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Structural Engineers Inspection

Manor Farm House
Low Road
Besthorpe
Nottinghamshire. NG23 7BN



PCC Document Management	
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Author:	Peter Cole

This report has been prepared by PCC Consultants Ltd with all the reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions

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1 INTRODUCTION

1.1 Instructions

I have been instructed by Sam Reid on behalf of his clients, Mr and Mrs C McConnachie, to undertake a structural engineer's inspection of the outbuildings to the rear of the property known as Manor Farm House, Low Road, Besthorpe. The survey is to identify if the outbuildings are suitable for conversion to residential use to provide holiday accommodation. This report is commissioned to provide a detailed response to the planning officers report that has indicated the following:

For proposals involving the conversion of a heritage asset or rural building, a full external and internal structural survey is required to demonstrate that the building is capable of conversion without the need for substantial rebuilding works. This should be accompanied by annotated plans to show the extent of any repair or re-build works as appropriate. For further information please see page 35 of the Local Validation Checklist adopted April 2023...

We have received drawings from Nexus Design Solutions indicating the proposed alterations to the existing range of buildings. The drawings indicate that the existing outbuildings are to remain largely unaltered with the exception of the external staircase providing access to the first floor of the part of the building at first floor identified as storage space. This staircase is shown to be rebuilt to provide an easier stair rake and to reduce riser depth that currently is of a depth that makes access dangerous.

The architect's drawings show that an infill structure is to be built between the log store/storage building and the main dwelling.

1.2 Basis of Report

This report has been prepared from visual observations made during the course of a structural engineer's walkover survey which was carried out on 10th July 2023. At the time of the inspection no monitoring or testing of the materials of construction had been undertaken. Some internal finishing work had been undertaken to the two-storey storage and workshop unit. From my inspection it did not appear that any work involving repair or re-building had been undertaken due to structural deficiency. Instead, the works that had been undertaken appeared to be of a generally superficial nature to improve insulation and the need for level adjustment and provision of bathroom facilities.

1.3 Report Limitations

This report does not constitute a full structural survey and does not contain information normally dealt with in a surveyor's report. Specifically excluded from this report are the following aspects:

1. The decorative condition of the property.
2. The property location and valuation.
3. The condition of wall, floor and ceiling finishes, coverings and insulation.
4. The condition of services.
5. The condition of external drives, patios, slabs or the like.

This report is a non-destructive visual inspection only and as such I am not in a position to comment upon any latent defects or defects not readily identifiable from a walk over inspection of the building. I have not inspected any inaccessible voids nor carried out an inspection of drains or the like.

1.4 General Description



The two-storey outbuilding is constructed in brickwork with a pantile covered pitched roof. It is formed in masonry and is constructed with a suspended timber first floor. Historic maps indicate that the building was present in 1883 and may well be some years older than this. It is apparent that the building has been in use as a workshop and store and has been maintained in good condition.

Adjacent to the two-storey outbuilding there is a single storey store and workshop formed with a pitched pantile roof and a dado wall with glazing above the dado wall. This section of the building is formed with raised ties and purlins with a single tie at eaves level. The structure has been maintained in good condition with no obvious indication of structural defect or significant erosion of the masonry. The age of this section of the building may be later than the two-storey outbuilding but is also at least 140 years old.





The section of the building that is used as a log store and general storage area is also shown on the historic maps of 1883. Similarly formed with a pitched pantile roof this roof is of hipped form. The walls are of brickwork, and it is apparent that the walls are in good condition with no obvious indication of major erosion or

deterioration. It is apparent that this section of the building has been maintained in good condition.

2 Structural Observations

2.1 External Walls.

The brickwork forming the external envelope of all of the outbuildings is in excellent condition for a building of this age. There is no evidence of any significant erosion or deterioration. Furthermore, the outbuildings do not show any signs of excessive settlement or out of plane movement. There is no requirement for any repair due to structural deterioration. The masonry has weathered well and there is no requirement for repointing for aesthetic reasons.

