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Structural Appraisal Report for**Ivy House, 128 Highgate Hill, London N6 5HD**

Ref: 231165/H Hawker

Approved By: NN

23 Nov 2023

Version 1

1.0 BRIEF

- 1.1 Conisbee received instruction from Kevin Prosser & Rebecca Murray of Ivy House, 128 Highgate Road, to visit the above property and visually inspect the garden wall to the Highgate Hill side of their property. To provide a report with recommendations for repair in the short and long term. Helen Hawker visited property on Thursday 9th November 2023.
- 1.2 Whilst our investigation work has been taken far enough to satisfy the requirements of the brief, it has, of necessity, not been exhaustive. The findings cannot therefore be warranted to apply to areas of the building not inspected or investigated.
- 1.3 This report is intended for the use of the client, Kevin Prosser & Rebecca Murray and no liability can be accepted for use by any third party.

2.0 WALL TYPE, CONSTRUCTION & CONTEXT

- 2.1 The garden wall is historic although most likely post-dates the houses construction. It is nominally 330mm thick, and 1.5m high, retaining approximately 650mm soil and planting towards the house side. The wall is adjacent to the public pavement along Highgate Hill, which is approximately 1.5m wide.
- 2.2 Ivy House is a Grade II* Listed building, listed with Northgate House by Historic England.
- 2.3 From British Geological Surveys, the ground conditions to this area are Bagshot formation (sand) overlying Claygate member (clay, sand and silt) overlying London clay.

3.0 VISIBLE DEFECTS

- 3.1 There is a vertical crack to the return of the wall, 10mm wide at the top and 4mm close to the bottom.

4.0 OTHER OBSERVATIONS

- 4.1 There is a mature magnolia tree just inside the return of the wall, planted in the retained soil. It has a thick multi-stemmed trunk, which is within 100mm of the wall. It is clear looking at historic images available on google-maps street that the tree has matured considerably over the past few years, and rather than gaining height has been gained girth, with branches over hanging the wall increasing in size.
- 4.2 On google maps street view, the crack can first be clearly identified in 2019, and in many of the images a darker patch is visible on the base of the wall on the return on Highgate Hill side, this is most likely damp penetrating the wall from the retained soil.
- 4.3 There are several smaller yew bushes planted approximately 400mm from the rear of the wall on the retained soil, some adjacent to the magnolia tree.
- 4.4 Screen shots of images from google maps and photos taken during the site visit are appended.

5.0 CONCLUSIONS

- 5.1 It is most likely that the physical growth of the tree has caused the cracking, given the proximity of the tree to the wall, and that its trunk /root system is exerting pressure on the wall which has caused the cracking.
- 5.2 The wall is still visibly plumb, and so is not considered structurally insecure at this time.

6.0 RECOMMENDATIONS AND REPAIRS

- 6.1 An arboriculturist will be able to advise on the predicted growth of the magnolia, especially in terms of its girth, over the life expectancy of tree. As the magnolia is in a restricted quadrant of soil, this may affect the tree in certain conditions, e.g. in times of draught, which could affect the growth and condition of the tree.

- 6.2 An arboriculturist will also be able to advise on whether maintaining the tree e.g., reducing its canopy, will reduce increase in the girth of the trunks and therefore slow down the pressure the tree is exerting on the wall. It must be noted that the yews may also grow considerably, albeit at a slower rate, and advice should be sought on how these are ma.
- 6.3 The crack may be repaired with, and wall return strengthened with stainless steel Heli-bars (or similar) to every third bed joint, extending min 600mm from the crack and about the return. The crack filled with proprietary crack filler, and the joints repointed in mortar to match the existing so that the repair is not visible. Bricks which are cracked through maybe either replaced with like or repaired by using a colour matched repair mortar.
- 6.4 As the property is listed, it is recommended to notify the local conservation planners in good time of the repair intended so they may comment.
- 6.5 The bed-joints strengthening as outlined above will spread stresses imparted on the wall by any plant/root growth to its rear – and therefore should reduce visible cracking. If the growth continues however, it may potentially de-bond after time, and the crack re-appear. It is difficult to give an estimate on the time frame for this, as will depend on the growth of the magnolia, but one could expect the wall to remain structurally stable for 10-15 years.
- 6.6 If it was considered to remove the magnolia, then bed joint reinforcement could be undertaken to both sides of the wall. A new tree appropriate for the site should be planted at a suitable distance from the wall, ideally within a container that will restrict the root and trunk growth.
- 6.7 Sketches showing the existing and proposed repair is appended.

