

CIA/JMC/7449-01

26th March 2014

Our ref:

Your ref:

Mr Frank Silver
Ebuild Homes Ltd
1 Purley Place
London N1 1QA

Dear Mr Silver,

6 and 7 Railey Mews, London NW5 2PA

Further to your recent instructions I have now carried out a walk-over structural inspection at the above properties and would like to confirm my comments as follows:

1. The existing pair of two storey mid-terraced properties, built circa 1900's, are constructed from 330mm thick solid brick perimeter walls to the front and rear elevations from ground to first floor level and 225mm thick solid brick perimeter walls from first floor to roof level, and have a timber framed pitched slate tiled roof over.

The properties are in an extremely dilapidated condition internally, as can be seen from the attached photographs.

From examination of the geological survey map of the area, the property was seen to be founded on the predominant London Clay.

This type of clay sub-strata is highly plastic and is very susceptible to volumetric change, resulting from variations in moisture content. Such variations are often the result of severe climatic conditions such as droughts, and/or the water demand from nearby vegetation.

In this instance there is an 8.0m high Sycamore growing in the rear garden of the adjacent property 56 Fortress Road, which is only some 1.5m from the rear wall of the property (Refer to attached photographs)

2. When viewed along their length both the front and rear elevations were seen to be bowing out away from the property, especially above first floor level.

A verticality check of the walls has shown that the front elevation has suffered in excess of 100mm outward horizontal movement and the rear elevation has suffered in excess of 80mm outward horizontal movement.

It is generally accepted that when a wall has moved in excess of $\frac{1}{3}$ of its thickness, and its centre of gravity is then outside of the plan of the wall itself, the wall is then regarded as potentially unstable.

In this instance the actual lateral movement of the wall from 1st floor to roof level is in excess of the allowable movement of 72mm.

As the lateral movement is likely to continue, even after strapping back to the main structure, consideration should be given to taking down the walls to first floor level and rebuilding them vertical.

3. The soil vent pipes and rain water pipes have been built in to the 330mm thick perimeter walls at ground floor level. The areas of wall adjacent to the pipes have now suffered movement due to the weakening affect of the built-in drain pipes. Also, the walls have suffered severe local degradation due to constant water penetration due to the embedded pipes.

Consideration will, therefore, need to be taken to demolishing the affected sections of the front and rear elevations and then rebuilding them to suit.

4. The rear elevation was seen to have suffered a degree of differential foundation movement, with the rear wall being cracked and the bed joints seen to be out of level.

It is likely that the water demand from the Sycamore tree that is growing close to the rear wall of the property has desiccated the underlying highly plastic clay bearing strata, which has resulted in subsidence of the foundations, resulting in damage to the walls over.

To prevent the movement from continuing consideration should be given to removing the tree completely.

In conclusion I would like to state that the movement and damage to the existing front and rear elevations is so severe and extensive that the walls are beyond reasonable repair. I would therefore recommend that the walls are completely demolished down to ground level and then rebuilt.

I understand that the properties are not listed but they are within a conservation area. The walls will therefore need to be rebuilt using reclaimed stock bricks incorporating as many of the original features as possible.

The front and rear walls to the nearby properties 9-11 Railey Mews have been previously taken down and rebuilt using perimeter cavity walls incorporating stock bricks to the outer skin. I would recommend that the same construction technique is now used for 6 and 7 Railey Mews.

I would assume that you will need to inform the Planners of this change to the construction of the properties, even though the final elevations will not be any different to those shown on the proposed planning drawings.

Indeed, with the front and rear walls being taken down and rebuilt rather than patch repaired the final look of the properties will actually be improved.

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

A handwritten signature in black ink, appearing to read 'Clive Adams', written over a horizontal line.

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