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Our Ref: 17125

Stephen Scanlan & Azadeh Nassiri
1 Chamberlain Street
London
NW1 8XB

24th October 2018

Dear Mr Scanlan & Ms Nassiri,

1 CHAMBERLAIN STREET, LONDON NW1

Thank you for asking us to look at your staircase and to comment on its structural integrity. It has dropped significantly around the newels posts and you are concerned as to its stability. I confirm that I visited the house on the 20th September 2018 to have a look and my observations and comments are set out below. Note that they are based only on a visual inspection and relate only to those points raised. Directions are given as if standing on Chamberlain Street looking at the front of the house.

The part of the stair in question is the first to second floor flight, see photograph 1, though similar concerns but to a lesser degree have been raised about the flight from second to third floor levels. Even from the photograph it is clear that the first floor stair is dropping significantly around the central newel post; this was measured at about 50mm. The thickened skirting board along the party wall also suggests that the stair is pulling away from the wall, compare this for instance with the more "normal" skirting at the half landing below in the same photograph.

Investigations were limited to the lower flight of this section of stair and the lathe and plaster had been previously stripped to allow a closer inspection of the underside of the first flight of the first to second floor stair, that is, the flight from first floor level up to the winders against the rear wall – see photograph 2.

It was clear even from a precursory inspection that the stair structure is in some distress. There has been some 10mm of movement in the plane of the stair causing the nailed joints between the goings and the risers to open up; most of the goings at these joints had split, see photograph 3. Many of the mitred joints between the risers and the internal stringer had also opened up and a significant number of the blocks intended to fix the goings and risers together were missing. The stair has also pulled away from the party wall by at least 25mm causing the risers and goings to pull out of original stringer which was still apparently securely fixed to the wall, see photograph 4. Previous repairs between the carriage beams and the original risers, goings and stringer have also failed.

It is difficult at this point to be sure of the cause of the failure of the stair but the structural integrity of these types of stair relies very heavily on the support at the foot of the stair and then on the fixity between the goings, risers and stringer. In this respect it is interesting to note that the trimmer joist which supports the stair at first floor level has dropped quite noticeably towards the wall which separates the stair from the rear ground/first floor reception rooms and that a section of this wall has been removed at basement level.

Any loss of support at the foot of the stair would certainly cause the sort of vertical and horizontal movements we see here and also this type of damage because of the subsequent overloading of all the associated joints. It is my view, therefore, based on what I have seen to date, that the cause of the stair movement is probably associated with the removal of the basement wall. There are no obvious signs of significant continuing movement in the stair wall (though there is a minor hairline crack over the ground floor door) so the loss of support may actually have occurred during course of the works rather than after it. This is quite common in situations like these where contractors think stair walls are non-structural because the main floor joists span from front-to-back and so provide these walls with limited temporary support.

Unfortunately, given the degree of damage, it is difficult to see how the stair could be successfully repaired in situ. So many of the goings and risers would need to be removed and replaced that only the very slender carriage beams would remain. This would be very unstable structurally but it would also result in a significant loss of the original fabric. Even if the damage is less extensive in the upper section of flight (which we have not inspected), just the removal of the lower flight would be such a major disruption that the upper flight would probably not survive.

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Whilst it is always a shame to lose this type of original feature, given the extent of the damage, replacement with a new stair would seem to be the sensible option from a purely structural point of view.

I trust the above is clear. As always, please feel free to call if you have any queries.

Yours sincerely,



Duncan Mercer
MStructE CEng MSc DIC BSc

for and on behalf of Michael Chester & Partners LLP

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PHOTOGRAPH 1: first to second floor flight



PHOTOGRAPH 2: underside of flight, lathe & plaster removed



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PHOTOGRAPH 3: first to second floor flight



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PHOTOGRAPH 4: first to second floor flight