Signed by author



Helen Hawker

MSc BEng (Hons) CEng MStructE

Principal Engineer, Conisbee

IMAGES



1 Google maps August 2017



2 Google maps 2019



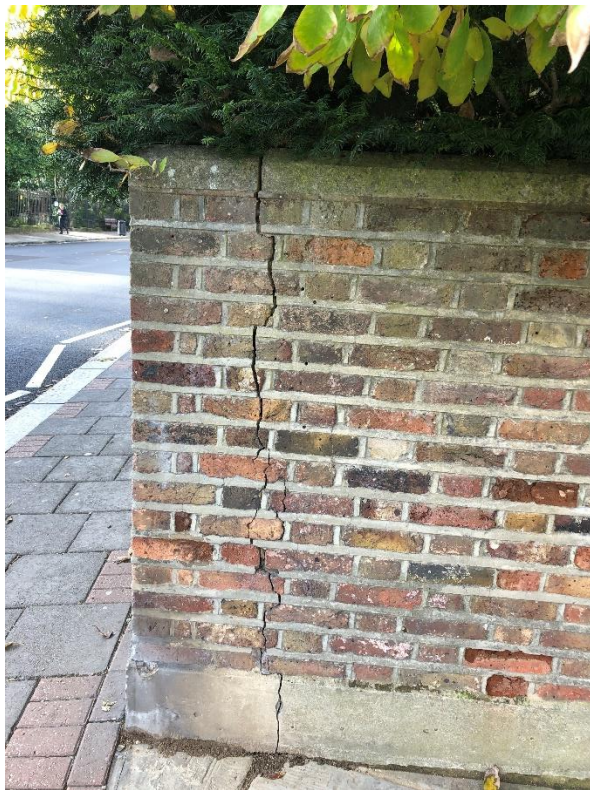
3 Google maps April 2021



4 Google maps February 2022



Photo taken on 9.11.23

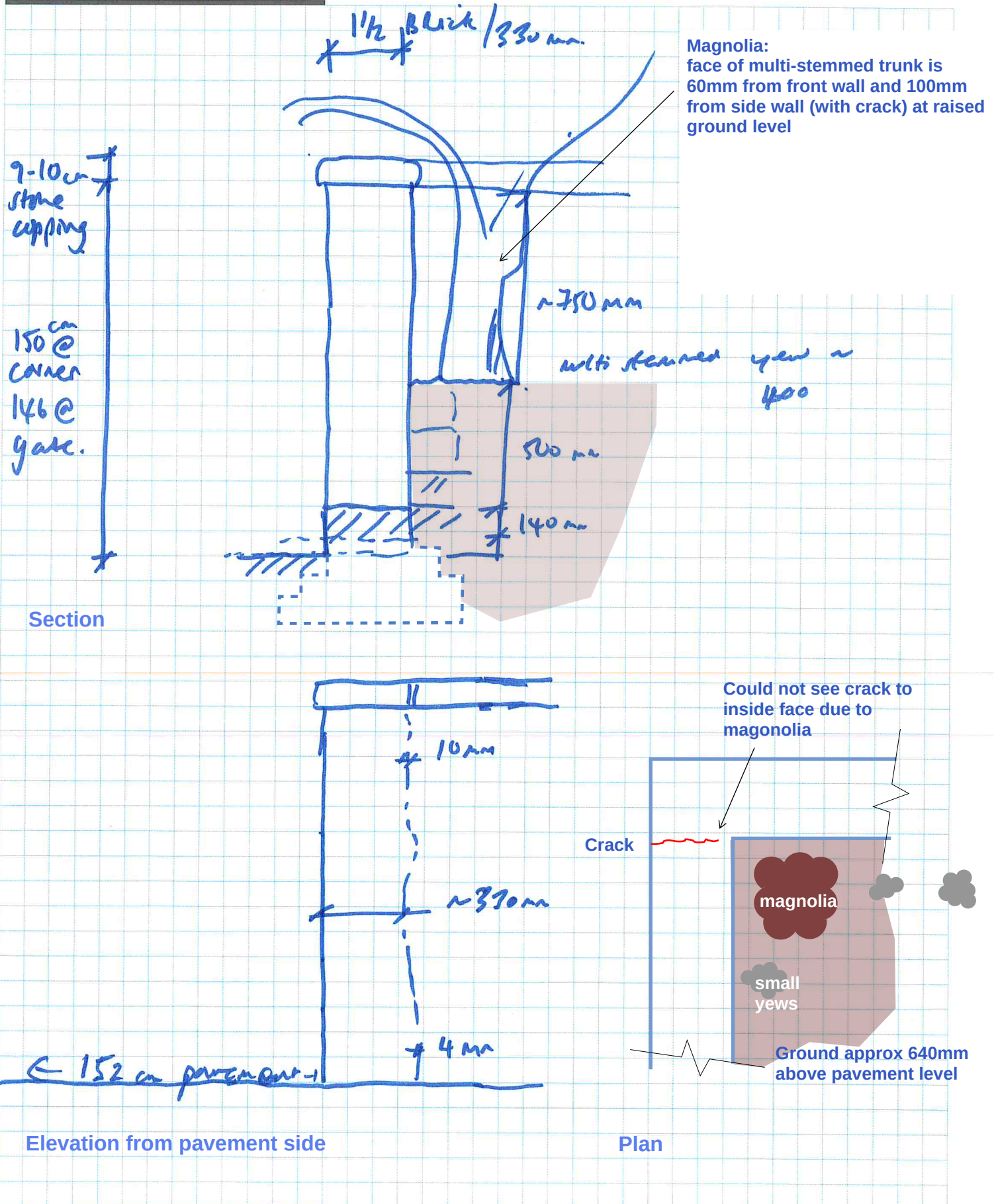


Close up by author.



View to rear of wall - magnolia

Rev Date Description



Elevation from pavement side

Plan

Rev Date Description