2.2 First Floor Construction.

The first floor within the two-storey outbuilding appears to be robust and has proved to be so since the building was constructed. The floor is constructed with downstand beams spanning between the front and rear walls and these demonstrate some distortion, possibly associated with creep deflection. This floor would have been used for storage, loading that is more onerous than normal domestic loading, and the floor is, therefore, not in need of any strengthening or repair.

2.3 Roof Construction

The roof structure although some refurbishment of the roof appears to have been undertaken. The refurbishment works appear to have been undertaken to provide a layer of insulation and plasterboard ceiling finish.



The form of the construction of the roof forming the two-storey section of the building would appear to be in the form of a rafter and purlin roof with ties beneath the purlin line. and at eaves level forming a triangulated structural form. External observations indicate a slight

dip in the line of the ridge and some indication of roof spread with slight convex curvature of the upper part of the wall construction. This form of distortion is not unusual on older structures and represents creep deflection of the timber elements forming the roof structure. The curvature will



not affect the structural performance of the roof. No remedial work is considered necessary.



The workshop roof is formed with both eaves and purlin ties. The timber eaves beam appears to have performed well and the roof structure appears to be robust. The ridge line appears to be straight and true and there is no clear indication of convex distortion at eaves level. No remedial work is, therefore, required.

The roofs forming the single storey log and general store are of simple rafter and ridge beam form with hipped ends. I have no adverse comments on this roof construction but would suggest, with all other roofs of heritage buildings, that all timbers are checked during the refurbishment process for signs of rot and infestation, with appropriate remedial action.

3 GENERAL COMMENTS, RECOMMENDATIONS & CONCLUSIONS

3.1 General Comments and Recommendations

The outbuildings are in good structural condition and are suitable for development to form appropriated residential accommodation with no obvious requirement for significant repair work. With all refurbishments it will be necessary to undertake routine maintenance repairs such as localised areas of repointing and timber preservation. Such repairs are typical of the normal maintenance procedures to be undertaken on any building of this age.

3.2 Conclusions

It should be appreciated that this report has been prepared from a single visual inspection of the property and that I have not at this stage undertaken any monitoring, long term investigations or testing of the materials of construction. However, these outbuildings are considered suitable for conversion to residential use.

