MichaelAlexander
Berkeley House
304 Regents Park Road
London
N3 2JX
tel +44 (0)20 8445 9115
email mail@maengineers.com
web www.maengineers.com

13 December 2023

Mr J Bere
Bere Architects
The Muse
54a Newington Green
London
N16 9PX

by email

Our Ref: P5641/IH

Dear Justin

26A FERNCROFT AVENUE – STRUCTURAL REPORT ON IMPACT OF TREE

In accordance with your recent instructions, we visited the above property to inspect and review the structural impact of the London Plane tree to the rear of the property.

Mr I Hudson MEng MA(Cantab) CEng MIStructE, a Chartered Structural Engineer and Director of Michael Alexander visited the property on 29 November 2023.

The Property and Site Description

Michael Alexander's Structural Report of 18 July 2023 describes the existing building and its existing structural configuration.

Geological records suggest that the property is underlain by the shrinkable soils of the Claygate Member.

To the rear of the property there is a substantial London Plane tree in very close proximity to the rear elevation. Refer photographs 1,2 & 3 attached. The tree is in within an elevated bed approximately 1m above the ground level generally at the rear of the building. The distance from the trunk to the rear elevation is circa 300mm.

Structural Inspection

- There is evidence that the rear part of the building has been subjected to repeated repairs and partial rebuilding – refer photographs 4 and 5. It appears that one area has been reconstructed and tied into the existing, another area has been repointed, and the parapet looks to have been reconstructed.

- There is a brickwork retaining wall surrounding the bed where the London Plane tree is located. There is significant cracking in several locations to this wall – refer photographs 6 & 7.
- At first floor there is evidence that the rear elevation has been reconstructed as the coursing of the rear elevation does not align with coursing of the side elevation – refer photograph 8.
- In the kitchen there is opening up of the joints in the flooring – refer photograph 9.
- To the first floor bathroom there is cracking in the tiling to the rear elevation - refer photograph 10.
- Internally at ground floor there are several cracks to the walls and ceilings to the rear part of the building. We understand that these have become apparent since a redecoration in 2022. Refer photographs 11-14.

Discussion and Conclusions

The structural risks associated with trees in proximity to buildings include: -

i) Physical action of substantial roots pushing against retaining walls and foundations
ii) Desiccation of soils due to removal of moisture by tree roots causing subsidence of ground impacting foundations.
iii) Physical action of branches or trunk against walls
iv) Risk of falling branches/parts of tree if the tree is in poor condition.

Whilst many of these issues can occur with more remote trees, the risks are significantly higher with such a substantial tree in such close proximity.

Based on our observations summarised above, we would conclude that there has been historic damage to the listed building as a result of a combination of the factors above, and there is also evidence of ongoing issues.

The primary evidence of historic damage is the repairs carried out previously to the rear part of the building; these also look to have occurred at different times suggesting multiple incidences of damage rather than a single event.

The large number of defects internally to the rear part of the building – in contrast to the low number of defects to the front of the property – again points to the tree being the cause. It is particularly of concern that many of these defects have only become apparent since a recent redecoration suggesting an ongoing issue.

Also of concern is the cracking to the rear garden retaining wall. If the cracking worsens it could lead to collapse of the retaining wall, which could in turn destabilise the tree. The same forces acting on this retaining wall will be also be acting on the retaining wall to the rear wall of the house; the concern would be that any damage would be concealed as the wall is hidden by kitchen units internally and is below ground level externally.

On the basis of the above, we would strongly recommend that the tree should be removed, subject to the necessary approvals, to prevent further damage to the Listed building and to the retaining structures within the garden.

We trust that above provides an adequate summary of our findings, however, should you require any further clarification, please do not hesitate to contact us.

