

CALVERT BRAIN & FRAULO^{LTD}

STRUCTURAL INSPECTION

OF

DERELICT FARMHOUSE
HURN ROAD
HOLBEACH
PE12 8LT



JOB No. 177691

INSTRUCTED BY :
MR S. TAYLOR

PREPARED BY :
J.W. LUKER BEng (Hons)

CHECKED BY :
R.W. BRAIN BEng (Hons) CEng MIStructE
ICIOB MFPWS

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The Institution
of Structural
Engineers



CONSULTING STRUCTURAL & CIVIL ENGINEERS
3 PORTLAND STREET, KING'S LYNN, NORFOLK, PE30 1PB
TEL 01553 766220 FAX 01553 766033 WWW.C-B-F.CO.UK

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1. INTRODUCTION

- 1.1 Following instructions received from Mr S. Taylor on 24th February 2017 a visual Structural Inspection of Derelict Farmhouse, Hurn Road, Holbeach, PE12 8LT was carried out on Friday 24th February 2017.
- 1.2 The following report is based upon the findings of the above inspection to consider the condition of the property as it presently exists.
- 1.3 Our brief for this report was to carry out a visual structural inspection of the property.
- 1.4 This report only relates to those areas of the property noted in 1.3 above. It should not be taken as a full building survey and specifically excludes the following general items :
 - 1.4.1 The decorative condition of the property.
 - 1.4.2 The condition of roof, wall, floor and ceiling coverings.
 - 1.4.3 The condition of the property with regard to dampness, dry rot, timber infestation and the like.
 - 1.4.4 The condition of the services including electrical, plumbing and heating installations.
 - 1.4.5 The value of the property and other aspects such as legal searches, boundaries etc.
- 1.5 The report is based upon the parts of the property visible at the time of the inspection. We have not moved any items of furniture, fixtures or fittings in order to facilitate the inspection.
- 1.6 We have not inspected woodwork or other parts of the structure which were covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.
- 1.7 No long term investigations of the locality or services have been made. We have no direct knowledge of the history of the property.
- 1.8 This report has been prepared for the use of Mr S. Taylor. Its findings and liabilities are therefore non-transferable save with the express permission of Calvert Brain & Fraulo Limited.
- 1.9 For the purposes of this report, the front of the building will be taken as that elevation facing due south. In the following text the global orientation will be taken as if standing facing the front elevation of the property and the local orientation left and right on a particular wall will be taken as if standing directly in front of the elevation in question.
- 1.10 There are adjacent outbuildings to the western side of the building. These outbuildings do not form part of the farmhouse and therefore have not been inspected as part of this report. However it was noted during our inspection that the outbuildings are generally in an extremely poor state of repair.

2. BACKGROUND

- 2.1 The property is a detached two-storey house set in a wooded area at the end of a farm track just off Hurn Road. Historically the original front building appears to have been extended to form the rear wing, whilst more recently a flat roofed extension has been added.
- 2.2 The property is situated on a site surrounded by Leylandii Cypress trees, all within the zone of influence of the foundations. There is also a mature Leylandii Cypress within 2 metres of the west gable wall (see photos 1 and 2).



*Photo 1 – Front elevation with
Leylandii Cypress close to west gable*



Photo 2 – Rear elevation

- 2.3 The property has a pitched roof spanning from front to rear on the main section of the building, from side to side on the rear wing, with a two-storey flat roofed later addition to the rear of the property. The roof and rear wing are covered with concrete interlocking tiles, whilst the rear extension has a felt flat roof. The external walls are of brickwork masonry. The main section of the building has been rendered using a cement render with architectural detailing around doors and windows. The rear flat roofed extension is of more modern cavity wall construction and is not rendered.
- 2.4 There are two chimneys, the first is located on the west gable of the main roof, whilst the second is located on the north gable wall of the rear pitched roof extension.
- 2.5 The ground floors internally are a combination of both groundbearing concrete and suspended timber. Internal partitions are masonry construction and the first floor is of timber construction.
- 2.6 The Geological Map of Great Britain indicates the bearing stratum in this area to be Estuarine Alluvium Deposits of clay, silt and sand from the Quaternary period.
- 2.7 Sketch drawing 177691 / 01 attached as Appendix 1 shows the general ground floor plan. It should be noted that the first floor structure is in serious decay and has collapsed in a number of areas and therefore it was not deemed safe to access the first floor to undertake inspections of either the roof structure or first floor structures.
- 2.8 We understand from the present owner, the property has been unoccupied for the last 35 years, and has not undergone any maintenance for that period. The building has generally fallen into a considerable state of disrepair throughout.