**P J Cole BSc CEng FStructE MICE
PCC Consultants Ltd
Chartered Structural Engineers**



Signed: _____
On behalf of PCC Consultants Ltd

18 September 2023
Date: _____

4 APPENDICES

4.1 APPENDIX 1 – TERMS & CONDITIONS

Structural Engineer's Survey and Report

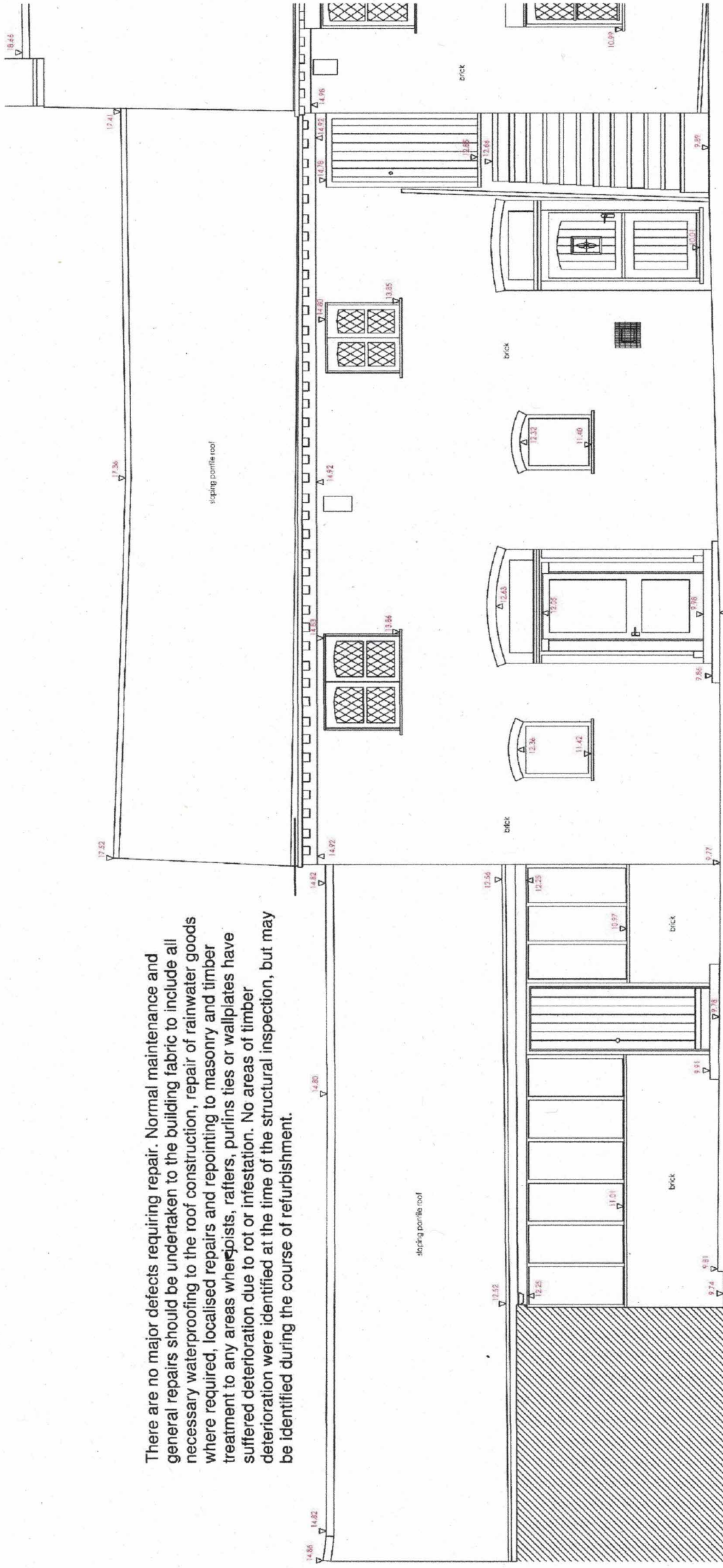
1. The structural engineer shall mean the director or employee of PCC Consultants Ltd who undertakes the inspection of the property.
2. The property shall mean that building that is to be inspected and shall include all external walls retaining structures and solidly constructed outbuildings. It will not include timber sheds, substantial ranges of derelict barns or the like, swimming pools, ornamental ponds, paths, drives or patios.
3. The report is intended for the sole use of the client mentioned in the introductory section of the report, their mortgage company and their insurance company. The report must not be reproduced or transferred to any third party without the written consent of PCC Consultants Ltd. PCC Consultants Ltd may agree that the report may be re-issued to a third party within six months of the date of the original inspection subject to an administrative fee. Beyond six months, a re-inspection of the property will be required which will attract a full inspection fee.
4. We reserve the right to refuse to issue copies of our report to third parties, other than those named in paragraph 3 above. We reserve the right to vary the conclusions should further information be revealed or become available at some future date.
5. The scope of the report will be defined in Section 1. The report will not cover the condition of the DPC, dampness and condensation or the condition of the timber elements of the property with regard to rot or infestation. The report does not cover those aspects covered in a full survey and excludes the condition of wall floor and ceiling finishes, window and door frames, decorations and building services including gas, water, electrical and drainage services.
6. A structural engineer's inspection and report is usually required because a general surveyor or property purchaser has identified structural movement, fracturing or other defect which has caused concern. The inspection will focus on the building structure only and will include an external and internal inspection of roof voids (where adequate and safe access is available), the load-bearing walls, and floors. The inspection will be restricted to visible parts of the structure and any heavy items

of furniture and carpets, or other fixtures and fittings will not be moved or removed.

