

## **Engineers Conclusion Report – Site Investigations**

**20 Churchill Road London NW5 1AN**

**Ref:QG1T1074537**

Following the occurrence of vegetated related subsidence at this property which has resulted in crack damage and distortion a site investigation was undertaken on 24 January 2019.

Within this request, QuestGates Limited are to prove that;

1. On the balance of probabilities, there is sufficient evidence to demonstrate that the nearby trees are influencing the ground conditions under the property.
2. You are indemnified against any claim for heave as a result of the vegetation removal.

### **Supporting Evidence**

#### **Nature and Extent of Damage**

Externally, we noted severe crack damage to the left hand splay of the two storey bay with crack widths up to 30 mm.  
The left hand splay was also distorted.

A separation crack was viewed between the left hand central pier of the bay and the sash window frame of 10 mm.

Cracking was also noted to the lower ground floor window cill and onto the brickwork below to all sections of the bay.

The brick built bin store had pulled away from the wall and was close to collapse.

The front retaining wall opposite the bay was out of plumb.

Internally, cracking was noted to the painted timber panel below the left hand splay of the bay 5-6 mm in width and the left hand window frame was distorted with a gap between the glazing and the timber – lounge of the lower ground floor flat.

The external entrance door to the lower ground floor flat was difficult to open and close.

The damage would be described as Category 4-5 using the BRE 251 Classification.

### Trial Hole 1

A trial hole was excavated adjacent to the front bay and that revealed a shallow concrete footing with the underside 200 mm below ground level seated on stiff brown slightly sandy clay.

A trial hole extended by hand auger revealed this material to continue to a depth of 3000 mm where the trial hole was terminated.

### Laboratory Analysis

Analysis of soil samples taken from Trial Hole 1 revealed clay of very high plasticity that would be subject to volumetric change with changes in moisture content. Evidence of desiccation was noted below foundation level.

Roots found below the foundation level were identified as Plane and shrubs.

### Trial Hole 2

A trial hole was excavated adjacent to the front wall close to the entrance to the lower ground floor flat and that revealed a brick footing with the underside 150 mm below ground level seated on stiff brown slightly sandy clay.

A trial hole extended by hand auger revealed this material to continue to a depth of 3000 mm where the trial hole was terminated.

### Laboratory Analysis

Analysis of soil samples taken from Trial Hole 2 revealed clay of high to very high plasticity that would be subject to volumetric change with changes in moisture content.

Evidence of desiccation was noted below foundation level.

One root found below foundation level was identified as plane.

### Drainage Survey

The underground drainage system was surveyed and no defects identified.

### Conclusion

Based on the above findings, we believe that the property has suffered an incident of Subsidence due to root induced clay shrinkage.

### Next Steps

On the basis of the Site Investigation evidence we will instruct an Arboriculturist to inspect and provide recommendations on the extent of mitigation works required. The trees implicated in causation of damage are the Local Authority London Plane street trees.

We trust the above and enclosed is of assistance. In the meantime, should you have any queries, please do not hesitate to contact our office.