

REPORT on VISUAL STRUCTURAL INSPECTION

NORTH BARN

AT

MANOR FARM

PILTOWN

WEST PENNARD

Beveridge

Chartered Structural Engineers

8 Leigh Road
Street
Somerset
BA16 0HA

Tel 01458 440018
info@beveridgecse.co.uk
www.beveridgecse.co.uk

CLIENT Mrs Charis Selwood

REF 22-407-RE-02



Tom Holley MEng CEng MIStructE

29 September, 2022

Contents

1.0 Introduction

2.0 Scope of investigation

3.0 Brief description of property

4.0 Findings of inspection

5.0 Structural Analysis

6.0 Conclusion and recommendations

Appendix A – Classification of damage

1.0 Introduction

- 1.1 We are instructed by Mrs Charis Selwood to visit Manor Farm and carry out a visual structural inspection.
- 1.2 This report has been prepared solely for the benefit of the above-named client. No liability is accepted to any third party.
- 1.3 A written report is to be provided giving the structural condition of the barn together with recommendations for structural remedial measures that may be required to provide for conversion to habitable accommodation.

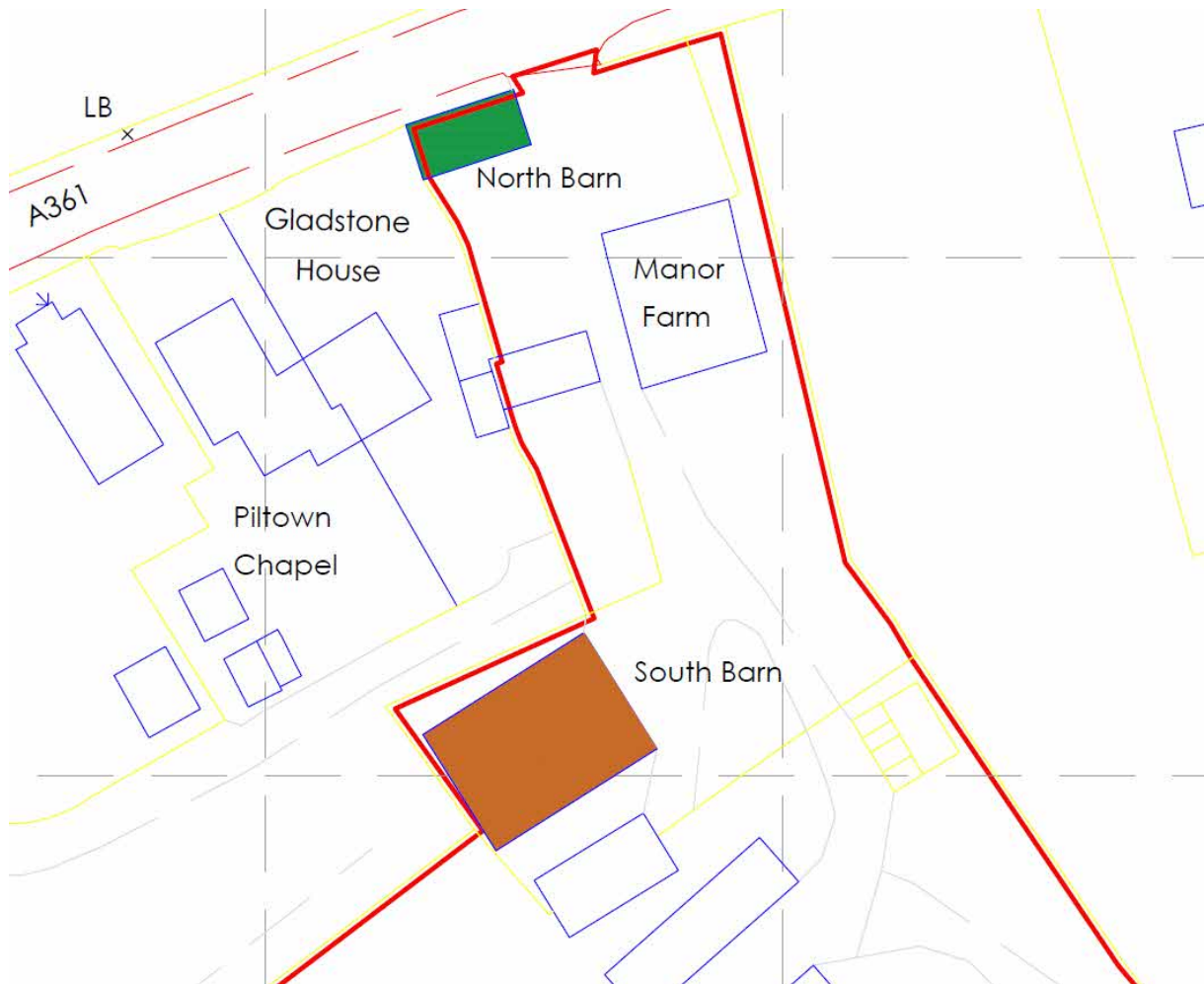


Figure 1 – Site plan

2.0 Scope of investigation

- 2.1 During our visit a condition survey was carried out and photographs taken. This report is based on notes taken from this visit, without benefit of monitoring or previous knowledge of the building.
- 2.2 All external observations were made from ground level unless noted otherwise.
- 2.3 The structure was generally accessible. Parts of the building that were not accessible were not inspected and do not form part of this report. I consider this to be a fair representation of the building.
- 2.4 This inspection relates to the North Barn (highlighted in green) on figure 1. The South Barn (highlighted in orange) is covered in a separate report. Other parts of the property were not inspected and have not been reported on.
- 2.5 Dimensions, where given in the report, are approximate and taken using a tape measure. Where appropriate I have rounded figures up or down to be conservative in my assessments.
- 2.6 Underground drains, if present, were not examined.



Figure 2 - View from South

3.0 Brief description of barn

- 3.1 The barn is a single storey building.
- 3.2 The roof comprises corrugated sheets to the front (north) and clay tiles to the rear (south), supported by timber battens, common rafters, purlins and trusses.
- 3.3 The walls are natural, lias stone north east and west. To the south, the apparently original stone pillars have been in-filled with concrete block panels. The eastern-most panel has been left open.
- 3.4 The floor comprises a concrete slab with a concrete raised platform.
- 3.5 There are no internal walls.



Figure 3 – Internal view looking west

4.0 Findings of inspection

- 4.1 The structural fabric of the building i.e. stone and block appeared to be in good condition generally.
- 4.2 There are no visible significant (category 4 to 5) cracks to walls, suggesting no significant foundation or ground movement has occurred.
- 4.3 There is a moderate (Category 3) vertical crack to the stonework in the NW corner.