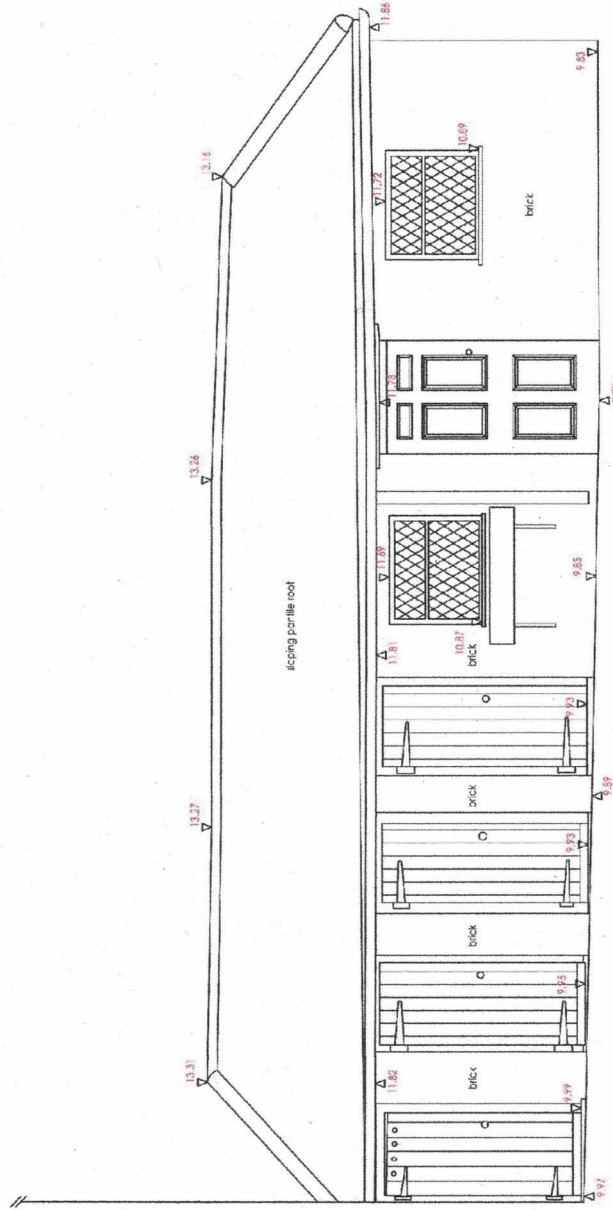
7. The structural engineer will not remove plant growth from external walls and will advise the client where plant growth restricts the inspection.
8. During the process of undertaking repairs or alterations, or as a result of more extensive investigation, further defects may be encountered that could not have been identified by a non-intrusive investigation. We reserve the right to alter the conclusions of this report in the light of such discovery.
9. Should we observe or become aware of any significant defect that falls outside the scope of our report, we are required, by the Institution of Structural Engineers Code of Conduct, to comment on the defect. If we do identify such defect, this does not imply any requirement upon us to evaluate the financial costs or implications of such observations and will be included in the report with a note to indicate that the defect “is not included within the scope of our report”. It is then the responsibility of the instructing client to make any further investigations that are required to evaluate the costs of any further surveys, investigation or repairs that may be required. This requirement does not imply that the scope of our report extends beyond the scope stated in section 1 of this report or the terms and conditions set out above.

4.2 APPENDIX 2- ANNOTATED DRAWING


There are no major defects requiring repair. Normal maintenance and general repairs should be undertaken to the building fabric to include all necessary waterproofing to the roof construction, repair of rainwater goods where required, localised repairs and repointing to masonry and timber treatment to any areas where joists, rafters, purlins ties or wallplates have suffered deterioration due to rot or infestation. No areas of timber deterioration were identified at the time of the structural inspection, but may be identified during the course of refurbishment.



SOUTH ELEVATION (from inside courtyard)



NORTH ELEVATION (from inside courtyard)

REV:	DETAILS:	DATE:	BY:	CHD:	DRAWING TITLE:
					ANNOTATED DRAWING TO INDICATE REPAIRS.
 <p>PCC Consultants The Annexe, Holly House, 11 Meadow Lane, South Hylkeham, Lincoln, LN6 9PF. E: info@pccconsult.co.uk www.pccconsult.co.uk T: 01522 695540</p>					STATUS:
PROJECT DETAILS:					PAPER SIZE:
REFURBISHMENT OF OUT-BUILDINGS, MANOR FARM HOUSE, RESTHORPE.					A3
					CHECKED:
					REVISION:
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					DATE:
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					NTS
					DRAWING NUMBER:
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