

**Feasibility Report**

for

**Works to Rear Garden  
Boundary Wall**

at

**1-3 Englands Lane,  
London NW3 4YA**

For

**London Borough of Camden**

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|---------------------|--------|--|--|--|--|
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JOB No: 24202

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## **1.0 INTRODUCTION**

- 1.1 The boundary wall inspection was undertaken at 14:00 on Wednesday 9<sup>th</sup> January 2013 by David Willis of Bailey Partnership after an instruction on 21<sup>st</sup> December 2012 from LB Camden.
- 1.2 The boundary wall was only inspected from the Building Owner's property (No.3)
- 1.3 This property falls under the 'Eton' Conservation Area.

## **2.0 CONSTRUCTION**

- 2.1 The boundary wall is constructed in yellow stock brickwork. The single brick thick wall varies in height with brick built piers at regular intervals.
- 2.2 The wall has a brick on edge capping detail and is assumed to have minimal foundations built on a splayed brick corbel. There is a timber tongue and groove fence located above the lower part of the wall supported on timber posts. These timber posts fall on the Adjoining Owner's (No.1) property.
- 2.3 The wall near the house has an adjoining structure (assumed to be an external staircase). Towards the rear of the garden the wall has a number of trees and shrubs in close proximity to the wall.

### 3.0 SURVEY FINDINGS

3.1 For the purpose of this survey the wall has been split into five sections, as described below. A drawing is included in appendix A of this report.

#### 3.2 Section A: Between the House and the First Pier (Figure one)

3.2.1 The brickwork joins into the property at high level (approximately 4m above ground level), sloping down to approximately 1.47m above ground level at the first pier. This section of the wall at the time of the survey showed minimal deflection.



*Figure 1: Sections A&B, damp patches visible*

3.2.2 It is assumed that external steps adjoin the wall on the side of No.1 (although this needs to be confirmed) with damp patches on the side of No. 3 suggesting that water is soaking through the brickwork. There is also a small damp section on the rear wall of No.3 at first floor level.

3.2.3 Apart from the damp patches the brickwork to this area is in good condition and the pointing has been renewed recently.

3.2.4 It is recommended that this section of wall has additional investigations carried out to the side of No.1 to identify the source of the damp and to identify if any preventative measures are required and practicable. No other works to this part of the wall are recommended at this time.

### 3.3 Section B: Between the First Pier and the Second Pier (Figure 2)

- 3.3.1 The lower level wall to Section B (approximately 1.47m above ground level) has timber fence panels above. The pointing is in good condition to this area. The brickwork condition is reasonable, but contains 2no voids where bricks are missing. The centre of the wall between the piers has noticeable deflection at approximately 30-50mm towards No.1.



**Figure 2: Section B, note missing bricks**

- 3.3.2 It is recommended that this section of wall is dismantled and rebuilt with suitable foundations.
- 3.3.3 The timber fence above the wall is in poor decorative condition, but does not show signs of decay. It is recommended that it is treated with preservative.

### 3.4 Section C: Between the Second and Third Pier (Figure 3)

- 3.4.1 The wall continues in the same construction as Section B. The brickwork and pointing to this area is in poorer condition than previously noted, especially at low level.
- 3.4.2 The third pier is deflecting towards No.1 by more than 100mm. This is likely to be caused by the root action of the adjacent tree (see section 3.5 below), which is touching the pier, and likely to be exacerbated by shallow foundations. Cracking was not noted in this area. *Figure 3* below shows the close proximity of the tree to the wall.





**Figure 3: Third pier and adjacent tree.**

3.4.3 It is recommended that

- i. the wall carefully dismantled;
- ii. new foundations constructed and wall reconstructed to the same height and appearance as existing.

### 3.5 Section D: Between the Third and Fourth Pier

3.5.1 The wall between the third and fourth piers had limited inspection due to vegetation growth in close proximity to the wall preventing smaller defects being visible. However, deflection of more than 125mm towards No.1 was observed.

3.5.2 A bullace tree is present in close proximity to the wall. A large buddleia is rooted into the centre of the wall which has displaced the brickwork.

3.5.3 It is recommended that;

- i. all vegetation is completely removed including the bullace tree;
- ii. the wall is carefully dismantled;
- iii. new foundations constructed and wall reconstructed to the same height and appearance as existing.

### 3.6 Section E: Between the Fourth Pier and the End of the Garden

3.6.1 The wall towards the end of the garden is of the same condition in terms of deflection as section D, > 125mm towards No.1. Two trees are also present which are likely to be affecting the wall:

- i. a birch, with a trunk 200mm diameter, within 2m of the wall in garden of No.3;
- ii. a lime, within approx 4m of the wall in garden of No. 1.

3.6.2 It is recommended that;

- i. all vegetation is completely removed including the birch tree in the garden of No.3 in close proximity to the wall, but retaining the protected lime tree in the garden of No.1;
- ii. the wall is carefully deconstructed;
- iii. new foundations and a new wall constructed to the same height and appearance as existing, re-using the existing bricks with foundations to accommodate the roots of the protected lime tree.

## 4.0 RECOMMENDATIONS

### 4.1 Summary of findings:

- Section A: Minimal deflection, damp patches
- Section B: 30-50mm deflection towards No.1 at centre
- Section C: >100mm deflection towards No.1 at third pier, tree in close proximity
- Section D: >125mm deflection towards No.1, vegetation to wall, tree near wall
- Section E: >125mm deflection towards No.1, two trees near to wall

4.2 The trees in close proximity to the wall will have contributed to the deterioration of the wall, through direct root action on the footings and/or the moisture demand of the trees causing desiccation of the London Clay soil in which the footings are located, which will have contributed to the leaning of the wall and its increased susceptibility to damage from other smaller vegetation.

4.3 BRE Good Repair Guide 28: 'Repairing brick and block freestanding walls' recommends that a single brick thick wall such as this should be rebuilt if leaning by more than 70mm.

4.4 NHBC standards indicate 'rule of thumb' values for new foundation depths in proximity to trees. Using the figures in 3.6.1, assuming a high shrinkage soil such as the London Clay in this location, foundation depths of 1.5m - 1.65m would be recommended where the wall is likely to be influenced by the trees.

4.5 It is recommended that:

- i. all vegetation in close proximity to the wall is completely removed;
- ii. the trees adjacent to the wall in sections D & E are removed;
- iii. the wall is carefully deconstructed from section B to section E inclusive;
- iv. new foundations employed to account for nearby protected tree in garden of No.1;
- v. new wall constructed to the same height and appearance as existing, reusing the existing brickwork.

4.6 The excavation and foundations works will take place within the root protection zone of the protected lime tree in the garden of No.1. The contractor undertaking the works will employ the services of a qualified arboriculturist to prepare a full method statement for these works and to be in attendance during all groundworks, ensuring they are carried out in full accordance with BS 5837:2012. All excavations will be hand dug, with roots identified and protected during construction. The new pad and beam foundation is designed to accommodate the roots of the protected tree, with pad positions adjusted on-site to suit. Temporary protection and hoardings will also be provided to prevent any damage to the lime tree trunk or branches. The contractor will be employed directly by LB Camden from their approved list.