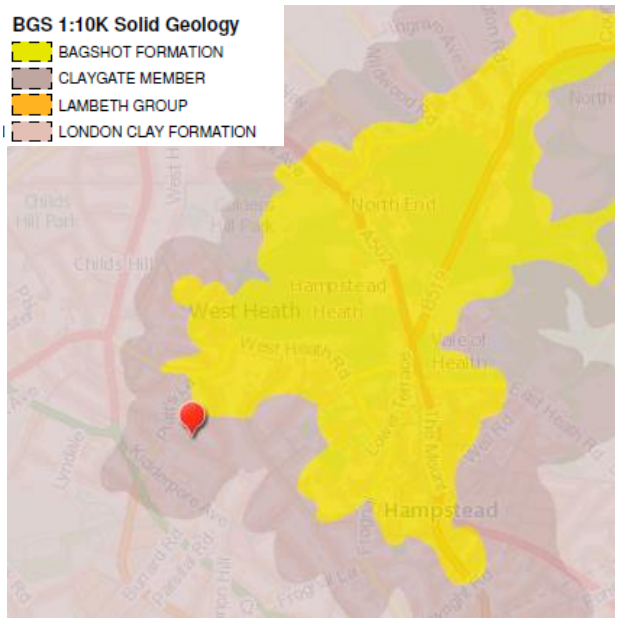
Yours sincerely

ISAAC HUDSON
(hudson@maengineers.com)

Enc. Photos and Diagrams

ANNOTATED AERIAL PHOTO

GEOLOGICAL MAP EXTRACT



PHOTOS FROM 29 NOVEMBER 2023

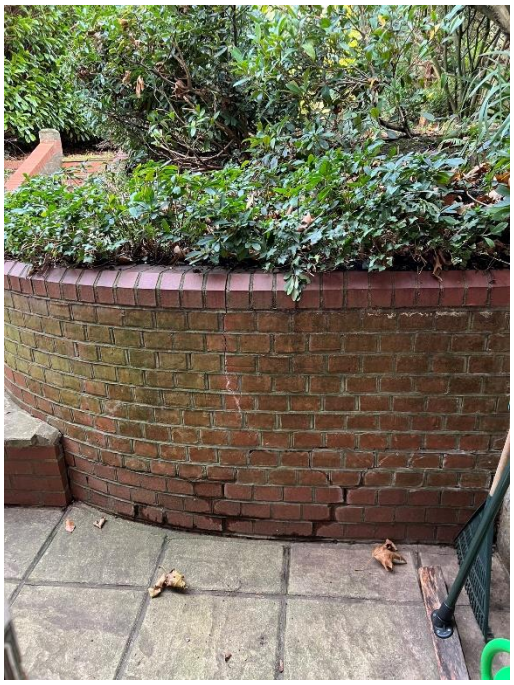
Photograph 1 – View of rear of property showing proximity of tree

Photograph 2 – View from roof of building showing proximity of tree

Photograph 3 – Trunk less than 300mm from rear wall of building

Photograph 4 – Side elevation of rear part of building

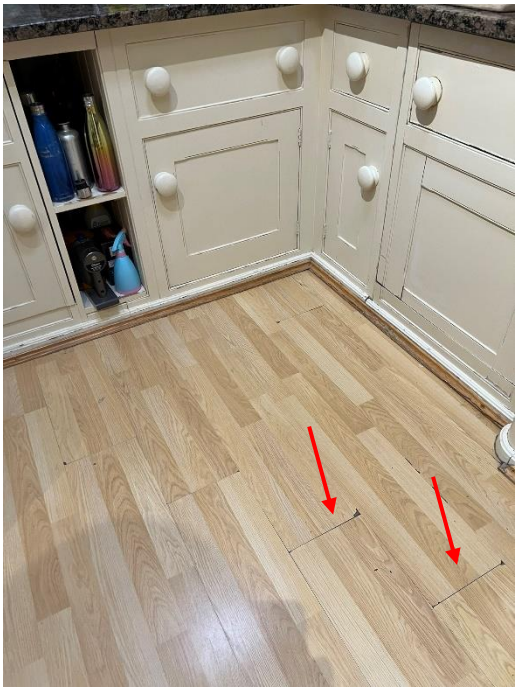
Photograph 5 – Detail of side elevation



Photograph 6 – Cracking to retaining wall

Photograph 7 – Cracking to retaining wall

Photograph 8 – Differing construction of side wall and rear elevation



Photograph 9 – Opening up of flooring in kitchen

Photograph 10 – Crack to tiling in bathroom

Photograph 11 – Cracking to wall

Photograph 12 – Cracking to ceiling

Photograph 13 – Cracking to ceiling

Photograph 14 – Cracking to ceiling