
STAMFORD

CHARTERED ARCHITECTS | CHARTERED SURVEYORS
PROJECT MANAGEMENT

STRUCTURAL APPRAISAL

BARN

at

**South Drive North
Spalding
Lincolnshire
PE11 3ED**



View from the road, looking north-west

1.0 Introduction

- 1.1 This report is prepared, in support of Planning Application H16-0040-21, by Ross Thain, a Fellow of the Royal Institution of Chartered Surveyors Building Surveyors division, who has extensive experience of this type of conversion and the structures involved.
- 1.2 An inspection was carried out on 27th January with the weather fair and cold.
- 1.3 An elemental approach is taken to the report so that a proper assessment can be made of the different parts of the structure, that make up the entity as a whole.

2.0 Floor Structure

- 2.1 Part of the building has a concrete floor which, although it is highly unlikely to have a damp proof membrane, will be sufficient for domestic loading. It is likely to be a minimum of 8" thick, of coarse agricultural quality, yet with an expansion joint running on an east-west axis which will ensure its structural longevity. It would be quite capable to cover this with a damp proof membrane, insulation and a domestic floor covering, so it is adequate for residential use.
- 2.2 The open covered section of the barn has an earth structure which will require removal and replacement with a more appropriate concrete sub-base.



The open section will require a new floor

3.0 External Walls

- 3.1 The walls are constructed in 225mm solid brick masonry, with intermediate supports of 300mm for additional structural purposes. The walls to the enclosed section are in good condition generally with the fletton brickwork and cement mortar in sound condition. There is a more recent engineering brick pier, in between the two roller shutters, which

provides lateral support for the steelwork sitting above and this will require some minor modification at its head where it abuts the roof, as below:



- 3.2 The open section is of similar fletton brickwork and, although there is a hairline crack running down the right hand side to one of the piers, this could readily be repaired with some straps.



- 3.3 Externally, the brickwork is in reasonable condition although some bricks, particularly at low level on the north east corner require some repair, as below. There are several other examples of spalling brickwork but all of these are readily repairable.



The south west corner

- 3.4 It may be appropriate to clad the building in timber, or some other weathering material which will prevent any further deterioration in the brickwork. There are several minor

hairline cracks running vertically through the external brickwork which correspond with the crack internally adjacent to the pier and the abutment of the two spaces – this is probably due to thermal expansion and an external cladding and dry lining internally will provide the necessary weathering/support.



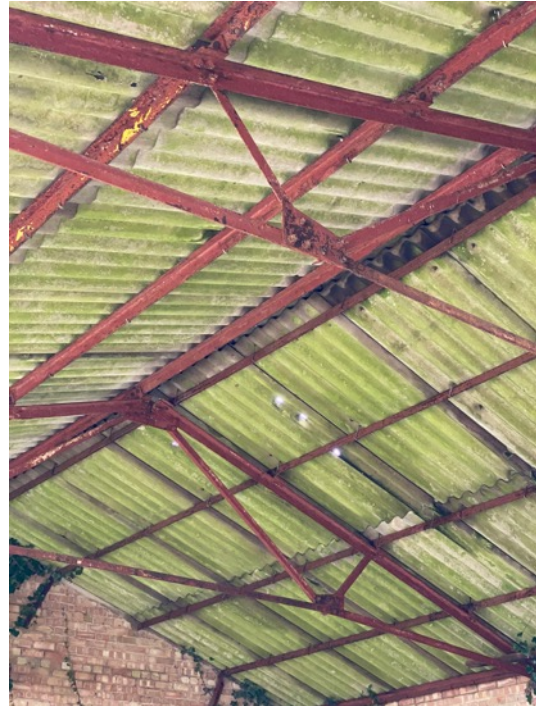
The south elevation

- 3.5 Essentially, the brickwork is reasonably sound and capable of use as an external wall for the building subject to additional weathering to domestic standards and dry lining internally to allow for compliance with Part L of the Building Regulations (thermal performance).
- 3.6 Strangely, part of the open section of the barn has an historic damp proof course which does not appear to be evident elsewhere on the building. Clearly this was part of a much bigger structure originally as a study of the historic plan suggests.



4.0 The Roof

- 4.1 The roof covering is asbestos and this will, of course, have to be removed and disposed of in accordance with current legislation. It could then be replaced with a flat roof system which will sit on the existing steel trusses.



- 4.2 The steel trusses are in reasonable condition although they all require shot blasting and re-priming to prevent any further rust. Given that they have been subject to some leaks in the roof they are in decent condition and would be capable of taking the loading from an alternative roof covering, subject to Structural Engineer's calculations. However, the additional support to the roof structure that will be provided by internal partitions etc., should be sufficient to enable the roof structure to remain in place. It is the one area of structure which will require some detailed attention for Building Regulations compliance as the roof covering will have to be removed and replaced with (most likely) a heavier material.

5.0 General Compliance

The building is capable of conversion, subject to the obvious limitations of compliance with both Building Regulations and domestic aesthetics.