sedgwick

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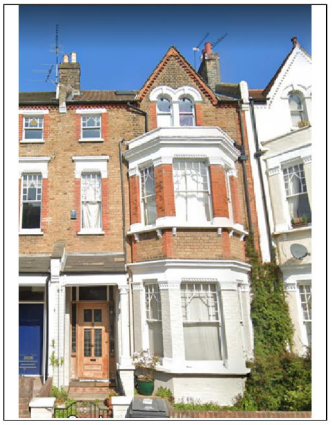

Policyholder: [redacted]

Subject Property Address:

45 Gondar Gardens
London
NW6 1EP

INSURANCE CLAIM

CONCERNING SUSPECTED SUBSIDENCE

UPDATED SUPPLEMENTARY ENGINEERING APPRAISAL REPORT

This report is prepared on behalf of [redacted] for the purpose of investigating a claim for subsidence. It is not intended to cover any other aspect of structural inadequacy or building defect that may otherwise have been in existence at the time of inspection.

Date: 08/03/2021

[redacted]

INTRODUCTION

The technical aspects of this claim are now being overseen by a Senior Building Consultant David Billington MCIOB FCILA ACII, in accordance with our Project Managed Service.

Unless stated otherwise all directions are referred to as if standing in the street looking towards the front door from the outside the property.

1.1. Description of building

The subject property was purchased by the Policyholder during 2004 and comprised a six bedroom, three storeys with part basement, traditional mid terraced dwelling located in a residential area of similar buildings.

Construction was typical for the late 1800's / early 1900's and of traditional masonry walls with a pitched roof covering of tiles. There was a two storey projection to the rear of the building.

There were trees growing just over the rear garden boundary along the edge of the grounds to Hampstead Cemetery. In the rear garden of the risk address, also to the rear of the left side property number 43 as well, were two large deciduous trees, these thought to be Oaks, now approaching 15m in height and 15 m away from the rear wall.

The main drainage outfalls collected at the rear right of the rear offshoot and then ran under the building to join with an inspection chamber located in the front garden.

1.2. Discover of damage

The Policyholder noticed damage during 2017 but initially attached no significance until during the summer of 2018 the problem became suddenly much worse.

Upon becoming concerned the Policyholder then contacted Insurers, this being on or about 08/10/2019

1.3. Nature and extent of damage

Description and Mechanism:

Briefly, at the time of our inspection we noted as follows;

Externally - Hairline cracks on front elevation bay window

Internally – Disruption to wall and ceiling plaster and decorative finishes by cracking to varying degrees. These noted at ground floor level on the ceiling to the hall and also extending into the kitchen, and to the coving above the doors to the rear of kitchen. Similarly there were cracks to the dining room ceiling to 3mm in width and extending down the side of the wall in the adjacent living room and below the bay window.

Internally - At first floor level there was a crack along the ceiling to the landing and running down the left party wall and which had a width of 10mm. In the adjacent rear bedroom 3

there was a 2mm crack along the ceiling and a separation crack between the wall and the rear window. Cracks were also present in the adjacent bathroom to the right of the window. In bedroom 2 there were cracks along the ceiling and a separation crack down the wall. Finally we noted sympathetic cracks on the ceiling to the front master bedroom and above this there were also cracks to the ceiling of the 3rd floor landing.

Generally – More recently the Policyholder has also expressed concerns over new cracking appearing towards the front of the property as well.

The pattern and location of the damage indicate differential foundation movement towards the rear.

Significance:

The level of damage is moderate, and is classified as category 3 in accordance with BRE Digest 251 - Assessment of damage in low-rise buildings.

Onset and Progression:

We consider that the damage has occurred recently.

It is likely that movement will be of a cyclical nature with cracks opening in the summer and closing in the winter.

2. SITE INVESTIGATIONS

The results of ground investigation in the area indicate that this is typically competent shrinkable sandy silty London Clay.

On 13/05/2019 a test hole, extended by augered borehole to 1700mm, was carried out by CET Group Limited at the rear left corner of the rear offshoot so as to enable a better understanding of the bearing and foundation arrangements, and to secure soil and root samples for laboratory testing. The nearby drainage outfalls were also surveyed by CCTV.

Test hole / borehole 1

The foundation was a traditional two brick corbel footing built off 250mm of crushed brick foundation bearing at 600mm into stiff, mid brown /orange, silty Clay with crystals. At 1000mm depth to the bottom of the borehole this was underlain by stiff orange / brown silty Clay with crystals and claystone nodules.

