



DWS Diamond Wood & Shaw Limited

Structural Inspection Building 5

Client: ***Root 2 Lean Limited***

Project: ***Red House Farm
39 Main Road
Ratcliffe Culey
Atherstone
CV9 3NY***

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Engineer:

Fergus Shaw CEng FStructE MICE FFB
Diamond Wood and Shaw Limited

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1.0 Introduction

- 1.1 Further to instructions, I visited Red House Farm, Ratcliffe Culey on 10 July 2024 in order to undertake a visual structural inspection of an existing agricultural building.
- 1.2 My brief was to undertake a visual structural appraisal to determine the condition of the existing building, and to form an opinion on their suitability for future conversion for residential use in accordance with the Class Q of the Town and Country Planning (General Permitted Development) (England) Order 2015.
- 1.3 My inspection was limited to elements of the structure which were visible, exposed or to which access was available.

2.0 Description

2.1 Building 5 is located to the rear of the farm complex. [Figure 1]



Figure 1

- 2.2 Building 5 is approximately 12m wide x 18m long with a height to eaves of 4.5m
- 2.3 The main superstructure comprises a steel portal frame formed of 4No. equal bays, and is single-storey with a corrugated fibre-cement duo-pitched roof supported on timber purlins.
- 2.4 The walls comprise 215 mm thick dado-height concrete blockwork with a combination of vertical timber and corrugated fibre-cement cladding to eaves level.
There are steel sliding doors in each gable wall
- 2.5 The ground floor comprises a cast *in situ* concrete ground bearing slab

3.0 Observations

- 3.1 The main frames are in good condition generally, with only superficial surface rusting to the exposed steel elements, and the frames remain vertical and plumb and without deflection or evidence of racking.
- 3.2 There is localised rusting and some de-lamination of some of the internal steel column flanges at low level.

4.0 Discussion and Conclusions

- 4.1 It is proposed to convert the existing building into residential accommodation utilising the primary structural elements. No new structural elements are required.
- 4.2 It is proposed to replace roof sheeting for which an insulated panel or similar lightweight system will be required to maintain the self-weight to approximately the same as the existing. No defects were observed to the timber purlins but a close inspection should be made by a specialist and treated with preservative against rot and infestation to ensure the long-term integrity. Alternatively, these could be replaced with lightweight cold-formed sections.
- 4.3 It is proposed to clad the walls at high level with a lightweight timber system. There was no damage to the blockwork at lower level, and it is proposed to over-clad this with brick slips. This work will not require any additional structural elements, and any nominal additional load will be able to be accommodated by the existing foundations.
- 4.4 The corrosion to the bases of the exposed columns is not sufficiently severe to affect the overall structural stability, but these will need to be treated as part of any permanent conversion works.
- 4.5 There is no evidence of defect associated with foundation movement.
- 4.6 The steel portal frame structure is considered to be structurally suitable and sufficiently robust and strong enough, subject to building operations reasonably necessary, for conversion from use as an agricultural building to a use as a domestic dwelling.