TREE PRESERVATION ORDER: C693 2007 13.03.09

TREE T1 Beech of MWA Arboricultural Report

Works - REMOVE

Reason: The above tree is considered to be responsible for root induced clay shrinkage subsidence damage to 22 Daleham Gardens, London, NW3 5DA.

Investigations in to the damage have been conducted and the following information/evidence obtained:

1. Engineering opinion is that damage is due to clay shrinkage subsidence. Details of the damage are included in the Crawford Technical report submitted.

2. Foundations are bearing on to clay.

3. The clay subsoil has a medium to high volume change potential (NHBC Guidelines).

4. A comparison between moisture content and the plastic and liquid limits suggested moisture depletion in TP/BH1 (January 2019).

5. Roots were observed to a depth of 2.0m bgl in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as Fagus spp.; the origin of which will be T1 Beech, confirming its influence on the soils below the foundations.

6. The observed moisture depletion is coincident with recorded root activity at depths beyond ambient soil drying effects and entirely consistent with the soil drying effects of the implicated trees.

7. Level monitoring for the period 09.06.19 to 08.04.20 has recorded a pattern of movement indicative of the effects of seasonal soil drying by the subject Beech tree below foundation level. The uplift phase of the building can only be attributable to an expanding clay soil from a desiccated (shrunken) state due to the soil drying effects of the implicated tree.

8. The drains have been surveyed and no significant defects identified. Drains can be further discounted by reference to the level monitoring data.

9. No tree works have been carried during the period of the claim or in the recent past in relation to the damage to the front right corner of the dwelling.

10. No recent structural alterations or building works have been carried out. The property has not been underpinned.

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11. A root barrier has been considered as an alternative to tree removal. This is not a viable option due to the proximity of the tree to the building and the potential for destabilising the tree and building.

12. The evidence confirms that on the balance of probabilities the subject tree is a material cause of the subsidence damage.

13. Superstructure repairs and decorations are currently estimated to be £17k should the tree works be undertaken. Costs for underpinning & repairs in the event the tree works do not proceed are currently estimated to be £70K.

14. Replacement planting of standard size trees will be funded by insurers subject to planting location – to be agreed with the LA.

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

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