



Structural Survey



Ty Mawr, Penybontfawr, SY10
0HN.

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Part One: Information about the property

Section One: Property and client information

Clients Name: Julia Letham

Clients Address: Ty Mawr
Ponybontfawr
Llanhaedr-y-Mochnant
SY10 0HN

Property Address: Barn
Ty Mawr
Pontybonfawr
Llanhaedr-y-Mochnant
SY10 0HN

Date of Inspection: Wednesday 2nd February 2022.

Building Description and Age: The building comprises an agricultural barn. The original stone walled part is believed to date back to the eighteenth century, whilst the larger steel framed structure has presumably been added in the latter half of the twentieth century.

The barn is a typical agricultural building that has been adapted to accommodate livestock. The building displays common characteristics to the local area and rural make up.

Accommodation: The barn is used as a pen for livestock and stabling purposes.

Services: There is a water supply to the barn.



Site:

The barn occupies part of the grounds of the Ty Mawr farmstead, comprising a number of enclosed paddocks and grazing lands. An access driveway through the site leads directly to the barn, which sits immediately behind the front paddock.

The barn is located behind the front paddock with good road access via the entrance driveway. The access lane circles around the barn and then goes uphill towards the current farmhouse.

Location:

Ty Mawr sits within a valley opposite the Afon Tanat. The farmstead is located on a lane linking between the villages of Penybontfawr and Llangynog, The area is located approximately 3 miles west of Llanhaeadr-Ym-Mochnant.

Weather:

During inspection, the weather was dry and mild.

Restrictions:

No significant restrictions were encountered.

Part Two: Summary

Section One: Overall Summary

Summary:

The barns are in good structural condition and free from any significant damage, beyond some localised distortions to the older stone walls. The original features remain largely in-tact and can be mostly retained during conversion.

The steel framed structure is a relatively modern construction and has been well engineered, providing a solid unit and supporting framework.

Evidently, the older stone building has undergone some degree of maintenance to replace roof coverings and rainwater fittings (in parts). This has no doubt helped to protect the building and preserved its integrity by preventing significant damp entry via the roof structure. The existing roof structures can be largely retained and remain in good condition, notwithstanding usual deteriorations which can be easily repaired.

The main walls to the stone barn remain complete with only relatively minor localised damage, which can be easily made good, such as localised damp staining and use of cement mortars. The door and window openings are all clearly identifiable and help to define the architectural style and merit of the barn. Necessary building repairs can be guided by BS7913 on conservation, to preserve the original design, style and construction materials where relevant.

Policy H8 (4.6.25) of the Powys LDP states:

Partial re-build means that the re-build should not cover more than 70% of the external walls. Substantial appearance or structure means that the dwelling shall possess the fundamental characteristics of a dwelling including features such as walls, window and door openings, evidence of the roofing profile sufficient to identify roof height, shape and features. In order to ensure the sensitive renovation of the former dwelling, it is necessary to ensure that the materials and features of the former dwelling are, as far as possible, incorporated into the renovation. Reference should also be given to any architectural and archaeological interest of the former building in the design of the renovation, for which there may be evidence contained within the Historic Environment Record. Alternatively, and particularly in the absence of any recorded evidence of the design of the former dwelling, the renovated dwelling should be of a design that contributes to preserving local vernacular.

The barn offers significant historical merit in the context of the local area, and forms an important part of the local landscape. Conversion will inevitably require alterations and repairs, however the existing shape, openings and aesthetic form can be respected and maintained.

The barn meets the criteria set by Cadw and Powys LDP for conversion in every aspect and I see no reason why this project cannot proceed. When the application is approved, this report can be updated to provide a more detailed structural specification. In its present form the report is considered sufficient to inform the planning process by demonstrating the general condition of the building and confirming that it is capable of conversion.

Signed:



Date:

08/02/2022

Surveyors Name and
Qualifications:

Alan McKeown MA AssocRICS DipRSV ACABE MRPSA.

Part Three: Building Condition

Section One: External condition

Description Of Defects

To set defects in context, this section describes the construction of each element of the property and lists defects with appropriate recommendations.

3.1 Chimneys

Description: There are no chimneys.

3.2 Roofs

Description: Corrugated sheeting.

Condition: Fair condition.

Minor evidence of corrosion to metal sheeting over stone barn.

Coverings over steel barn appear to be asbestos cement.



Metal coverings over stone barn



Assumed asbestos cement over steel framed structure

Recommendation:

Recover roof with suitable lightweight cladding, subject to architectural design.

Removal of existing coverings in line with HSE guidelines.

