



TREE PRESERVATION ORDER: Unknown (28a Glenilla Road, NW3 4AN)

TREE T1 London Plane of MWA Arboricultural Report

Works - Remove (fell) to near ground level.

Reason: The above tree is considered to be responsible for root induced clay shrinkage subsidence damage to 16 Belsize Park Gardens, London NW3 4LD

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 reports submitted.
2. Foundations are bearing on to shrinkable clay.
3. The clay subsoil has a high-volume change potential (NHBC Guidelines).
4. A comparison between moisture content and the plastic and liquid limits suggests that at the time of sampling the soil was moisture depletion in both TP/BH1 and TP/BH2 (September 2019).
5. Roots were observed below foundation depth in TP/BH1 & 2, and recovered samples have been positively identified (using anatomical analysis) as *Platanus* spp (plane) the origin of which will be the subject plane tree 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 15/08/2019 to 18/02/2021 has recorded a pattern of movement indicative of the effects of seasonal soil drying by the subject plane 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 vegetation.
8. Drains can be discounted as a causal factor given the recorded desiccation and by reference to the level monitoring data.
9. No tree works have been carried out during the period of the claim or in the recent past.
10. No recent structural alterations or building works have been carried out. The property has not been underpinned.
11. A root barrier has been considered as an alternative to tree removal. This is not a viable option due to the lack of access required for the machinery



12. The evidence confirms that on the balance of probabilities the subject trees are a material cause of the subsidence damage.
13. Superstructure repairs and decorations are currently estimated to be [REDACTED] should the tree works be undertaken. Costs for underpinning in the event the tree works do not proceed are currently estimated to [REDACTED]
14. Replacement planting of standard size tree with agreement of Local Authority. The following species are suggested: Hornbeam or Field maple.

#### 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*