3. EXTERNAL INSPECTION

- 3.1 A visual inspection of the external wall surfaces was carried out.
- 3.2 All external wall surfaces were checked at their corners, panels and buttresses using a 1200mm long spirit level, the leans in millimetres over the length of the level are noted on sketch drawing 177691 / 01.
- 3.3 External door and window cills were also checked for crossfalls where possible and the crossfalls in millimetres are also indicated on sketch drawing 177691 / 01.
- 3.4 Where possible lengths of brick coursing on two sides of the rear elevation were checked with the level and localised falls were noted. The remaining elevations are rendered and therefore masonry and coursing could not be checked.
- 3.5 These measurements indicate that most of the external walls have an outward lean. In particular the eastern gable is leaning to the east quite significantly and the front elevation also has a forward lean. The western gable of the front section also leans to the west. Levelling of the window cills on the front elevation confirms settlement at both gable walls. At the rear the northern gable is leaning away from the building and there are also significant leans on the two storey flat roofed sections of the property. All of these measurements indicate a general deterioration in the building fabric.

Front (South) Elevation

- 3.6 Extensive cracking and general weather damage was noted to the main chimney at the western end of the main roof. Also at the base of the same chimney cement fillets are missing and tiles damaged. Water ingress into the building has obviously occurred at this location. The chimney has vertical cracking on its eastern side.
- 3.7 The main roof pitch shows significant signs of excessive deflection, and the ridge line towards the western end of the roof has visibly dropped. There is also notable dishing within the main spans of the rafters. The guttering is full of detritus and moss growth and is obviously not functioning correctly. This may be contributing to water ingress and timber rot would be highly likely in these areas. The rainwater downpipes are missing to the end of the guttering at the east gable.
- 3.8 The front elevation has been covered entirely with cement render to form architectural details around doors and windows. The render is visibly cracked in numerous locations above and below openings, central to panels (see photo 3). As the elevation is south facing, this cracking is most likely due to thermal expansion / contraction of the cement render, with cracking occurring at masonry weak points between openings. Weather penetration has occurred in all these locations allowing water to get behind the render. A large section of the render has dropped away from the arch over the ground floor window to the right of the front door, exposing the brickwork arch behind. The bricks and lime mortar joints have also weathered significantly from between the bricks (see photo 4).



Photo 3 – Render cracking between windows. Masonry bearing onto timber window



Photo 4 – Render missing over front window and masonry bearing onto timber windows

- 3.9 Timber lintels likely behind masonry arches have probably failed as masonry appears to be bearing onto timber windows.
- 3.10 Historical diagonal cracking was noted above first floor window and below the ground floor window, at the western front corner, indicating movement of the masonry towards the corner, most likely slight foundation movement to the corner of the building caused by the close proximity of the Leylandii Cypress (see photos 5 and 6).



Photo 5 – Diagonal cracking above first floor window



Photo 6 – Previously repointed cracking below ground floor window

- 3.11 Considerable outward bowing of the front elevation wall has occurred at first floor level also indicated by the cracking above and around the windows. Significant lateral movement of the masonry within the vicinity of the window heads has occurred, likely to be due to lack of restraint provided by a deteriorated timber first floor structure (see photo 7).

