

Clients Brief

We have been asked to assess whether a wall can be removed at ground floor level within the rear left hand corner of the property and comment on a distortion on a doorway at first floor level to the rear left hand bedroom.

Observation / Damage

Distortion

At first floor level the distortion on the doorway into the rear left hand bedroom, which we estimate is a dip of approximately 50mm over the length of the door, the wall is a heavy masonry wall and simply built off floor joists with no supporting wall underneath



The dip runs to the right - photo is not straight!

Minor cracking was also evident around the door head owing that the movement was on going.



A distortion is also showing on the floor in the rear bedroom which is dished against the wall.



There was no carpet in the rear left hand bedroom showing that the floor joists run from front to rear.

In the lounge area a distortion can be seen on the ceiling below the wall. Never noticed this myself - the unsupported wall above runs parallel to the wall the photo is facing midway between the wall and light fitting. The beam would therefore run from a wall to the right and to the bay window just visible to the left. Padstone in the wall is obvious - how to support the beam over the bay? Is there a beam spanning the bay already? Is it strong enough to take the additional weight?



The wall separating the dining room and lounge does not line up with the wall at first floor level. This is the wall facing us in the photo above

We therefore consider that this wall can be removed, however at first floor level there is a masonry wall separating the bathroom and the bedroom. Already mentioned the position of this - midway between the wall facing us in the photo above and the light fitting

The distortion on the doorframe, which dips downwards towards the rear, is due to the wall being simply built off the floor joists.

We would therefore advise that a beam is installed directly beneath this wall, having first jacked the wall back into position so as to level the doorframe and the floor.

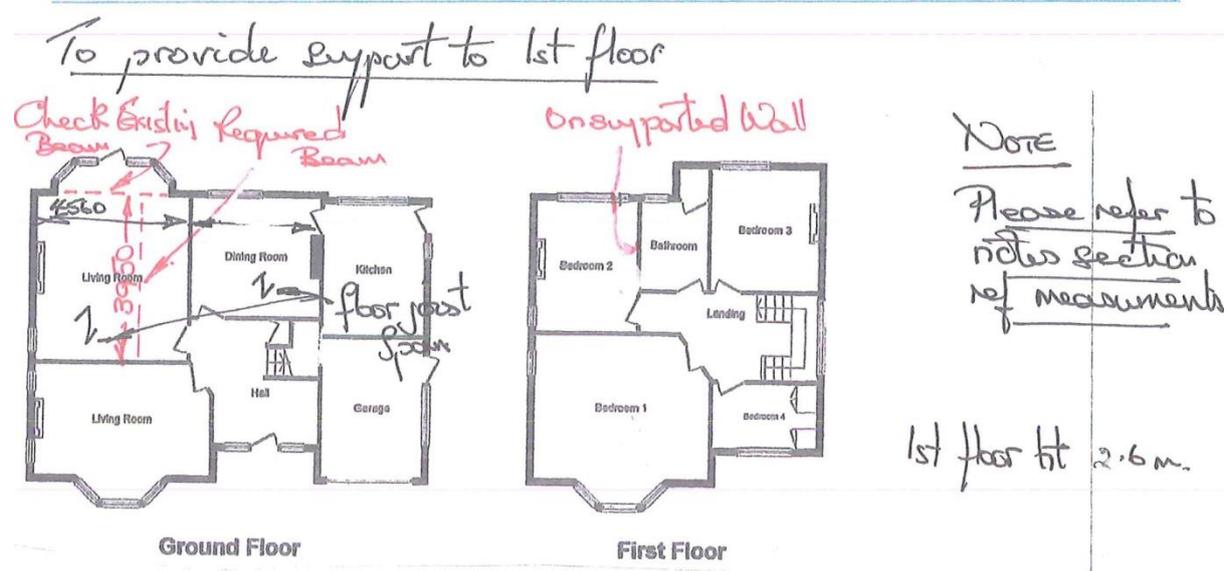
We attach the calculations for the beam as required.

Conclusion / Recommendations

The distortion on the doorframe at first floor is typical of the age of property with a heavy masonry wall built directly off floor joists which would have been common for that age of property.

Unfortunately this does not comply with current regulations and we would advise that a beam is installed within the ceiling of the lounge area below the wall.

The wall between the breakfast room and the kitchen does not support either the wall at first floor or floor joists, consequently it can be removed without further support at first floor as long as support is installed for the masonry wall separating the bathroom and bedroom as stated. **So wall can be removed as it supports nothing.... as long as the wall above receives the beam???**



Loads used.

dead - 100 mm wall - 2.3 kN/m^2 .
imposed - No loads.

For Design

F.O.S. $1.4(\text{dead}) + 1.6(\text{imposed})$
 Allowable deflection $d = \text{span} / 360$
 Cantilever Beam Un-restrained

Above drawing not to scale - from estate agents plan the kitchen and garage on ground floor are single storey. It is the bedroom 2/bathroom wall that is the offending wall in question. That lines up with the SE's red dashed beam location. What beam is likely to be in the bay window he annotates as "check existing beam"?