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9th February 2022
Ref: BJM/4242

Dear Andrew,

**Re: Boundary Wall between access road for 86-112 Southwood Lane
and Southwood Lane, Highgate, London, N6**

We were instructed by you to undertake a visual inspection of the wall between the public highway and communal access road and gardens to the front of 86-94 Southwood Lane and report on the condition of the wall with particular reference to the pier at the junction between No.86 Southwood Lane and Highstone House, no.60A Jacksons Lane.

The top of the wall is stepped at approximately 3.5m intervals to follow the slope of Southwood Lane, with a height of between 2.35m and 1.8m above pavement level.

The wall is 9" solid brickwork at the top, with a brick on edge over a tile creasing course. The line of the wall facing the public highway is straight with a 460mm square pier at the south end, a 530mm square pier at the north end and a pair of 530mm square piers, which were presumably on either side of a gate when they were originally built, at about one third along the wall from the north end.

For the southern two-thirds of the wall, on the side of the wall facing the access road, a pair of chamfered blue engineering brick courses increase the thickness of the wall to 15" approximately 300mm below the top of the wall. At approximately 3.5m centres there are also 470mm wide piers which are 19" thick. The wall between the piers increases to this thickness, with a further pair of chamfered courses, at about pavement level on the road side which is generally between 750 and 300mm above ground level on the private side. However, over the last 4m at the south end of the wall, the ground level on the private side rises steeply so the wall immediately adjacent to the south boundary is retaining a height of about 1.5m.

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The north end of the wall, which appears to be older than the rest of the wall, was noted to be 9" thick for its full height but the difference between ground level on either side is limited to about 250mm, with the ground on the on the private side higher than the public footpath.

The condition of the wall was reasonably consistent, with the lower half of the wall leaning out into Southwood Lane by about 25mm and the upper part of the wall vertical for the majority of its length. This lean increased in the last two bays at the southern end of the wall in which the lean increased to a total of 85mm in the height of the wall adjacent to the pier on the boundary with Highstone House.

The pavement face of this pier is leaning out by about 140mm in its height, but the distribution of this distortion differs from one side of the pier to the other. The north corner is leaning out by 70mm in the bottom 450mm of the wall, but on the south corner the majority of the distortion occurs between 0.5m and 2.0m above pavement level.

Detailed inspection of the pier revealed that the outer 4" of masonry facing the public highway was largely de-bonded from the pier behind it, causing the dramatic variations noted in the outer face as the void between this loose section and the bulk of the pier changes.

A length of about 2.8m of the older, north end of the wall was also noted to be leaning out by about 65mm in its total height of about 2.5m.

The pointing was noted to be in need of attention with the mortar either missing or loose in a substantial proportion of the wall. This problem was noted to be worse at the base of the wall where most of the pointing will require repair.

I consider the wall is generally sound but there are aspects of its condition which need further consideration.

- a) The majority of the newer wall acts as a retaining wall at its base to support the public highway with a level difference of up to 750mm. A masonry wall will not be able to resist the current design loads applied in the construction of new walls in this situation, but the wall appears to be performing adequately under the routine loads which are actually applied to it.

The condition at the base of the wall is such that the mortar is in poor condition in most places and I would recommend that the lower part of the wall is comprehensively repointed at a convenient time in the near future. Particular attention should be given to the blue engineering chamfer bricks as several of these are loose and some have fallen out of the wall entirely.

- b) The debonded 4" face of the pier to the party wall with Highstone House needs to be taken down to the level of the public pavement and rebuilt fully bonded to the rest of the pier.

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- c) As the top of the pier to the party wall with Highstone House is also leaning and the repairs necessary to the lower part will undermine it to some extent, I consider it would be beneficial to take down the full section of the upper part of the pier and rebuild it once the repairs to the lower section are complete.
- d) The wall adjacent to this pier is retaining a level difference of about 1.5m and is leaning severely, at an incline of about 1 in 20. I consider that the wall is leaning as it does not have adequate structural capacity to resist the lateral loads from the soil embankment behind it without developing defects such as those noted. I do not consider this is imminently dangerous, but that it will become so over time. Consequently I recommend works are undertaken to stabilise this wall.
- e) The ground level adjacent to the older wall at the north end is about 250mm higher on the private side than the public footpath. This level difference is not significant but this should not be permitted to increase.
- f) The lean noted in the older wall is visible, but the centre of gravity of the wall is still within the central third of the base of the wall. Consequently, despite the lean, this wall is fully in compression and is inherently stable. However it should be monitored annually to ensure it is not deteriorating. If a significant change in its condition occurs, this section may need to be rebuilt in the future.

I do not consider any of the defects noted are sufficient to require emergency works, but I recommend the following works are carried out as soon as a contractor can reasonably be appointed.

- a) The top of the end pier to the party wall with Highstone House should be carefully taken down to ground level on the private side of the wall. After the repairs to the lower section are complete this should be rebuilt with ties chased into the adjacent party wall for a distance of about 2m.
- b) The debonded 4" face of the lower part of this pier should be carefully taken down to the level of the public footpath and rebuilt fully bonded to the rest of the pier. This is probably best achieved using a mixture of brick bonding and resin anchors fixed into the retained section of the pier to secure ties built into the bed joints of the rebuilt facing of the pier.
- c) To rebuild the adjacent leaning section of wall would present major practical problems as the pavement would need to be closed to do this safely. Therefore I recommend that this wall is strengthened by excavating behind it and providing an additional wall capable of resisting the applied loads within the curtilage of the communal garden.
- d) The bottom 450mm of the wall should be repointed on both sides.

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I would also recommend that the whole wall is comprehensively repointed at a convenient point in the near future to prevent the minor defects noted becoming more severe, leading to a significant deterioration in the condition of the wall.

I trust the above clarifies the situation sufficiently. However should you have any queries, please do not hesitate to contact me.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'B J Malone', with a long, sweeping horizontal stroke extending to the right.

B J Malone
MALONE ASSOCIATES