There were 3mm diameter roots found in the bearing zone between foundation underside and 800mm depth. These were later identified in the laboratory as follows;

[redacted]

The following work was commissioned by CET on behalf of their client. Root samples were obtained in sealed packets from the above site with no reference given as to the types of tree or shrub from which they may have originated.
The results were as follows -

Trial pit/ Borehole number	Root diameter (mm)	Tree, shrub or climber from which root originates	Result of starch test
TP1 (USF)	3 mm	Quercus spp. 2 roots	Positive

Quercus spp. are oaks (both deciduous and evergreen).

Soils analysis

Soil samples were tested and confirmed plasticity indices of 47% and 48% indicating Clay of high volume change potential. Desiccation was evident for the full depth of the borehole and in-situ shear vane values of >120kpa were a further indication of the dense dry nature of the Clay.

CCTV Survey

The nearby drainage outfalls were surveyed. The combined drain running back under the rear offshoot was found to contain cracks and was leaking whilst the adjacent rain water waste gully located on the rear of the main house was ineffective and blocked. The damage to the drainage was consistent with differential ground movement and root action. Repairs were arranged with CET Group Limited as part of the accepted subsidence damage claim.

The Policyholder was concerned about continuing smells from the drains and problems of blockages. These seemed to relate to drainage runs at the front of the building and so in the first instance, as these were some little distance from the subsidence damage under the review at the rear, it was suggested a new claim would be best considered by Insurers direct. ANSA then attended following instructions from Insurers and then reported back that the lined section of pipework, this running from the back to the front of the building, had buckled. (This sometimes happens with lined sections.)

We looked to refer matters back to CET Group but the Policyholder had by then lost faith in them and requested an alternative appointment was made. With Insurers approval we arranged for Auger Limited to re-survey the drainage and to provide a detailed report.

Auger Limited attended and advised that excavation was needed through the cellar area, this congested with the Policyholders belongings, before they could accurately diagnose the full extent of the problem and provide a detailed estimate for further review. Insurers approved these further investigation costs and also subsequently the cost of removing cellar items to storage to provide the required access.

Auger Limited visited 15/01/2021 and completed their survey as planned. Their observations were confirmed as;

As per our previous report we found defects that will be resulting in an escape of water such as the liner that has not sealed drainage properly on Line 1. We had since requested the removal of belongings within the property basement and for internal access in order to scope to repair the two ends of the faulty liner.
We also attempted to survey the remainder of Line 4 but we were unsuccessful in doing so due to the parking restrictions.

Line 1 - From MH1 upstream to buried WG
Our survey has since revealed that the furthest upstream section of deformed liner at 7.0m upstream from MH1 is in fact 1.0m behind the basement ending wall and is at a depth of 2.5m through the hallway above.

Line 2 - From MH1 downstream to off the boundary
Our CCTV survey revealed Cracking and joint displacements throughout the line, this will be resulting in an escape of water. The interceptor trap was also found to be fractured along with the channelling and benching within the channel.

Line 4 - From RWG2 downstream
We were unable to carry out the jetting on this line in order for the further investigations so we therefore carried out the below ground break-in downstream and we discovered the pipework to be back falling towards the gully but we were unable to confirm this, nor confirm the route and condition of the rest of the pipework due to the mass build up of silt within the line.

Line 4 is the outfall from the rainwater pipe at the rear that runs into the garden area. This is thought to terminate in a soakaway, the initial survey report of CET Group had indicated the soakaway was silted up.

Auger made recommendations for repairs and these are summarised below;

It is recommended that the following repairs are carried out to prevent an escape of water from the system:

Line 1 - Auger recommend to install a 100mm flexi patch 1.0m upstream of MH1 to seal previous liner and then to excavate and replace 1.0m of 100mm pipework 7.0m upstream from MH1 before the basement wall, then install a patch to make the connection and a radial patch to seal the previous liner. Tunnelling will be required.

Auger then recommend to excavate and replace SVP rest bend, up to 1.0m of 100mm pipework at a depth no greater than 1.0m through concrete then install a 100mm patch downstream and to excavate and replace WG and 1.0m of 100mm pipework at a depth no greater than 1.0m through concrete then install up to 3.0m of 100mm liner downstream. Tunnelling will be required for these excavations

Please Note: Auger will require a specialist to remove any belongings and any items from the areas of excavations prior to Auger's visit.

Line 2 - Auger recommend to excavate and replace 1.0m of 150mm pipework directly upstream of MH1 at a depth no greater than 1.0m through concrete then install 3.5m of 150mm liner downstream

Line 4 - Auger recommend to Jet and rod the line clear then CCTV to determine the route and condition

There were also further points of clarification added by Auger;

Please Note: Auger have allowed for the cost of additional protection in order to transport any waste through the property as there is no rear access.

