

TREE PRESERVATION ORDER: (TPO 2014/2552)

TREE WORK(S) - as referenced in the MWA Arboricultural Report:

TG1 Sycamore (x2) - Remove (fell) to ground level and treat stumps to inhibit regrowth.

REASONS FOR WORKS: The above trees are considered to be responsible for root induced clay shrinkage subsidence damage to 8 Haslemere Road, N8 9QX.

Technical and Site Investigation Evidence

Engineering opinion is that clay shrinkage subsidence is a cause of damage. Details of the damage are included in the engineering technical report(s) submitted. Investigations in to the cause of damage have confirmed the following information/evidence:

Soils

- Foundations are bearing on to a cohesive clay.
- The clay subsoil has a medium to high volume change potential (NHBC Guidelines) susceptible to undergoing volumetric change in relation to changes in soil moisture.
- A comparison between moisture content and the plastic and liquid limits suggests moisture depletion/desiccation in TP/BH1 and TP/BH2 (April 2025).

Roots

- Roots were observed to a depth of 2.0m bgl in TP/BH1 and 1.5m in TP/BH2 (13/03/2025) and 2.2m TP/BH1 (13/06/25) recovered samples have been positively identified (using anatomical analysis) as *Acer spp* in the origin of which will be TG1 Sycamore confirming their influence on the soils below the foundations.
- The observed moisture depletion / observed desiccation is coincident with recorded root activity at depths beyond ambient soil drying effects and consistent with the soil drying effects of the implicated trees.

Monitoring

- Level monitoring for the period 18/04/2024 – 04/08/2026 has recorded a pattern of seasonal movement indicative of the soil drying effects of the subject trees below foundation level. The uplift phase of the building can only be attributable to an expanding clay soil from a desiccated (shrunken) state related to soil water extraction by the implicated trees.

Drains

- The drains have been surveyed and no significant of defects were found. The defects that were found were repaired in May 0226. Drains can be discounted as a causal factor given the recorded desiccation and by reference to the level monitoring data.

Heave

- The subject trees do not pre-date the construction of the house therefore there would be no risk of adverse soil heave occurring after the trees are removed.

Mitigation History

- No tree works have been carried out during the period of the claim or in the recent past in relation to the damage to the building.
- No recent structural alterations or building works have been carried out. The property has been the subject to a previous subsidence claim (approx. 25 years ago) related to the influence of vegetation surrounding the property on soil moisture and volumes below foundation level. Superstructure repairs were undertaken and the left-hand bay was underpinned.

Mitigation Options Considered

Tree Reduction

- Consideration has been given to pruning alone as a means of mitigating the vegetative influence, however in this case, this is not considered to offer a viable long-term solution due to the proximity of the implicated vegetation.

Root Barrier

- A root barrier has been considered as an alternative to tree removal. This is unlikely to be a viable option due to the proximity of the trees to the building and the potential for destabilising the trees and building.

Underpinning

- Superstructure repairs and decorations are currently estimated to be £23k should the tree works be undertaken. Costs for underpinning in the event the tree works do not proceed are currently estimated to be £70k-£85k.

Replacement Planting

- Replacement planting of standard size trees with agreement of Local Authority. The following species are suggested: Common Birch (*Betula pendula*) or Himalayan Birch (*Betula utilis*) or Mespilus (*Amelanchier lamarkii*) to be planted no closer than 10m from the risk address.

The evidence confirms that on the balance of probabilities the subject trees are a material cause of the subsidence damage.

SUBSIDENCE CHECK LIST

- A description of the property, including a description of the damage and the crack pattern, the date that the damage first occurred/was noted, details of any previous underpinning or building work, the geological strata for the site identified from the geological map.
Technical Report and Site Investigation Report provided.
- Details of vegetation in the vicinity and its management since discovery of the damage. Include a plan showing the vegetation and affected building.
MWA Arboricultural Report provided.
- Measurement of the extent and distribution of vertical movement using level monitoring. Where level monitoring is not possible, state why and provide crack monitoring data. Data provided must be sufficient to show a pattern of movement consistent with the presence of the implicated tree(s).
Level Monitoring provided.
- A profile of a trial/bore hole dug to identify foundation type and depth and soil characteristics.
Site Investigation Report provided.
- The sub-soil characteristics including soil type (particularly that on which the foundations rest), liquid limit, plastic limit and plasticity index.
Site Investigation Report provided.
- The location and identification of roots found. Where identification is inconclusive, DNA testing should be carried out.
Site Investigation Report provided.
- Proposals and estimated costs of options to repair the damage.
Addendum Technical Report provided including repair costs.