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27th January 2022

Your ref:

Mr David Segaloff
Flat 1
39 Eton Avenue
London NW1 3EP

Dear Mr Segaloff,

Garden walls and steps to the rear of 39 Eton Avenue, London NW1

Further to your recent instructions I have now carried out an inspection of the external garden walls and steps to the rear of the above property and would like to confirm my comments as follows:

1. The garden to the rear of the main block of flats was some 1.1m above the level of the paved terrace, which was directly outside of Flat 1 (refer to photos 01 and 02).There was a set of 1.5m wide steps leading up from the terrace to the garden, which had brick retaining walls to both sides and 440x440mm brick piers at each end. On top of the retaining walls and brick piers were 50mm thick concrete coping stones (refer to photos 10 to 13).

   Coming off the front of the left hand brick pier (when viewed from the front) was a 1.1m high 'L' shaped retaining wall, the front return leg of which abutted the flank wall of the adjacent building No. 37 (refer to photos 03 and 04). The retaining walls appeared to be constructed from 215mm thick solid brickwork, on top of which was a brick-on-edge capping. There were 50mm diameter weep holes towards the bottom of the retaining walls at about 2.0m centres.

   The front left hand wall was seen to be out-of-plumb, leaning 160mm in towards the terrace at the left hand end next to No. 37, and 130mm at the right hand end near to the steps (refer to photos 07 and 08). At the right hand end of this wall was a 60.0mm wide tapering vertical crack in the brickwork, which reduced to 10.0mm at just above paving level (refer to photos 05 and 06).

The return retaining wall, which abutted the left hand pier to the steps, was seen to be out-of-plumb, leaning by up to 120mm in towards the terrace (refer to photo 09). There was a 10.0mm wide tapering diagonal crack in the wall some 1.0m in from the pier (refer to photos 10 and 11).

The front left hand pier to the steps was seen to be out-of-plumb, leaning 120mm in towards the terrace (refer to photo 10). There was a 5.0mm wide stepped horizontal crack towards the bottom of the retaining wall that ran along the side of the steps. This wall had also suffered up to 35mm of inwards horizontal movement at the crack location (refer to photo 12).

The front right hand pier to the steps was seen to be out-of-plumb, leaning 20mm in towards the terrace (refer to photo 13). There was a 5.0mm wide diagonal crack in the retaining wall just to the rear of this pier, which would have been due to the previous outward movement of the pier (refer to photos 13 and 15).

The short length of retaining wall from the front right hand pier to the boundary wall with the adjacent Flat 2 was seen to be out-of-plumb, leaning 20mm in towards the terrace (refer to photo 13). There were a number of 5.0mm wide diagonal cracks in the retaining wall, together with signs of 10.0mm outward horizontal movement of the central portion of the retaining wall (refer to photos 16 and 17) .

The 50.0mm thick paving slabs forming the treads to the steps were seen to be badly cracked in places (refer to photos 18 and 19). The steps generally had 175mm risers, except for the bottom tread which had a 290mm riser (refer to photo 10).

In conclusion I would like to state that the existing 215mm thick solid brick retaining walls around the rear of the paved terrace had suffered excessive rotational movement and have failed.

A retaining wall is generally considered as unstable when the centre of gravity of the wall is outside of the plan area of the wall itself. This means that for a 215mm thick wall it can only be out-of-plumb by a maximum of 70.0mm before it is considered to be unstable. In this instance the two left hand retaining walls have suffered between 120mm and 160mm of outward rotational movement and are therefore unstable.

The left hand wall to the steps, and the front pier, have suffered significant movement and have failed. Similarly, the right hand front pier to the steps has suffered outward rotational movement, as has the front retaining wall coming off this pier.

Unfortunately a 215mm thick brick wall is not sufficiently strong to resist the lateral forces from 1.1m of retained soil, and have then suffered excessive rotational movement, and failed.

All of the retaining walls, and the two front piers to the steps, will need to be taken down and re-built. To resist the applied forces in the long term it is likely that the new walls will need to be increased to at least 330mm thick. The walls can then be reduced to 215mm thick for the last few courses above the upper ground level.

The new walls will still need weep holes at some 2.0m centres, and will need a capping of brick-on-edge Engineering bricks, to closely match the existing walls.

The walls did not appear to have suffered any differential vertical settlement and so the foundations to the same would appear to be sound. This being the case it is hoped that the new strengthened wall can be constructed directly off the existing foundations. A number of trial pits will need to be excavated to check on the width and depth of the existing foundations, to make sure that they will be capable of supporting the new wider retaining wall.