Photo 7 – Lateral bowing out of masonry above ground floor windows



East Gable Elevation

- 3.12 The gable wall bows out considerably at its centre around first floor level.
- 3.13 Extensive vertical cracking runs full height up to eaves level in the centre of the wall. The cracks have been historically repointed indicating ongoing movement. There is also cracking at the south east corner, indicating some previous separation of the front wall from the gable wall, also historically repointed (see photos 8 and 9).



Photo 8 – Diagonal corner cracking, historically repointed



Photo 9 – Vertical cracking at corner junction between front panel and gable wall

- 3.14 Repointed diagonal cracking was noted at both eaves, indicating some historic relaxation and spread of the roof structure.
- 3.15 Vertical cracking is also noted at the junction between the original building and the much later rear brickwork extension, also repointed.
- 3.16 On the same elevation there is considerable frost damage to the brickwork of the more recent rear flat roofed extension, due primarily to water being allowed to run down masonry.

Rear Elevation

- 3.17 The main roof has a number of tiles damaged and missing. Water penetration is occurring in a number of locations.
- 3.18 The low level flat roof has collapsed and the flat roofed rafters have entirely rotten away, allowing full weather penetration into the building (see photo 10). The guttering is no longer working and has dropped off the building in a number of positions. At the top section of the rear extension, the outer leaf of the cavity wall has delaminated away from the inner leaf and has collapsed (see photo 11). The lintels over the windows have become rotten and are no longer functioning properly. The render has become dislodged and has dropped away from the building allowing further water to penetrate behind. We would expect the brickwork at lower level to also be highly deteriorated.



*Photo 10 – Part rear elevation,
collapsed timber roof and masonry
panel*



*Photo 11 – Collapsed masonry
section*

- 3.19 There are notable dips in the main roof pitch and the ridge to the rear wing roof, indicating likely deterioration of the roof timbers. The small chimney on the rear wing has a lean away from the building for the top section.
- 3.20 There is a small external boiler house to the rear of the property, the roof of which has completely failed and collapsed. It was also noted that the masonry walls are rotating away from the gable wall most likely due to inadequate foundations (see photo 12).



*Photo 12 – Rotational movement
visible between sections of masonry*

- 3.21 Considerable vertical cracking to the centre of the rear wing gable wall was visible, continuing up to approximately eaves level. A section of render was removed in the vicinity of this crack and it was noted that the existing brickwork behind was soft and friable, probably due to water and frost penetration.

- 3.22 A significant outward bow is also notable on the rear gable wall in the vicinity of the vertical cracking previously noted.
- 3.23 Tiles were missing around the base of the chimney on the rear elevation of the main roof together with an extensive area of render which has fallen away from the chimney masonry, allowing further water penetration behind and down between the chimney and the roof mortar fillets.
- 3.24 Extensive ivy and vegetation are growing up and through the roof at the rear of the property causing further damage.

West Elevation

- 3.25 The roof structure has noticeable sags in the ridge and a notable dip at the gable ends of the main span of the roof, indicating likely deterioration of the rafters and purlins causing excessive deflection. Tiles were missing at the intersection between the main front roof and the west pitch and extensive vegetation build up in the valley. Below this area obvious water penetration has occurred between the roof and the wall and some of the wall rendering is missing in this area as a result.
- 3.26 There is a large vertical crack propagating from the junction between the rear wing roof and the main roof continuing to the door head, indicating slight rotational movement towards the rear of the building. Cracking was noted over the door at ground floor where the lintels may have failed. Vertical cracking is also noted above the windows at first floor level where there appears to have been some vertical movement of both of the arches. Vertical and diagonal cracking was also noted to the right hand side of the west wall at the junction with the front wall. This would tend to indicate some lateral movement of the front wall away from the gable wall. This cracking has been historically repointed potentially indicates ongoing foundation movement.

4. INTERNAL INSPECTION

- 4.1 In the front reception room large vertical cracking is visible in the rear wall. The crack is approximately 5mm in width (see photo 13).



