

# Brian Carr Design Ltd

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17/081/dbc/300617

30 June 2017

Sara Denton  
The Ridings  
Kennel Lane  
Doddington  
LN6 4RX

By email only

Dear Sara

## **Re Structural Survey of Existing Dwelling to Rear of 72 Bailgate, Lincoln**

Further to your recent instructions we confirm visiting the above property for inspection purposes on 27 June 2017. We now write to confirm our findings.

The purpose of this inspection was to advise upon the structural condition of the property, it being your intension to refurbish the same. We have not been advised of any specific matters of concern hence we have undertaken a cursory inspection upon all of the property.

At this stage our comments are based solely upon a single visual assessment of the property – we have not inspected areas that were inaccessible, have not undertaken any tests on the materials used in construction, undertaken any period of monitoring to confirm if any evidence of damage is progressive nor excavated any trial holes to reveal the nature of the foundations. Our comments are based solely upon the evidence available at the time of our visit and clearly we cannot comment upon matters which were hidden or inaccessible at that time. Also please note that matters relating to timber infestation/rot, asbestos, damp ingress and matters relating to fungal growth or mould are specifically beyond our brief and therefore not reported upon.

## **General**

The property in question comprises a detached building, single storey in height. The property comprises solid interlocking brickwork walls of 215mm thickness supporting a mono-pitch roof, sloping down from rear to front, clad in clay pantiles. The property is considered to be over 100 years of age. The property occupies a reasonably flat and level site, and there are several mature trees located within adjoining gardens within foundation-influencing distance of the property. There is no evidence of any significant internal structural alterations having been made to the original construction.

## **External Observations**

Please note all elevations are described as if standing in the adjacent garden looks at the main central access doorway.

A full inspection around the perimeter of the property was not possible. The left hand wall forms the boundary to the adjacent property and access for inspection was not available at the time of our visit. The rear elevation similarly follows to boundary line and is almost entirely masked by a more recently constructed garage block on the adjacent site. Where visible the majority of the wall at higher level is masked by creeper growth but the small area of exposed masonry to the right hand side appears sound, albeit the masonry pointing to the brick courses immediately below the ridge line appears poor.

The right hand elevation is completely masked by this same creeper growth albeit an inspection around the doorway to the extreme front of this wall could be made. The balance of the walling appears intact and reasonably true to line and level but the brickwork to the left hand side of this opening, ie the immediate return on the front elevation, has dropped by as much as 75mm. This has resulted in localised cracking above the door head, which itself is framed out by a rotting timber lintel.

The masonry generally on the front elevation is, to the left hand side, in a reasonable structural condition. Door and window heads are framed out with rotting timber lintels which has led to some minor distortions above and the mortar pointing is of poor quality. However the panel of masonry to the right hand side, between the central doorway and the right hand elevation, has clearly settled vertically, and also rotated outwards at its head. Vertical movement of as much as 75mm has occurred with lateral movement at the head of the wall of at least 50mm. Whilst this movement appears to be historic it is clearly very significant.

The roof structure is, to the right hand side completely covered in creeper growth which precludes a closer inspection. To the left, where the roof is visible, the alignment is generally satisfactory with no significant dipping along the roof slope or movement at eaves level. Whilst the projecting chimney stack appears vertical and stable the mortar pointing is poor and, as elsewhere, will require attention.

### **Internal Observations**

An inspection has been made throughout the interior of the dwelling, which comprises only two rooms, one to the left and one to the right.

Within the left hand room the overall alignment of the rear, left and front walls is satisfactory, with the walls generally well aligned both horizontally and vertically. There is evidence of minor cracking to the rear of the left hand wall but this is not considered to be structurally significant and is clearly of some age and appears non progressive. The right hand wall, forming the division between the two rooms, has however suffered several rotational movement and settlement to the front, resultant in gaps in the brickwork at the head of the rear internal door way of over 50mm. This vertical movement at the extreme front is compatible with that to the front left hand wall.

Within the right hand room the rear and rear parts of the right hand wall are well aligned horizontally and vertically. The front wall and the internal wall both however reflect the very significant movement recorded above.

Note all internal openings are framed out with timber lintels exhibiting varying degrees of infestation/rot.

A limited head and shoulders inspection of the roof void reveals a traditional construction of mid span purlins propped off the internal wall supporting common rafters at regular centres. Again no significant distortions were observed to the structure.

The floors comprise ground bearing pavements that will require replacement as part of any planned refurbishment. The floor within the right hand room slopes down to the front compatible with the movement to the front wall in this location.

### **Conclusions**

On the basis of our observations we are of the opinion that the property is generally in a sound and stable condition and suitable for retention. Significant instability has occurred to the front right hand wall however which will require redress. We therefore suggest the following matters require consideration as part of any planned refurbishment of this building:-

- 1) The front right hand wall and the internal cross wall require demolition and reconstruction of a suitably designed new foundation. Ground conditions in this part of Lincoln typically comprise historic fill to some depth and hence a well-

constructed raft foundation is considered the likely solution, subject to detailed investigation and design. The likely extent and detail is included as appendix B.