Precast concrete coping stones will need to be installed on top of the new brick piers, and the side retaining walls to the steps, to closely match the existing. It would appear that the two piers at the top of the steps have not suffered any movement and so could be retained.

The steps themselves do not comply with Building Regulations, in that the bottom tread is 290mm high and is therefore much higher than the other steps which are only 170mm high. All of the steps need to have the same riser dimension to meet Building Regulations, and so they are going to have to be removed and re-levelled to suit.

I understand that the existing building was constructed circa 1900's and is Grade 2 listed. The listing describes the building itself, but there is no mention of any external walls or features. The retaining walls in the rear garden, and the set of steps, are thought to have been constructed within the last 40 years and, as such, have no historic merit.

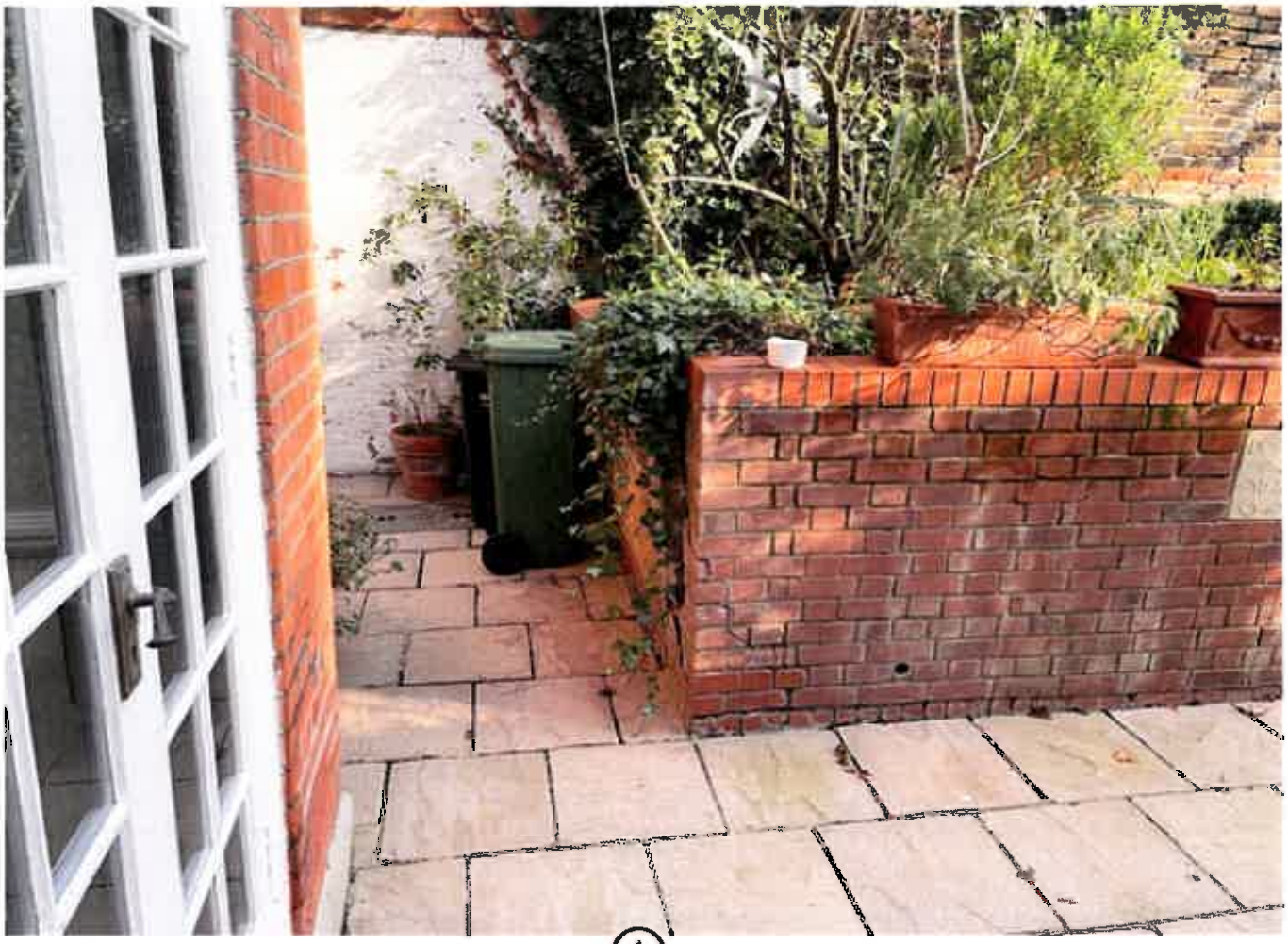
However, you will need to apply for Listed Building Consent for the demolition and re-building of the walls and steps, even though it should be just a formality.

