

TREE PRESERVATION ORDER: (TPO 1506 1992)

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

TG1 Lombardy Poplar (x3) Remove (fell) to near ground level. Owner to physically remove any regrowth (no chemical treatment due to translocation risk).

TG2 Lombardy Poplar (x2) Reduce height by 8m. Remove regrowth on a biennial cycle to maintain at broadly reduced dimensions (subject to review if movement persists).

REASONS FOR WORKS: The above trees are considered to be responsible for root induced clay shrinkage subsidence damage to 3 Coronation Road, PO7 7FA.

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 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 (January 2026).

Roots

- Roots were observed to a depth of 1.6m bgl in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as *Populus* spp. the origin of which will be TG1 and TG2 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 18/03/2026 – 16/07/2026 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. Crack monitoring has also recorded a pattern of crack width variation consistent with the seasonal

influence of vegetation. Crack monitoring for the period 17/10/2025 – 16/07/2026 has recorded a pattern of crack movement indicative of the effects of the offending trees on soil moisture and volumes to the property. Crack closure can only be attributable to an uplift of the building due to an expanding clay soil from a desiccated (shrunken) state due to the soil drying effects of the subject trees.

Drains

- The drains have been surveyed and no significant defects were found.

Heave

- The risk of heave has been assessed by engineers as being acceptable.

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 not been underpinned.

Mitigation Options Considered

Tree Reduction

- Consideration has been given to pruning alone as a means of mitigating the vegetative influence of TG1, 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. To be effective a root barrier would need to extend across neighbouring gardens, and the consent of the neighbouring property owners would be required. There is limited access for the machinery required to excavate a deep root barrier.

Underpinning

- Superstructure repairs and decorations are currently estimated to be £14k should the tree works be undertaken. Costs for underpinning in the event the tree works do not proceed are currently estimated to be £65k.

Replacement Planting

- Replacement planting of standard size trees with agreement of Local Authority. The following species are suggested: Hornbeam (*Carpinus betulus*) or Birch (*Betula pendula*).

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 Tech Report provided with repair costs.