- 4.4 The floor slabs are in good condition with no sign of significant movement.
- 4.5 The building appears to have been well ventilated and generally the visible timber appeared to be in good condition. There are signs of water ingress and associated wet rot to some of the roof timbers.
- 4.6 The roof cladding is largely un-distorted, suggesting that excessive deflection of the timbers or steel has not occurred. However, some of the roof finishes are missing, most likely caused by to wind-uplift due to the dominant opening to the south elevation.



Figure 4 – View from NE

5.0 Structural Analysis

- 5.1 A qualitative structural analysis of the superstructure has been carried out.
- 5.2 Under the loads associated with a conversion and on the assumption that external finishes are lightweight e.g. insulated cladding panels, the structure comprises all the primary and secondary elements required to adequately transfer vertical and lateral loads to ground.
- 5.3 Repairs could be carried out to the roof structure to allow for a fully tiled roof to be installed, should this be preferable.
- 5.4 Longitudinal and lateral stability of the building is gained via diaphragm action of the walls, as is typical in this form of construction.
- 5.5 The concrete floor slab can be reasonably assumed to be adequate to support the loads associated with new internal load-bearing and non-load-bearing timber frame walls, given its prior use for storing heavier agricultural materials and machinery.
- 5.6 The formation of the wall and post foundations is likely to be relatively shallow and therefore any reduced dig should be carefully considered to avoid undermining them.
- 5.7 Verification of the steel timber, grades and connections will be required to provide calculations for building regulations purposes, but the assumptions made are reasonably conservative and thus appropriate for this stage.

6.0 Conclusions and recommendations

- 6.1 The barn appears to be in a suitable condition to be converted into habitable accommodation.
- 6.2 The analysis carried out shows that the existing primary structure is adequate to support the loads resulting from the external (wall and roof) works associated with the conversion without significant or substantial improvement or repair.
- 6.3 Load-bearing timber frame partition walls can be built on to a new floor slab, to support any additional load from new ceilings, services and insulation.
- 6.4 Local repairs/reconstruction of any damaged areas can be easily carried out during the conversion works, without compromising the existing structure.

Appendix A – classification of damage

It is common practice to categorise the structural significance of cracking damage in accordance with the classification given in Table 1 of Digest 251 produced by the Building Research Establishment.

Classification	Description	Crack Width
Category 0	Negligible	<0.1mm
Category 1	Very Slight	0.1<2mm
Category 2	Slight	2>5mm
Category 3	Moderate	5>15mm
Category 4	Severe	15>25mm
Category 5	Very Severe	>25mm

Extract from Table 1. BRE Digest 251

Classification of damage based on crack widths