Soils Data for:

75 Albert Street, Camden Town, NW1 7LX Ref: DLG-SN-22-004445

No of SI's within 0.2km from address on identical lithology. **(See comments)**	**6**
Closest - Furthest distance of a site investigation from the address (km).	**0.05 - 0.2**
Total number of boreholes.	**9**
Percentage of site investigations where root samples where taken.	**83%**
Percentage of site investigations where drainage was recorded.	**33%**
Number of samples tested at greater than 0.5m depth.	**42**
BRE Digest 240. "Volume change potential" from Av. Modified Plasticity Index (I'p) of 50%.	**High**

Previous Soils Data nr = Non recorded	*Depth m.*	*M.C. (%)*	*L.L. (%)*	*P.I. (%)*	*P.L. (%)*	*425um (%)*	*Suction kPa*	*Oed Strain*
Sample population	42	42	26	26	26	26	9	27
~ **Minimum** (Av - 1 StdDiv)	0.7	28	72	46	24	97	101	0.0238
~ **Maximum** (Av + 1 StdDiv)	3.4	32	82	56	28	100	804	0.0416
Average	1.9	30	77	51	26	99	412	0.0238

General soils description	Firm brown CLAY with some sand / fine gravel
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 Mean Depth = 4m Max Depth = 9m Coverage = 41% **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	Worked Ground (Undivided) - Void. BGS Code=WGR-VOID

RECLAIMED GROUND - CLAY AND SILT
DISTURBED GROUND (UNDIVIDED) - UNKNOWN/UNCLASSIFIED ENTRY
LANDSCAPED GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
LANDSCAPED GROUND (UNDIVIDED) - DIAMICTON
LANDSCAPED GROUND (UNDIVIDED) - UNKNOWN/UNCLASSIFIED ENTRY
LANDSCAPED GROUND (UNDIVIDED) - SAND AND GRAVEL
MADE GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
MADE GROUND (UNDIVIDED) - FILL
WORKED GROUND (UNDIVIDED) - ARTIFICIAL DEPOSIT
WORKED GROUND (UNDIVIDED) - UNKNOWN/UNCLASSIFIED ENTRY
WORKED GROUND (UNDIVIDED) - VOID
INFILLED GROUND - ARTIFICIAL DEPOSIT
INFILLED GROUND - FILL
INFILLED GROUND - ROCK
INFILLED GROUND - UNKNOWN/UNCLASSIFIED ENTRY
INFILLED GROUND - SAND AND GRAVEL

100m Sq. Map

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
Soluble Rocks	Low
Mining (not coal) 1km hx grid	No record of activity.

Government Coal Authority Data (<25m = found within 25m)	No data recorded for this location.

Comments: The location is in a very high SI density area. The six SIs reported above are on exactly the same Bedrock Geology with no overlying Superficial deposits. **Please see Additional Details on Siteview.**

 18-07-22

Evidence of External Influences

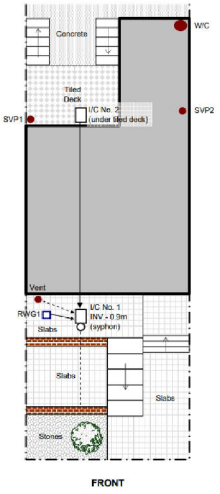
Trees

There is Mimosa tree in the front garden of No. 77 and this is approximately 6 metres tall and within 3 metres. In the public footpath there is also a large Broadleaf tree (possibly a London Plane) and this is estimated to be 10 metres tall and within 6 metres. It is understood that a Fig tree was removed from the insured's front garden as part of the previous claim.

Vegetation – October 2020

Drains

The property is served by a domestic drainage system. This was surveyed as part of the previous claim, and it is understood that the few minor defects found were repaired.



Previous Site Investigations

Previous site information data is available from the previous claim. An investigation in February 2010 confirmed that the front wall is constructed off a brick corbel footing bearing at 330mm below ground level in firm clay of high shrinkability. Roots were found to a depth of 300mm and were identified as Fig roots.

A further investigation was undertaken in March 2012, and this found that the brick corbel footing was bearing at 400mm below lower ground level on firm to stiff clay of high shrinkability. The clay was desiccated, with a heave potential of up to 30mm. Roots were found to a depth of 2 metres and were identified as Plane and Sycamore / Maple roots.

Summary and Conclusions

It is clear that there has been some recent significant foundation movement affecting the front of the property and therefore a valid subsidence claim arises, subject to the policy excess of [redacted]

Given the nature and timing of the damage, combined with the history of subsidence at the property, it is clear that the cause of the damage is clay shrinkage due to the moisture demand of the substantial vegetation at the front of the property. The sub-soil is known to be a highly shrinkable clay and the damage has occurred during an extremely dry summer, following previous dry summers since 2018. The previous claims also coincide with very dry summers, with 2003 being particularly dry.

The neighbour's Mimosa tree was planted after the last claim and has grown over the years, resulting in a progressive drying of the soil. When dry summers occur, the tree roots will extend further to obtain moisture, desiccating the clay over a wider area. Unfortunately, this has now been sufficient to cause movement of the property. However, the presence of the London Plane tree in the public footpath is suspected as being the dominant cause due to its age and size. This was implicated in the previous claim and it is understood that the Local Authority agreed to pollard the tree, and this has been maintained on an annual basis.

The damage will stabilise as the clay rehydrates over the winter and spring and hopefully some of the cracking will close up. However, there is a high risk of further damage occurring during future dry periods of weather and therefore it is recommended that the moisture demand of the vegetation is reduced – ideally the removal of both the Mimosa and the London Plane.

Although there is significant evidence from the previous claim, Local Authorities will require a high level of evidence to justify the removal of a tree. It will therefore be necessary to undertake a further site investigation to confirm the presence of roots under the foundations. An arborist inspection will also be needed, and level monitoring undertaken off a deep datum.

Provided that the trees are removed, or suitably reduced in size, the property will stabilise over the winter / spring and repairs can be implemented in spring 2023. However, it is unlikely that the Local Authority will take action before then and therefore monitoring may need to continue through the summer of 2023. Given the history, if the tree is not removed, or substantially reduced, consideration will have to be given to underpinning the foundations however, that would be a complex and expensive operation.

A detailed repair schedule will be agreed at repair stage, following an assessment by a contractor.

Next Steps

- Site investigation to be instructed, including deep datum
- Arborist report to be instructed
- Level monitoring to be instructed
- Agent visit to be instructed to undertake detailed survey
- Liaise with neighbour and Local Authority to secure removal of vegetation
- Allow property to stabilise following tree removal
- Instruct a contractor to carry out repairs or agree a cash settlement with the insured
- Update all parties on a regular basis

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