

6 February 2018

Mr A. Darwood
Flat 2
84 Albert Street
London
NW1 7NR

Dear Alastair,

Structural Assessment of external masonry wall at Flat 2, 84 Albert Street.

Blue Structural Engineering LLP was appointed by Mr Alastair Darwood, the owner of the above named property, to undertake a visual inspection of the party wall shared with No.86 (see figure 1) and to provide findings and recommendations.

The property is a two-story flat which encompasses the ground and lower ground to the rear of the four storey, mid-terraced, Georgian property. A desk study was undertaken using the British Geological maps, which confirmed the geology local to the property is Clay.

The property is currently undergoing refurbishment. The strip out works carried out by your contractor, have shown the property has been previously modified and the standard of these works would be considered to be quite poor.

The Visual inspection was undertaken by James Sharp on the 26th January 2018. The contractor undertaking the works was present, the client was not.

The construction of the wall is solid 215mm thick masonry. There is an existing opening located approximately 2m from the rear façade of the lower ground floor. The opening has been infilled at some point in the past. The brickwork infill panel has not been tied into the masonry either side.

There are horizontal stepping cracks to the wall panel. The first runs from the top right-hand corner of the original doorway down to floor level. The crack generally follows the mortar bed joints. The worst-case crack width is located at the head of the door and is approximately 15mm.

The second is located at the top left-hand corner of the door and continues to the movement joint approximately 1m to the left.

At both locations the crack widens towards the top of the wall which would suggest a rotation in wall. The brick coursing still lines through, indicating there has been no differential settlement on the wall.

There is a movement joint located to the left side of the doorway at the approximate position of the mezzanine level over.

The Brickwork forming the rear façade and abutting the party wall appears to be of newer construction. No tying between the two wall panels either via adequately toothed brickwork or wall starter system could be seen.

Additionally, the head of the wall is not restrained by the roof construction. The roof sits on a timber wall plate which the contractor advised previously sat on a timber liner wall built in front of the existing masonry wall

The wall panel is therefore unrestrained at its sides and at its head, the wall is acting as a cantilevering panel and is therefore not of an appropriate thickness given its current restraint conditions.

In the first instance we would strongly recommend repairs are undertaken to ensure that the wall does not become unstable during high winds, in storm conditions and secondly so that cracks do not reappear through the new plasterwork after a short time due to a lack of robustness.



Ties should be introduced to restrain the wall panel at its sides. Additionally, the infill panel where the doorway was, is to be tied to the adjacent masonry and that the cracks are to be stitched.

One method would be to rake out the mortar bed joints and install Helifix Helibars with resin. It is advised that these works are undertaken as per the manufacturer's specification and by an approved contractor.

Where we require the panel to be tied back to the perpendicular rear façade the Helibars should extend a minimum 500mm past the corner.

Furthermore, the roof should be tied back to the head of the wall to provide restraint. Installing mild steel restraint straps between the roof structure and wall would provide a positive tie.

Additionally, the existing lower ground floor construction shows signs of ground movement, heave/shrinkage. The corner directly adjacent to the party wall and rear façade is higher than in the rest of the room and cracking to the top face of the concrete.

The contractor advised that the rain water pipe in this location was damaged, there is also vegetation growing on the far side of the wall and mature trees are present in the neighbour's garden.

These factors could be contributing to the structural movement to the wall panel. We would advise that the vegetation is removed to prevent ingress into the masonry. The drainage of foul/rainwater is rectified as this will seek to mitigate the potential of ground movement due softening/weakening of the clay strata below.

Once the remedial works have been carried out visual monitoring of the wall should be undertaken to assess if the mature trees are affecting the wall. If movement is noted then a structural engineer should be consulted.

I hope that you find the above clearly explains the situation and proposed recommendations. Please get in touch if you would like to discuss any of the above.

Yours sincerely,

A handwritten signature in blue ink that reads "J Sharp". The signature is written in a cursive, slightly slanted style.

James Sharp BEng (hons)