The next step in this process would be for us to prepare plans and elevations of the walls and steps, and to submit to the Planners for Listed Building Consent. Please be aware that this process can take some 8-10 weeks, but whilst the application is being considered Salter Rex could go out and obtain competitive quotations for the works.

I trust that this adequately clarifies the situation but if you would like to discuss the matter further please do not hesitate to contact this office.

Yours sincerely,
CLIVE ADAMS ASSOCIATES LTD

Clive Adams
B.Sc (Hons) C.Eng M.I. Struct.E. M.I.C.E



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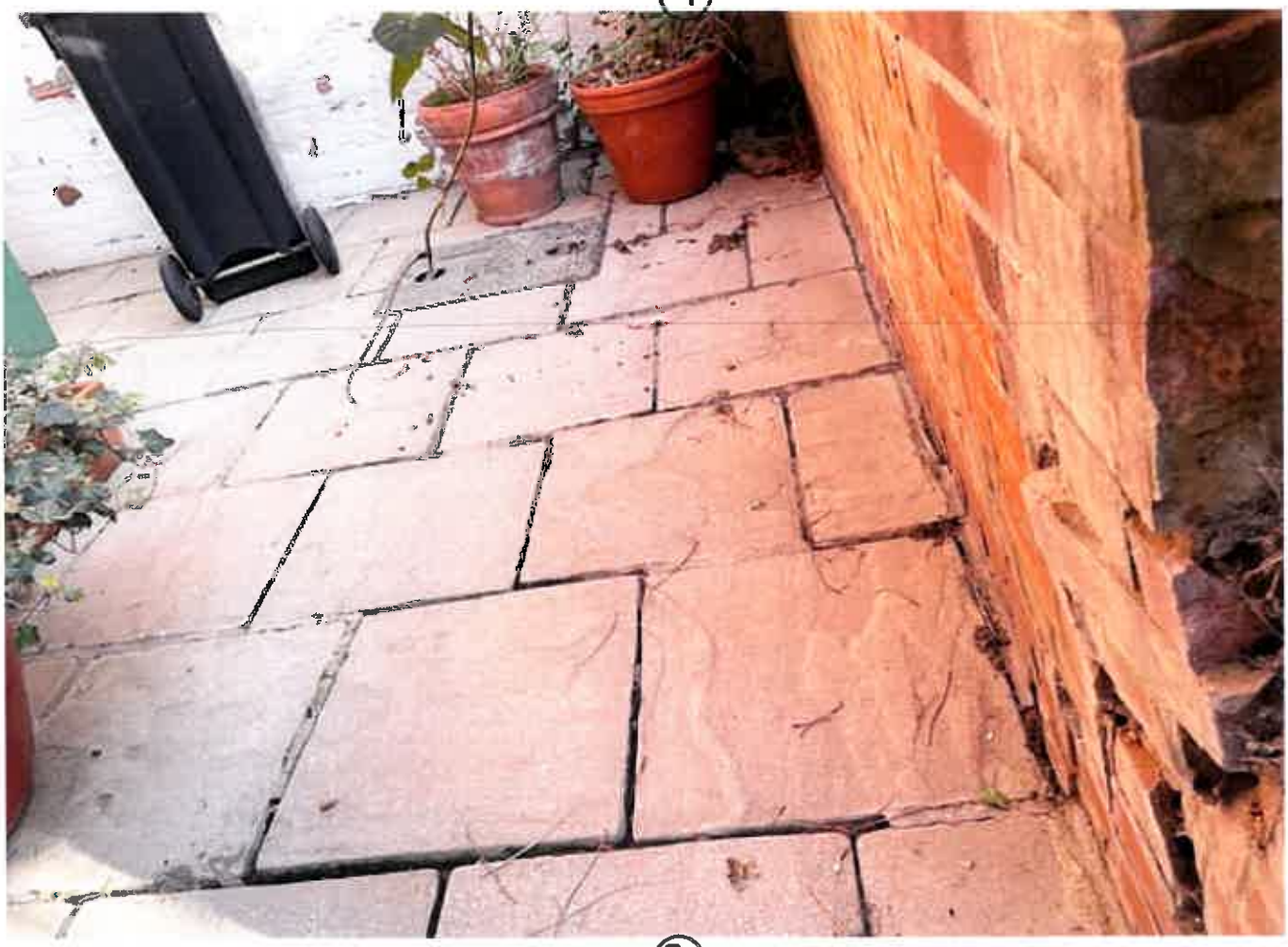