3.3 Rainwater Fittings

Description:

The rainwater fittings, where present, are formed in plastic.

Condition:

The rainwater fittings remain incomplete.



Missing gutter to rear roofline



No downpipe connected to front gutter

Recommendation:

Installation of new rainwater fittings; to be connected to soakaway drains via storm gullies.

3.4 Main Walls

Description:

Stone barn

The main walls are formed in 500mm thick rubble-filled stonework.

Structural openings incorporate timber lintel supports.

Localised rebuilding with concrete blocks around openings and to the front elevation at roof level.

Footings not seen.

Steel frame barn

Timber framing clad with vertical timber panels fixed with nails, supported by a framework of steel trusses.

Condition:

Stone barn

Satisfactory.

Evident distortions and unevenness, particularly to the right-hand side gable wall. Likely caused by compaction of the internal rubble fill. These do not appear to impact upon the structural integrity.

Previous re-pointing with hard cement mortars in most areas.

Biological growth evident to brickwork on right-hand gable wall. Indicates previous dampness to the masonry.



Original stone walls



Distortions to right gable side wall



Distortion at bottom corner



Re-pointing with cement mortar



Green 'biological growth' staining



Sections rebuilt in concrete block

Steel frame barn

Good condition.

Six number steel trusses form the structural framework of the barn. Sectional cut-timber framing between the trusses forms a base for exterior timber cladding.

All timber appears well formed and free of any significant damage.



Steel trusses supporting structure



Timber panels between trusses



Exterior timber cladding

Recommendations:

Areas of cement mortar (where possible to do so) to be raked out and walls re-pointed in more appropriate mix e.g. Ty-Mawr lime.

Localised repairs to address distortions within wall, e.g. helical bars etc.

Steel frame barn walls to be thermally upgraded, to be informed by project design.

3.5 External Joinery

Description:

Two timber-framed windows with in-set glazed panels.

Large openings for access into sheds.

Timber fascia boards.

Condition:

Window framing displays typical degradation to the timber and painted finishes, although these remain serviceable.

The main opening into the stone barn is a complete break within the walls.

Rear opening includes stone lintel support and narrow access for livestock usage.

Fascia boards display usual signs of timber decay and replacement is required.



Window openings



Barn openings



Deterioration to bargeboard timber

Recommendations:

Complete replacement/redesign of door and windows – to be informed by project design.

Replace fascia boards.

3.8 Damp Proof Course & Ventilation

Description: There is no damp-proof course (DPC) to the main walls.

Condition: There is no requirement for invasive damp proofing interventions (as per BS7913:2013 – Conservation of Historic Buildings).

External walls to be repaired with traditional materials to promote moisture evaporation or 'breathability'.

3.9 Drainage

Description: New drainage waste-water treatment and soakaway to be provided. To be informed by project design.

Part Three: Building Condition

Section Two: Internal condition

5.1 Roof Structure

Description: Stone Barn

Timber framework incorporating eight 150 x 80mm cut-timber joists.

Two 250 x 150mm crossbeam supports overlapping single cross beam at the mid-point.

180 x 100mm steel supporting joist across mid-point of the roof.

Steel frame barn

Coverings supported by six timber purlins spanning the length of the building, sat over six steel trusses.

Condition: By and large, roof structures adequately support the coverings.

Minor sagging noted to crossbeam within stone barn. Established feature and the risk of further movement occurring is low.

Beetle activity noted to joists within the stone barn; appears to be historical.

Active beetle activity noted to central crossbeam, assumed to be common furniture beetle.



Joists and central crossbeams to stone barn



Steel supporting joist



Active beetle attack to crossbeam

Recommendations: Localised treatment for wood-boring beetle.

5.2 Ceilings & Walls

Description: There are no internal coverings or linings; walls and ceilings remain exposed.

Condition: Significant use of cement mortar pointing to interior walls within the barn.

Lime-washing to rear walls in stone barn.

As highlighted in section 3.4, some localised helical bar repairs (or similar) will be required to areas of distortions.



Internal cement usage



Lime washing to inner wall



Inner distortions to stone walls

Recommendations:

Internal linings to be informed by project design.

5.3 Ground Floor

Description: The main floors are a concrete base incorporating a damp proofing membrane.

Condition: The main floors are relatively well formed.



Solid floor in stone barn



Solid floor in steel barn

Recommendations: Floor structure to be replaced or recovered – consider replacement with limecrete or cover with a self-levelling screed.

5.8 Internal Joinery

Construction: The interior of the barns incorporates pens for livestock.

Repairs: Joinery to be removed to accommodate new internal design - to be informed by project design.

