

**PRELIMINARY STRUCTURAL REPORT
UPON
REDUNDANT BARN
AT
MONTAGUE HOUSE
123 FLEET ROAD
FLEET HARGATE
HOLBEACH
PE12 8LD**

Mr & Mrs Phillips
Montague House
123 Fleet Road
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Ref: 40418

OCTOBER 2018

INTRODUCTION

We confirm having visited the property, as requested, on the 12th of October 2018, the purpose being to undertake a visual inspection only of the redundant barn, situated to the rear of the main house.

The purpose of this report is to comment upon structural items only and consider what measures need to be implemented to make the building safe and prevent further decay.

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LOCATION AND BRIEF DESCRIPTION OF PROPERTY

Situated on the North side of Fleet Road, Fleet Hargate, the barn is detached from the main house and stands approximately 1.0m beyond the rear wall.

The two storey barn is of traditional construction, being timber framed pitch roof with a pantile covering.

A timber floor is in place, all supported by loadbearing brick walls.

COMMENTS "AS SEEN"

When viewed externally a distinct bow was noted to the Western elevation, which also leaned outwards at eaves level – see photograph 1. Pattress plates are also present at first floor level.

To the corner of the South gable wall a large crack extends diagonally downwards from eaves level – see photograph 2.

It was not possible to fully inspect the Eastern elevation since scaffolding had recently been erected, to protect the brickwork from further collapse.

With the exception of the previously mentioned cracking to the South gable wall, the remainder of both gable walls were relatively sound and true with brickwork generally intact.

The ridge line is sagging considerably, with many tiles missing and loose – see photograph 3.

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Internally, the roof timbers are in a very poor condition with alarming amounts of deflection visible in purlins and rafters, together with split collars – see photographs 4 & 5.

Along the Eastern elevation, a large horizontal crack extends along the full length of the wall, with the wall leaning outwards – see photograph 6.

Horizontal displacement of the wall was also noted at the junction with the gable wall – see photograph 7.

Steel tie bars are present between both flank walls at first floor level.

Steel cables have also been introduced, which are wrapped around the wall plate and fixed to the timbers of the first floor. Unfortunately this cable was broken and frayed at the ends – see photograph 8.

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CONCLUSION

Although the barn has not benefitted from any maintenance for many years, the main structural problem is how the timber roof framing was constructed in the first instance.

With no effective tie at eaves level, to resist the horizontal load from the rafter, this load is transferred to the brickwork, which is unable to resist the load.

This has resulted in the outward lean along the Western elevation, and the horizontal fracture and failure of the Eastern elevation.

Over the years, attempts have been made to prevent the outward movement of the flank walls, which has clearly failed.

Nevertheless, the brick walls that have not been affected by outward movement are relatively sound, for a property of this type and age.

Robust solid 13" walls are present to first floor levels, with solid 9" walls above, and are relatively sound considering the movement at eaves level.

We therefore believe that there is no reason why this building cannot be suitably repaired.

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RECOMMENDATIONS

The following recommendations consider the requirement to address the immediate problems and are not intended to consider any overall renovations.

The condition of the timber roof framing is beyond repair and should be renewed throughout.

Measures must be taken to prevent horizontal loads being transmitted to the brickwork at eaves level. This could take the form of suitably sized purlins spanning between gable walls. We are of the opinion that steel beams would not be appropriate in this Listed Building. Consequently timber purlins or flitch beams should be provided.

The Eastern and Western elevations should be removed to first floor level, and rebuilt using existing bricks. It will be necessary to rebuild limited areas of the gable walls, however the gable walls can remain ensuring temporary shoring is introduced during renovation works. It is suggested that a roofing felt is incorporated whilst retiling the roof.

1.

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SUPPLEMENTARY REPORT

OBSERVATIONS

During the weekend of the 13th and 14th of October 2018, a significant storm passed through the area, with high winds and rain.

Unfortunately this caused the roof to collapse bring down parts of the gable walls and the first floor.

Photograph 9 shows the South gable wall partially removed and now unsafe.

Photograph 10 shows large areas of the North gable wall with brickwork removed.

Photograph 11 shows the Eastern wall now collapsed to first floor level, together with the whole roof no longer in place.

Photograph 12 shows additional cracking to the South gable wall

DISCUSSION

It is unfortunate that further damage has taken place to this building, however the recommendations of our preliminary report remain valid, all be it with additional works.

It will now be necessary to reduce both gable walls to eaves level prior to rebuilding.

2.

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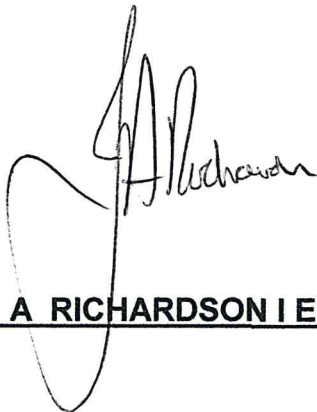
Furthermore localized rebuilding below first floor level will be required to both corners of the South cable wall and around windows to the Western elevation.

It will also now be necessary to incorporate a new timber first floor within the restoration scheme.

All new floor members and timber roof framing should be tied to new walls in accordance with Building Regulations.

It is now recommended that temporary shoring is introduced to gable walls to prevent further collapse.