- 2) All timber lintels will require remove and replacement with galvanised steel ones to guarantee the long term stability of the masonry over the openings.
- 3) Walls all require varying degrees of repointing to the masonry, particularly to the high level brickwork on the rear wall.
- 4) It is strongly recommended, given the age of the property, that all damp proof courses and timbers be inspected by a suitably qualified specialist, if only for peace of mind. Any recommendations given should of course be adhered to.
- 5) Within the report several minor maintenance-related matters have been referred to. None of these are of any significance. Likewise the specification of same, including new ground floors etc is beyond the scope of this report.

On the basis of the above and subject to satisfactory reports on the timberwork and damp, we can therefore see no reason why this property is not suitable for refurbishment and occupation for residential use. It should however be appreciated that we cannot categorically state that future movement or damage will not occur should some other cause intervene.

We attach a series of photographs as a record of the condition of the property at the time of our visit.

Yours sincerely

A large black rectangular redaction box covering the signature of the sender.

D B Carr BSc (Hons) CEng MStructE MICE FConE

Encl

## **APPENDIX A**

### **PHOTOGRAPHS**



Main Front Elevation



Roof from front



Movement to Front Elevation Doorway



Front Left Wall



Right Hand Elevation



Movement to doorway in Right Hand Wall





Rear Elevation



Sloping Floor to Right Hand Room



Cracking to left wall, left hand room



Sloping internal wall in right hand room



Sloping internal wall in right hand room



Sloping internal wall in left hand room



Sloping door head in right hand room

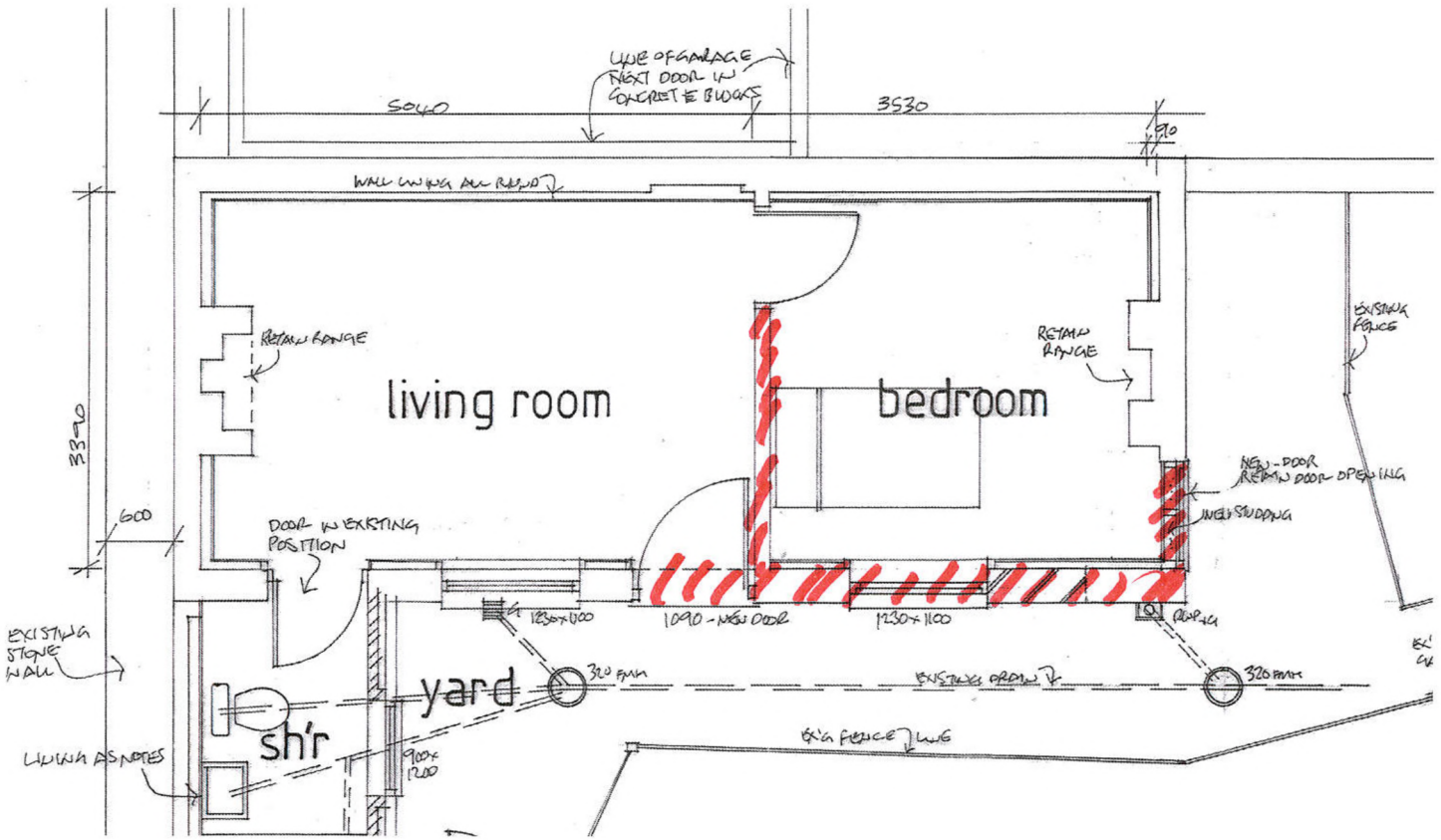


Minor timber damage in right hand room

## **APPENDIX B**

### **REPAIR SKETCHES**

# WALLS TO BE REPLACED



# TYPICAL FOUNDATION TO NEW WALLS