*Photo 13 – Vertical cracking
in the reception room*

- 4.2 The timber floor joists are visible in the hall area and have suffered significant rot and general damage. Areas of ground floor have fallen through to the ventilation void below the floor (see photos 14 and 15).



Photo 14 – Rotten collapsed timber floor in hall



Photo 15 – Collapsed floor in rear extension

- 4.3 In the lounge there are vertical cracks above the door and a full height vertical crack in the rear wall (see photo 16). There is a 5mm vertical crack in the corner junction between the front wall and the west gable wall, corresponding to vertical cracking externally between gable and front wall.



Photo 16 – Vertical cracking visible in lounge south west corner

- 4.4 The first floor structure in the hall is visibly rotten and has collapsed in a number of areas. The wall plates and joists are damp and have also suffered from extensive rot (see photos 17 and 18).



Photo 17 – Rotten timber first floor



Photo 18 – Rotten timber first floor to rear extension

- 4.5 The roof structure was not fully inspected, however it could be seen that the rear roof structure has completely rotted away and collapsed in a number of areas as has the timber first floor structure (see photos 19 and 20). It was deemed unsafe to walk around on the existing first floor structure and therefore the upper storey could not be safely investigated.



Photo 19 – Collapsed timber first floor

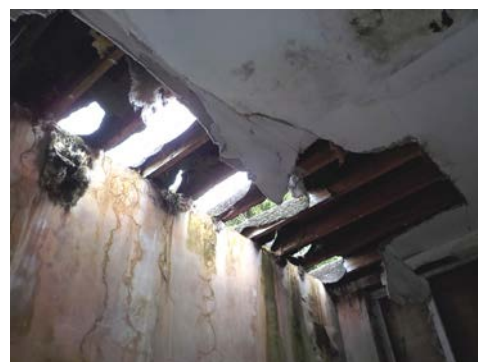


Photo 20 – Rotten collapsed timber flat roof to rear

5. CONCLUSIONS AND RECOMMENDATIONS

- 5.1 It is clear that this property has not been occupied, and over a number of years has fallen into a significant state of disrepair.
- 5.2 The levelling of the external walls and in particular the levelling of the window cills on the front elevation indicate that there has been some foundation movement, particularly to the original front section of the property. There is extensive cracking in the building due to the foundation movement as well as thermal expansion / contraction of cement render, which in turn has allowed water penetration into the original brickwork behind. The cement render is then preventing the lime mortar from breathing, contributing towards the deterioration of the masonry and further delamination of the render. Timber lintels are likely to be present behind the brickwork facing arches and are likely to be rotten.
- 5.3 The timber roofs have either collapsed or are sagging excessively and pushing laterally on the walls. Continued water penetration will ultimately result in collapse of the pitched roofs. Flat roofs have already collapsed. There is extensive evidence of water penetration internally.
- 5.4 The timber first floor structures are extensively rotten which prevented our inspection of the first floor areas and given the extent of the rot in the structural timbers there is a lack of restraint being provided to the external masonry walls which has resulted in the bowing of the walls as evidenced in our inspection notes. First floor structures could easily collapse in the short term.
- 5.5 The external cement render has fallen off the structure in a number of areas and given the extensive water penetration and cracking is likely to be delaminated over the majority of the external elevations. Due to water penetration the brickwork behind the render is likely to be soft and friable and probably unable to accept any coating such as might be required in a renovation project. This was confirmed in an area at the rear of the property where the cement render was removed and the brickwork inspected.
- 5.6 In summary, the roof needs to be removed, the first floor and ground floor need to be removed, lintels will need to be taken out, and the cement render to the entire building will need to be removed. Having undertaken these works there will be very little remaining salvageable masonry. Any remaining masonry will likely be damaged to such an extent that, in our opinion the only rational way forward with a building of this nature is full demolition and rebuilding.

