

REPORT on VISUAL STRUCTURAL INSPECTION

SOUTH BARN

AT

MANOR FARM

PILTOWN

WEST PENNARD

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CLIENT Mrs Charis Selwood

REF 22-407-RE-01



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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.

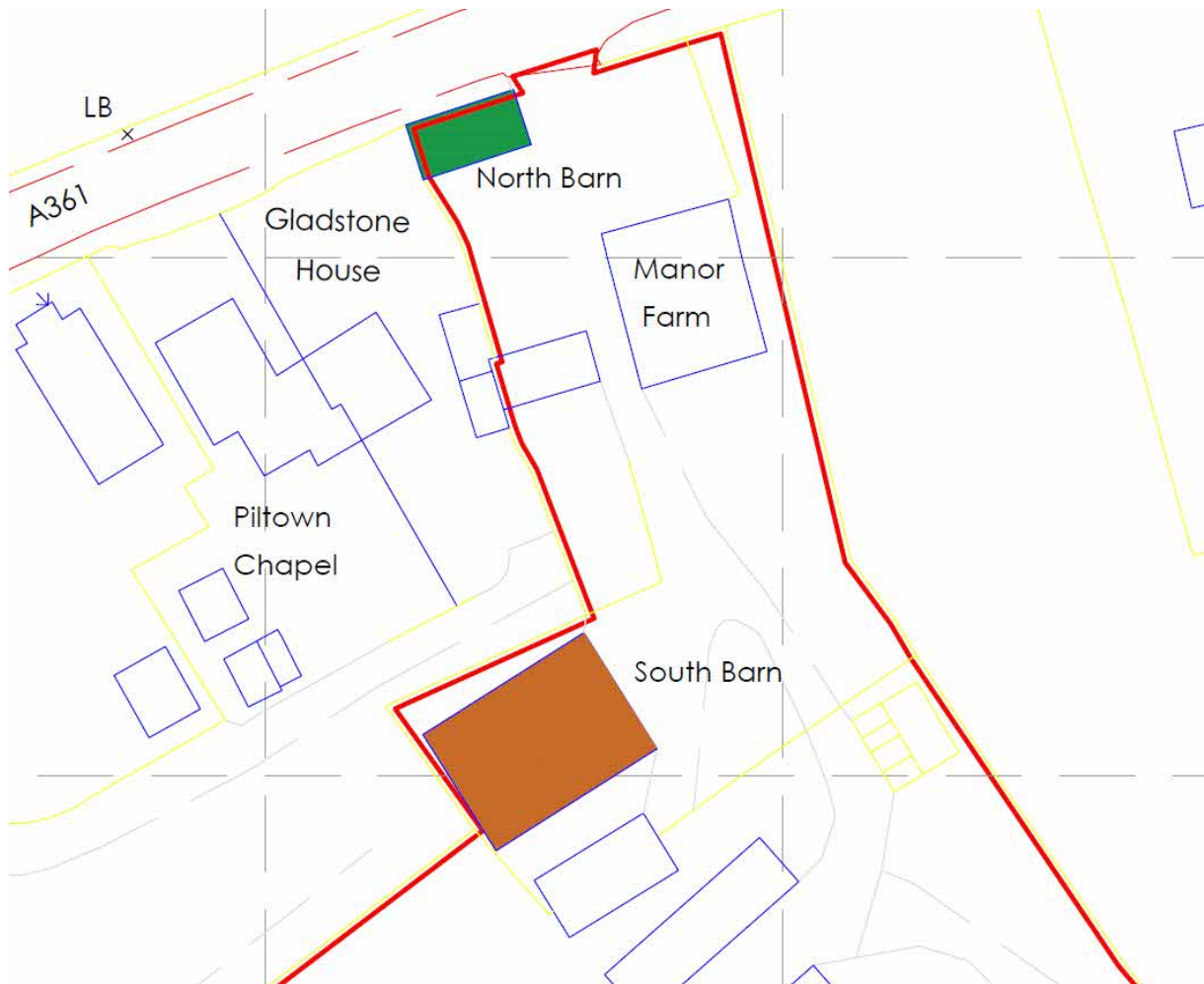


Figure 1 – Site plan

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 South Barn (highlighted in orange) on figure 1. The North Barn (highlighted in green) 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 East towards the front of the barn

3.0 Brief description of barn

- 3.1 The barn is a single storey steel portal frame building with a steel lean-to section to the north.
- 3.2 The roof comprises corrugated sheets (possibly asbestos) supported by timber purlins which span between the steel frames.
- 3.3 The walls are built up in concrete block to approximately 1m below eave height and in-filled with vertical timber cladding thereafter. The lean-to is full height masonry; the eave being lower than that of the main portal.
- 3.4 The floor comprises a concrete slab, laid to a fall.
- 3.5 There are no structural internal walls.
- 3.6 There is a mezzanine floor and lean-to to the rear (west) that are not included within the conclusions of this report. It is deemed inadequate for re-use and should be removed.



Figure 3 – View from the SW

4.0 Findings of inspection

- 4.1 The structural fabric of the building i.e. timber, metal, masonry and concrete appeared to be in good condition generally.
- 4.2 There are no visible significant (category 3 to 5) cracks to walls, suggesting no significant foundation or ground movement has occurred.
- 4.3 The floor slabs are in good condition with no sign of significant movement.
- 4.4 The building appears to have been well ventilated and internally the visible timber appeared to be in good condition with no signs of significant rot or distortion.
- 4.5 The roof cladding is largely un-distorted, suggesting that excessive deflection of the timbers or steel has not occurred.
- 4.6 There are no obvious signs of corrosion to the frame or its connections.



Figure 4 - Internal view of main portal

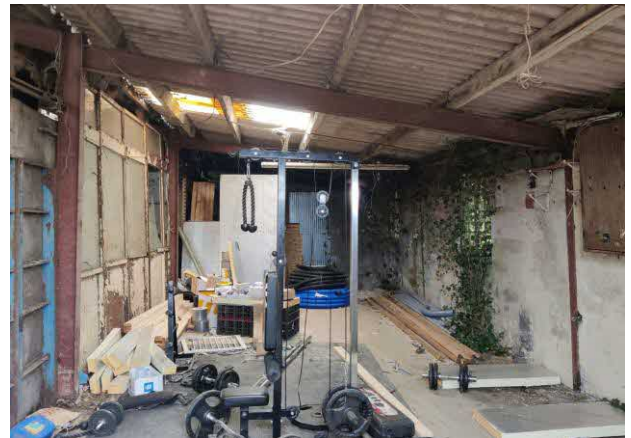


Figure 5 - Internal view of lean-to

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 It should be noted that these loads would not allow for a traditional tiled roof to be installed.
- 5.4 Longitudinal and lateral stability of the building is gained via diaphragm action of the roof sheeting, wall sheeting and masonry 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. However, it will be possible to install a new floor system, if required, without undermining any of the existing foundations as there is ample headroom throughout.
- 5.7 Verification of the steel sizes, 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.



Figure 6 – Internal view from the East

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