**QG Ref:** QG1S1141035

**NAME & ADDRESS OF CUSTOMER:**

**SITUATION OF LOSS:** , Silverton Lodge, 118 Church Road, London, SE19 2UE

# Engineers Investigation Conclusion Report

We refer to our previous advices in relation to this case and following receipt and review of intrusive investigations results can summarise our findings as follows:

Trial Hole/Borehole 1

A trial pit was excavated at the front left of the building to expose the footings and then extended by hand auger to 2.3m where refusal was met due to the stiffness of the clay.

A stepped concrete strip footing was exposed, 350mm thick and at 0.6m below ground level bearing onto a stiff, becoming very stiff, sandy CLAY containing abundant roots. The clay extended the full depth of the borehole which remained dry and open on completion.

Atterberg limit tests showed the clay to be of high plasticity which equates to a medium volume change potential in accordance with NHBC 4.2 'Building Near Trees'. Moisture contents were very low and increasing slightly with depth but well below the plastic limit, indicating the soil was desiccated at the time of sampling.

Root analysis indicated both Quercus (Oak or Sweet Chestnut) and Acer (Maple or Sycamore) roots from underside to the full depth of 2.3m.

Conclusion

Based on the above findings, we are satisfied that the subsidence damage has been caused by root-induced clay shrinkage. Level monitoring should support this conclusion if cyclical movement is shown. Fortunately, the problem is reversible. In winter months, the clay rehydrates and swells. Provided the cause of movement (in this case the trees) can be addressed, then stability should be achieved, and repairs can then be undertaken.

Next Steps

We recommend a specialist Arboricultural report to advise on the scope of tree management required. Level monitoring should continue following tree works to confirm stability before repairs are carried out.

N. Crawford

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9th September 2023