

**STRUCTURAL INSPECTION OF
TWIN SPAN BARN AT
WILSFORD DOWN COTTAGE
WILSFORD, PEWSEY**



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Project Summary

Visual Structural Inspection of steel portal framed barn for Full Plans Planning application

Client Details

Date	July 2024
Client	Tuckey Design Studio
Property Address	Barn at Wilsford Down Cottage, Wilsford, Pewsey SN9 6HB
Shire Ref number (our ref)	S-24-292
Report prepared by	Richard Hartshorne – 07976 691472

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1. Introduction

- 1.1. Shire was appointed by Tuckey Design Studio to carry out a visual structural inspection of a steel portal framed barn at Wilsford Down Cottage, Wilsford, Pewsey SN9 6HB for the purpose of submitting a Full Plans Planning Application to convert the building to a dwellinghouse.
- 1.2. The barn is located to the East side of Wilsford Down Cottage and looks out over open fields.
- 1.3. The barn is a tall single storey steel portal framed building with an asbestos cement clad roof. The walls are also clad in asbestos cement sheeting with low level single skin block walling.
- 1.4. The barn comprises of three spans, the two outer spans being Duopitch roofs and the central span being a monopitch. It is intended that the third span, the lower of the two duopitch roofs, is demolished as part of the conversion.
- 1.5. The date of construction is unknown but we would estimate the barn was constructed circa the 1960's. The roofing material has not been tested for asbestos but is from an era when it was used and it should be assumed to be asbestos until proven otherwise.
- 1.6. Any areas of the structure that were obscured or hidden from view at the time of the inspection have not been commented upon and we are therefore unable to confirm if these areas are free of defects or otherwise.
- 1.7. The visual inspection was carried out on Wednesday 29th May 2024 and the weather at the time of the inspection was dry and sunny.

Property Location



Location of Barn

2. External Inspection

- 2.1. The North elevation of the building is the primary access to the barn. The elevation is fully open and the steel portal frame is exposed to view. The steel frame has a light surface corrosion. All elements are in a satisfactory structural condition.



- 2.2. The East elevation of the barn is clad full height in asbestos cement cladding. The lower part of the elevation comprises timber boarding. The boarding will need to be replaced. Where exposed to view all steel elements are in an acceptable structural condition.



- 2.3. The South elevation faces out to open fields. The elevation is clad half height in asbestos cement corrugated sheeting, with single skin blockwork walling below. All elements are in a satisfactory structural condition.



- 2.4. The West elevation faces towards the Cottage Garden and is obscured by fencing and vegetation. This is also the section of the building which is proposed to be demolished.



- 2.5. The roof of the building is clad in single skin asbestos cement cladding. The cladding is in good condition with no defects noted but will need to be replaced with an insulated composite panel of similar weight to the asbestos sheeting.

3. Internal Inspection

- 3.1. The floor slabs within the building comprise of in-situ concrete. They are suitable to be overlain with a damp-proof membrane, insulation, and screed. The floor slab has been subjected to loading significantly higher than domestic loading and is suitable to be retained.



- 3.2. The purlins are of hot rolled angle steel sections. These have a light surface corrosion with no loss of section. The side rails are in timber. All elements are in a satisfactory structural condition.



- 3.3. The primary steel frame has a light surface corrosion with no significant loss of section. The frame will need to be painted as part of the conversion. However, a small number of columns will require repairs at the base where corrosion has taken place as shown in the photograph below.



- 3.4. The internal columns are slender and are not suitable to support a new first floor structure. The proposed first floor will need to be built off new walls.

4. Outline schedule of structural works to convert the building.

The following outline schedule of works has been compiled to give a general overview of the work and principles required to convert the existing steel framed barn into a dwellinghouse as part of a Full Plans Planning Application conversion.

- 4.1 Building Works to convert the existing building into residential accommodation will include the following: The existing roof cladding will be replaced as it contains asbestos, the purlins, primary steel frame and floor slabs will all be retained and re-used and will not require modification. Within the existing building footprint, a new insulated timber studwork wall lining will be constructed and the concrete floor will be overlain with a damp-proof membrane, insulation and screed.
- 4.2 The proposed works will require the following.
 - 4.2.1 The roof cladding will be tested for asbestos and replaced.
 - 4.2.2 The third span of the building will be demolished and a new external wall constructed.
 - 4.2.2 The floor slab will need to be cleaned suitable to receive a damp-proof membrane and insulation. In areas with no floor slab, a new slab will need to be provided.
 - 4.2.3 The steel frame will be retained and requires some small remedial works to the bases of a few columns, and it will require repainting to prevent any further corrosion.
 - 4.2.4 A new perimeter inner wall will be constructed in timber studwork to comply with Building Regulations Parts A and L.
 - 4.2.5 A new timber first floor will be added to the building supported off new ground floor walls.
 - 4.2.5 New windows and doors as required and permitted, will be supported by the new timber framed walls and will not require modification of existing primary structural frame elements.
 - 4.2.5 Install new wall and ceiling non-structural partitions to form internal rooms within the space.

5. Conclusions & Recommendations

- 5.1. The primary structure of the barn is suitable to be retained in the conversion to domestic living accommodation.
- 5.2. The building requires no structural changes and as noted above, in compliance with Wiltshire Core Strategy policy CP48, the building is structurally sound and capable of conversion without major rebuilding, extension or significant alteration.

Signed



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