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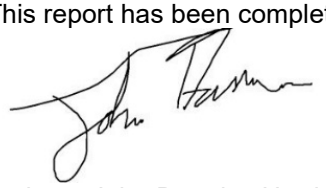
82 Fitzjohn's Avenue, London, NW3 6NP

Report Contents

1.0 Introduction

1.1 This report has been completed by John Harrison for Harrison Shortt Structural Engineers Ltd.

1.2 

1.3 Anthony John Douglas Harrison (MIStructE (028362792), MEng, CEng).

1.4 Harrison Shortt Structural Engineers Ltd. (HSSE) have been appointed by the building owners to prepare the structural design of the alterations at 82 Fitzjohns Avenue.

1.5 This report is focused solely on the boundary wall with spring walk

2.0 Existing Building, Site and Ground Conditions

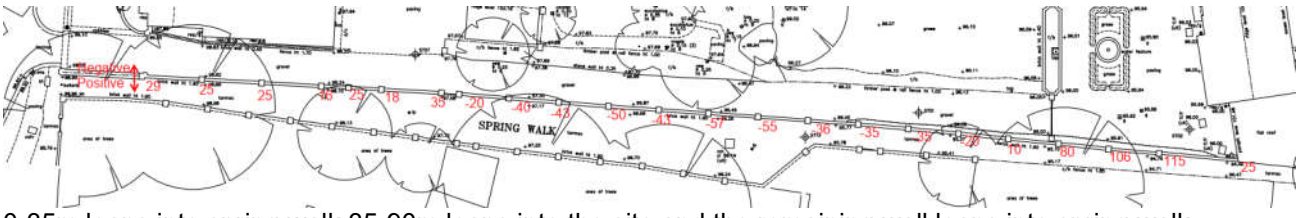
2.1 The site is rectangular on plan with an L-shaped house at the Eastern most end.

2.2 The site is accessed by a shared narrow driveway immediately adjacent and to the south of the Detached Victorian Villa (now 4 flats).

2.3 The boundary wall along the driveway is a solid 9" (215mm) thick brick wall with 18" brick piers (450 x 450) at varying centres along the walls length.

2.4 The underlying ground is a nominal amount of made ground over the claygate member to the full depth of the investigation.

3.0 Observations

3.1 

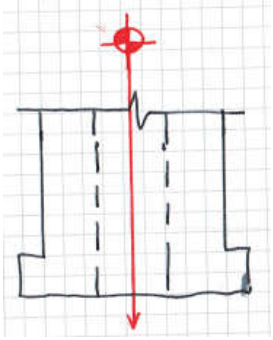
0-35m leans into spring walk 35-90m leans into the site and the remaining wall leans into spring walk

3.2 Sample of vertical laser line projected onto wall

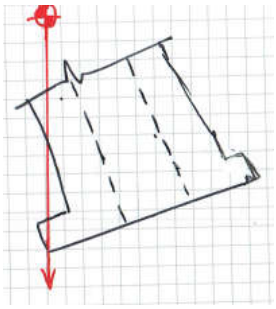
3.3 The house is about to undergo a significant refurbishment with an increased amount of heavy traffic for a prolonged period.

4.0 Discussions

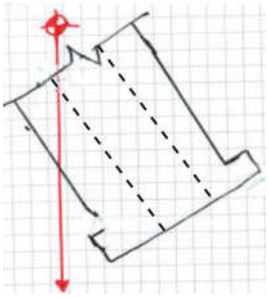
4.1 Masonry walls are a gravity structure that are stable under self weight, for this to happen the centre of mass must remain within the footprint of the wall.



Centre of mass in the centre of the base



Centre of mass at edge of base



Centre of mass outside base

4.2 The heavy traffic in close proximity to the road will cause:
Vibration, Compaction of the ground and lateral pressures on the wall all of which can cause the existing lean to worsen most likely outwards into spring walk.

4.3 The simplest solution is to divert the traffic away from the wall this as much as possible and will be implemented for the majority of the garden however in the shared driveway adjacent to number 84. there is insufficient space to give an exclusion zone and therefore these forces cannot be avoided the wall should be dis-assembled for the duration of the construction works and reassembled once the works are complete

5.0 Conclusions

5.1 Further lean in either direction on the wall should be prevented because if the centre of mass is moved beyond the base it is liable to overturn. The consequences if the wall landed on a member of the public on spring walk or a construction worker are unacceptable.

5.2 Where possible the traffic should be kept back form the wall with a fence creating an exclusion. Where this is not possible local to the house the wall should be carefully dis-assembled (the bricks labelled and kept) for the duration of the construction works and reassembled once the works are complete.