Please Note: Auger has not quoted for the costs of the parking suspension for two vehicles outside of the property as the costs are unforeseen and may change or vary on time and dates as we will most likely need up to a working week to carry out repairs. It should also be noted due to the complex repairs costs may change.

It will be necessary to high pressure water jet line 4 prior to the repairs.

It will then be necessary to CCTV survey line 4 to check for any further issues. Please note that the

further CCTV investigation may reveal additional defects to the drainage system. This will be reported whilst on-site and could potentially cause an increase in repair costs and provide further inconvenience to the customer/occupants.

The estimated costs for the works identified are confirmed [redacted] but in addition to which other charges may arise following further survey during the course of the works and for incurred parking charges.

It is likely that removal and storage of belongings will be needed in order to clear the cellar area although that need was seemingly avoided when the investigations in that area were recently carried out. Insurers have considered these further works and have approved these. Auger Limited will now undertake the repairs by arrangement with the Policyholder.

3. MONITORING

As a precaution precise level monitoring and crack width monitoring was set up by CET Group Limited. The first readings were taken on 18/02/2019. Up to 29/01/2021 we have with one exception seen little change in the foundations, as for the main part the movements seen are within the range we would expect seasonally for a property on Clay subsoil. That exception concerned point 5 located at the rear left corner of the rear offshoot and where over the drier summer months we recorded downward movement nearest to the trees. The overall seasonal range for that particular point was 7.8mm compared with 3.1mm, 2.4mm and 3.0mm for the three stations located along the rear of the building towards the right of this station.

Crack width monitoring has also been carried out internally and to the first floor landing at the left side we saw the crack opening to over 12mm in width during the summer of 2020 and then closing up again to about 8mm in width over the wetter winter months whilst the vegetation was dormant.

The monitoring will continue for the time being to assist in securing removal of implicated vegetation and to confirm when the movements have stabilised.

4. CONCLUSIONS

4.1. Cause of Subsidence

Whatever its shortcomings by modern day standards the building has stood the test of time.

All buildings on clay move within a small range seasonally and where this occurs in a uniform manner the traditional form of construction tends to accommodate these small changes without significant damage being caused. However where one part of the building moves at a greater rate, such as we see taking place near to growing vegetation during the summer months when clay is caused to shrink and is followed by the foundations, then differential movement is generated and which gives rise to the cracking.

It is more than coincidental that the damage has suddenly appeared following an extended period of dry weather and in an area of the building bearing into Clay subsoil near to growing vegetation.

[redacted]

The escalation of cracking during a period of dry weather is also a typical feature of clay shrinkage in the growing season and where the bearing subsoil is influenced by moisture extraction to the roots of nearby vegetation.

Based on the information detailed above, we are therefore of the opinion that damage here has occurred due to localised clay shrinkage subsidence, this due to the dewatering effects of the nearby vegetation.

The drainage has also been affected by the same ground movements.

Recommendations

4.2.1 Mitigation:

In order to prevent ongoing subsidence and to regain ground stability, we looked to remove the offending trees. We involved Sedgwick Mitigation Services to provide further advice and in support of which they obtained an arboricultural report from Property Risk Inspections Limited.

Their observations were as below;

Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg. (m)	Roots Implicated	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
C1	Jasmine	Early Mature	Good	6	2	5	0.5	N	Subject to past management.	No work required.			Boundary vegetation	UKN
S1	Rose	Semi-Mature	Good	1.5	1.0	10	2.9	N	Subject to past management.	No work required.			45 Gondar Gardens London NW6 1EP	PH
SG1	Mixed species shrubs	Early Mature	Good	3	2	25	4	N	Subject to past management.	No work required.		Includes Hydrangea, Rose, Jasmine, Choisya, Magnolia and Pyracantha.	45 Gondar Gardens London NW6 1EP	PH
SG2	Mixed species shrubs	Semi-Mature	Good	2	1.0	10	4.4	N	Subject to past management.	No work required.		Includes Jasmine, Camelia, Rose and Honeysuckle.	45 Gondar Gardens London NW6 1EP	PH
T1	Elder	Early Mature	Good	3.5	2	60*	4.5	N	Subject to past management.	No work required.			47 Gondar Gardens London NW6 1EP	P3P

[redacted]

Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg. (m)	Roots Implicated	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
T2	Apple (Crab)	Mature	Good	5	4	120	12	N	Subject to past management.	No work required.			47 Gondar Gardens London NW6 1EP	P3P
T3	Lime	Mature	Good	17	8	500*	20	N	Subject to past management.	No work required.		Location estimated, unable to see fencelines.	39 Gondar Gardens London NW6 1EP	P3P
T4	Oak	Mature	Good	21.2	12	950	24	Y	Subject to past management.	Fell and treat stump (deciduous).	Access through building.	Located on fence line, looks likely to be PH owned. Cavity in base.	Boundary Tree	UKN
T5	Oak	Mature	Good	18	12	1000*	33	N	Subject to past management.	No work required.			District Land Registry Search Required	UKN
T6	Ash	Mature	Good	19	8	400*	28	N	Subject to past management.	No work required.			49 Gondar Gardens London NW6 1EP	P3P
T7	Poplar (Lombardy)	Mature	Good	22	8	800*	30.0*	N	Subject to past management.	No work required.			49 Gondar Gardens London NW6 1EP	P3P

Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg. (m)	Roots Implicated	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
T8	Ash	Early Mature	Fair	1.5	1.0	50*	1.7	N	Subject to past management.	No work required.		Has been cut down to height of Jasmine.	47 Gondar Gardens London NW6 1EP	P3P

* Value is estimated

The recommendations for restoring ground stability were as follows;

4.2 Recommended vegetation management to address the current subsidence:

Tree No:	Species	Works Required
T4	Oak	Fell and treat stump (deciduous)

5.0 STATUTORY CONTROLS

London Borough of Camden Council has confirmed that none of the implicated vegetation is subject to a Tree Preservation Order or Conservation Area controls.

The Oak tree T4 appeared to be on the garden boundary but mainly growing on the Policyholders side of this.

T4 - Oak

On 02/11/2020 we updated the Policyholder and provided a mandate for her to sign and return in regard to the implicated tree. At the time of writing that still remains unreturned.

On 5 February 2021 the Policyholder and other nearby owners received a letter from the Council, they had applied a TPO order to the implicated Oak tree and within their letter advised;

The Council has made the TPO because:

The Oak Tree in the rear garden of 45 Gondar Gardens is not situated within a Conservation Area and therefore has no existing statutory protections. A member of the public, who believes that the tree may be under threat of removal, has brought the tree to the attention of the Council.

The tree is not visible from the street as it is hidden by the terraced houses however, it is visible from Hampstead Cemetery behind which is accessible by the public. The tree forms part of a corridor of trees along the rear boundary of the Gondar Gardens properties and the cemetery and is one of the larger more outstanding trees within the corridor.

It is considered to provide significant visual amenity to the public and to make a positive contribution to the character and appearance of the area. As a species, oak trees are particularly useful to a wide variety of biodiversity as well as an important sink for CO2 and other pollutants. This tree also contributes to privacy screening between the rear gardens and the cemetery.

It is recommended that a Tree Preservation Order is served to protect the visual local amenities the tree provides and preserve the character and appearance of the area.

The Order took effect, on a provisional basis, on **5 February 2021**. It will continue in force on this basis for 6 months or until the Order is confirmed by the Council, whichever occurs first. The Council will consider whether the Order should be confirmed, that is to say, whether it should take effect permanently. Before this decision is made, the people affected by the Order have a right to make Objections against the TPO, or Representations in support of the TPO.

Borough Solicitor
Andrew Maughan

We understand that this same tree is also now implicated in causing similar damage to the left side property as well, at number 43 Gondar Gardens.

In the light of this recent development we have requested that the monitoring should be continued for the time being and that an immediate TPO Application is now submitted by the Arboriculturalists.

4.2.2 **Repair:**

We have not yet decided on the final type of repair required, but have produced an outline of the most likely requirements. This involves undertaking superstructure repairs and redecoration. This decision has been taken based on our knowledge and experience of dealing with similar claims. In addition the results of the Site Investigation, laboratory testing and monitoring have been taken into account.

If the tree is removed we anticipate that building repairs can be carried out for less than [redacted] If the tree remains, and damage continues, then a foundation stabilisation scheme will be needed. Depending upon the design we anticipate costs will then likely escalate and which having regard to the restricted access, impact of such works on the occupant and the need for temporary accommodation and storage, as well as party wall matters and fees, that a sum in excess [redacted] would not be an unlikely outcome based on similar schemes with which we have been involved.

On behalf of Sedgwick International UK

David Billington MCIOB FCILA ACII
Senior Building Consultant

Your claims technician: **Manni Somal**
[redacted]