J.W. LUKER BEng (Hons)

February 2017

APPENDIX 1

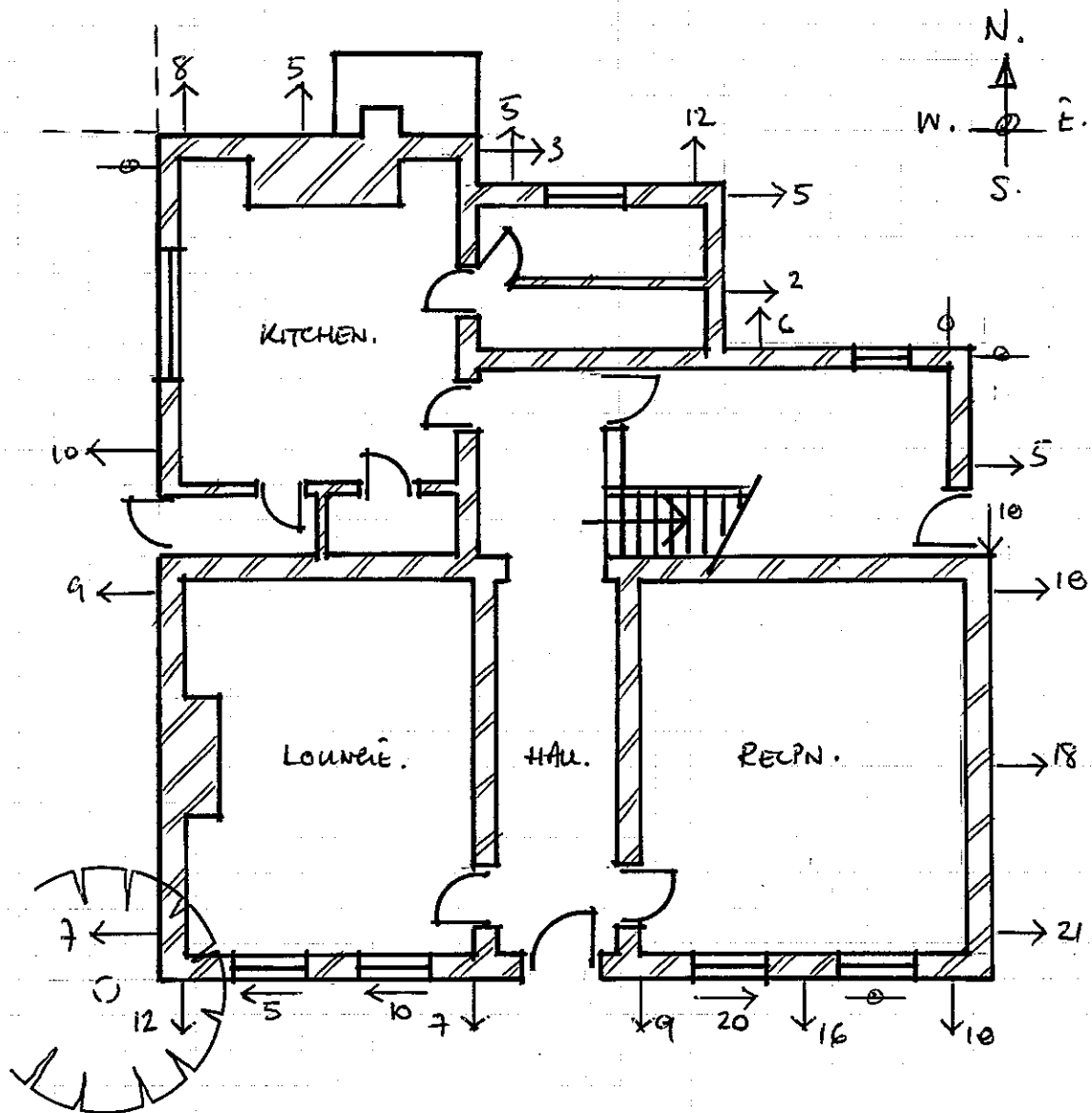
Drawing 177691 / 01

FARMHOUSE, HURN RD. HOLBECH.

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DATE _____

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