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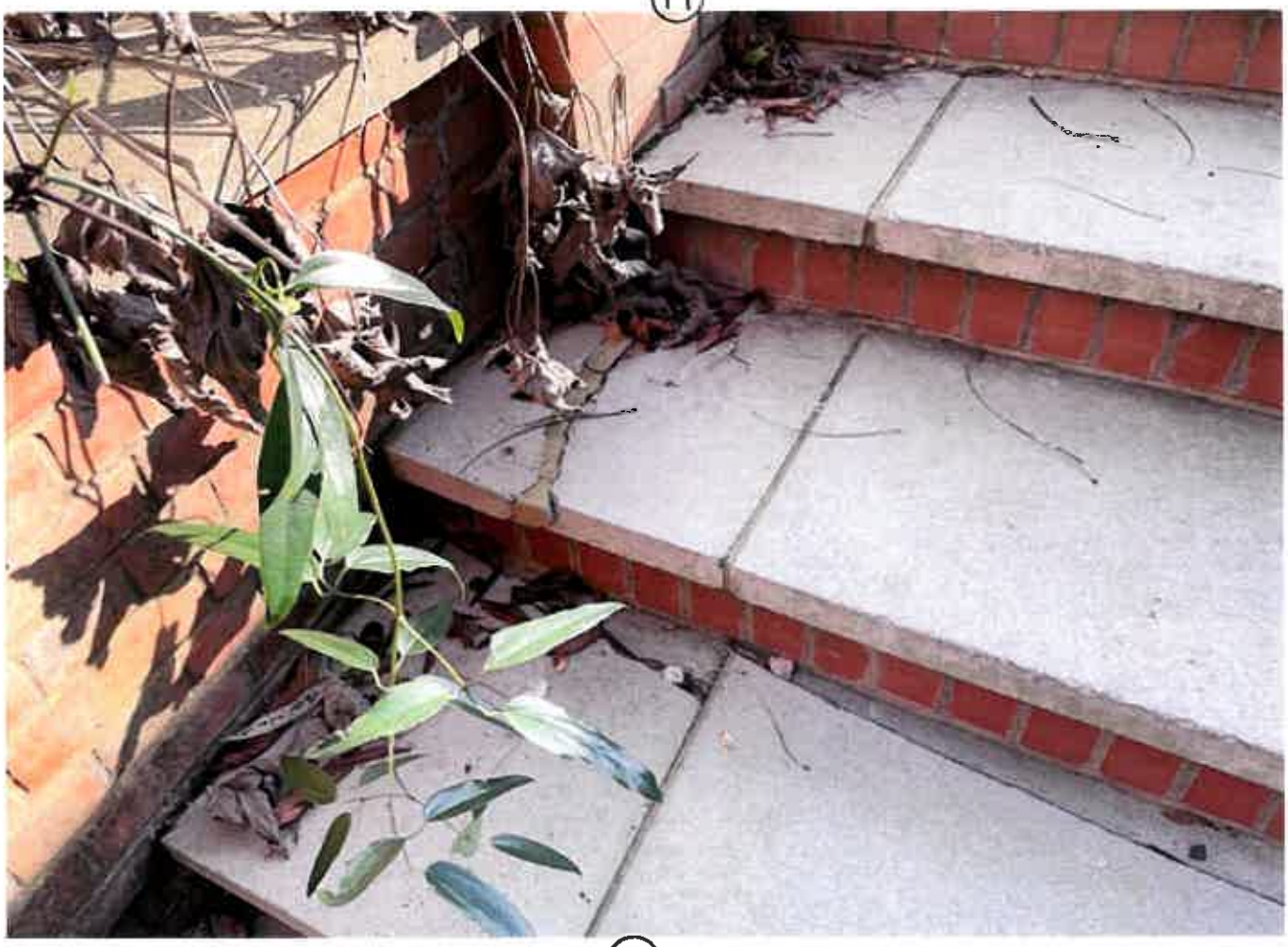

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