For and on behalf of **SIDEBOTTOM RICHARDSON CHENG LTD**

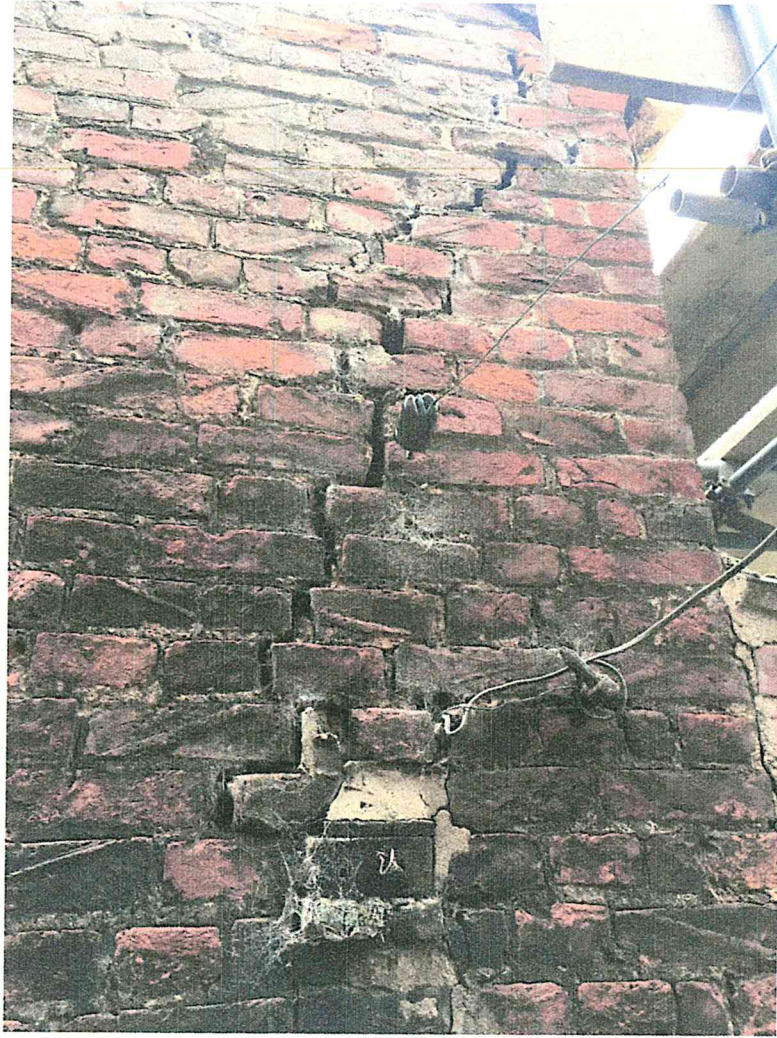
A handwritten signature in black ink, appearing to read 'J A Richardson', is written over a horizontal line.

J A RICHARDSON I Eng AMIStructE

22ND October 2018



PHOTOGRAPH 1



PHOTOGRAPH 2



PHOTOGRAPH 3



PHOTOGRAPH 4



PHOTOGRAPH 5



PHOTOGRAPH 6



PHOTOGRAPH 7



PHOTOGRAPH 8

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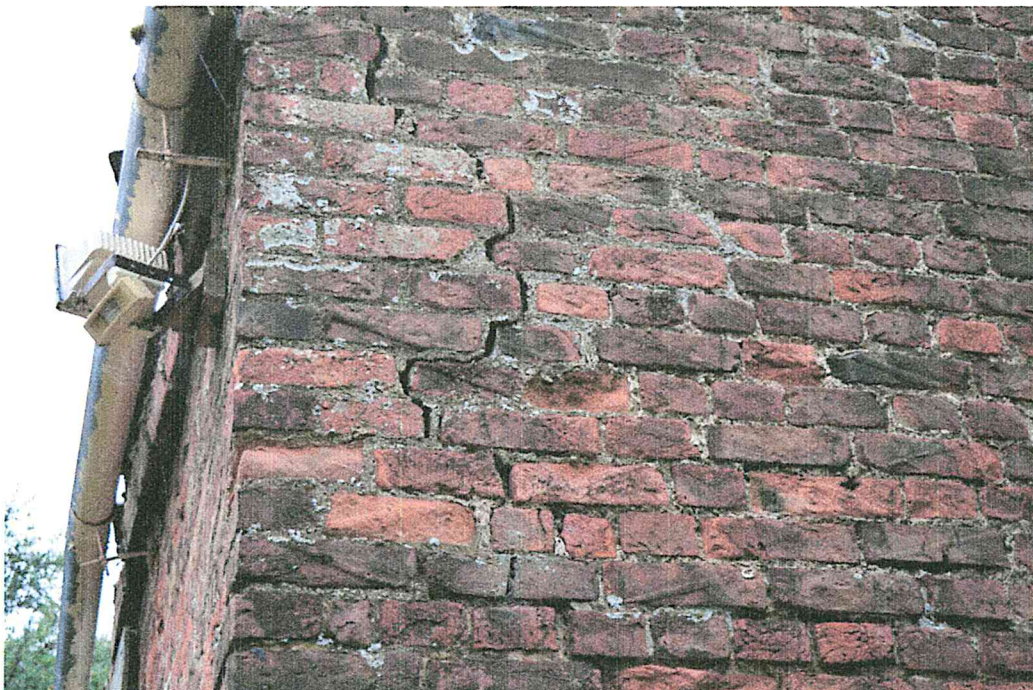
PHOTOGRAPH 9



PHOTOGRAPH 10



PHOTOGRAPH 11



PHOTOGRAPH 12