Plumb Stone Surveyors

Structural Survey



Timber Frame Barn, Top House Farm, Arowry, Wrexham, SY13 3EQ.

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1.0 Preliminary Information

a) Name and Address of Client(s):	Tom Hanmer Top House Farm Arowry Wrexham SY13 3EQ
b) Address of Property Inspected:	Top End Farm Arowry Wrexham SY13 3EQ
c) Date of Instruction:	06.05.2021
d) Date of Inspection:	16.06.2021
e) Circumstances of Inspection:	Building vacant.
f) Weather Conditions:	Dry and warm.
g) Current Use:	Disused barn.
h) Other Matters:	This report has been commissioned to ascertain the general structural condition of the barn and its suitability and adequacy for conversion and re-use. Inspection has been restricted due to access limitations where storage and equipment is being kept and access is limited. In consequence, it has been necessary to generalise. The report might be updated when the buildings have full access made available.
i)Confidentiality:	The report has been prepared solely for the use of the named clients and their other professional advisors. It must not be relied upon by any other parties. The terms under which the inspection has been carried out and the report prepared have been set out under separate cover.
j) Declaration:	This report has been produced by Alan McKeown MA AssocRICS DipRSV ACABE MRPSA of Plumb Stone Surveyors Ltd. Plumb Stone Surveyors Ltd are regulated by the RICS.
k) Signed:	[redacted]

2.0 Description

2.1 Site

a) Top House Farm is a working dairy farm.

b) The site incorporates fields, two main houses, several barns and silage.

c) The main houses are designated as being grade II listed properties.

2.2 Location

a) The site access is relatively straightforward at the junction of Striga Lane, New Road and Brookhouse Lane in Arowry.

b) The farmstead sits approximately 8 miles west of Whitchurch and 12 miles south of Wrexham.

2.3 Construction

a) The barn incorporates a single storey timber framed structure, clad with timber and corrugated panels, under a pitched roof with corrugated asbestos cement sheeting.

b) The internal structure incorporates an open plan space for storage purposes.

c) The main floor includes a part concrete and part brick base.

2.4 Accommodation

a) The barn is open plan.

b) Gross external floor area of the barn is approximately 67 sq.m.

2.5 Restrictions

a) Access was restricted to the rear side wall of the property. In consequence, limited viewing was available to the rear roof slope and wall.

3.0 Condition

Element	Description	Condition	Recommendation
EXTERNAL			
1. Roof Coverings	Corrugated metal sheeting with painted finish.	Sheeting is relatively well formed, although general deterioration is evident such as cracking at overlaps and moss growth. Coverings appear to be asbestos cement.	Re-cover roof with suitable lightweight cladding, subject to architectural design. Removal of existing coverings in-line with HSE standards.
2. Roof Structure	The roof incorporates a timber framed structure, formed with five trussed rafters. Gable rafters are supported by the timber frame walling and central truss supported by a central 250mm x 110mm oak beam. Trusses are formed in 75mm x 120mm hardwood beams, spaced at 3m centres. Hardwood purlin and ridge beams provide support between trusses.	Good condition. The structure has adequately supported the coverings and the space remains free from any significant damp ingress. There is evident wood boring beetle attack in localised areas. This appears to be mostly historical.	

3. **Rainwater Fittings**	The rainwater fittings, where present, are formed in plastic gutter sections.	Poor. The gutters are in a neglected state with evident distortions and detachment.	Installation of new rainwater gutters and downpipes; to be connected to soakaway drains via storm gullies.
4. Main Walls:	The main walls are constructed with a timber framework of 75mm x 75mm hardwood timbers sat upon brick dwarf walls. Framing is clad with timber boarding and corrugated sheeting. Footings not seen.	Timber framing is largely intact and structural integrity has been largely retained. The rear framing displays significant deterioration and timber decay in a number of areas. Widespread wood boring beetle attack evident. This appears to be mostly historical. Timber cladding is in poor condition and has largely rotted and decayed from weather exposure. Corrugated sheeting used to offer weather protection in areas of advanced decay to cladding. Sheeting offers basic weather protection.	Timber framing requires extensive repair to rear elevation. Localised woodworm treatment required. External timber cladding to be replaced. Strengthening and rebuilding of the existing wall structures required and thermal upgrades. Insertion of new DPC recommended.

5. External Joinery	Door and window openings formed with timber framing. Original ledged and braced doors to front entrance. Includes iron hinges and braces. Metal framed units to the rear elevation windows, incorporating glazed units.	All openings retain their original form. Front doors significantly damaged and unfit for purpose. Metal frames windows detached from timber framing. All joinery is in a neglected state.	New doors and windows will be required, as per project design. Original hinges to be retained for new entrance doors. Additional lintel support to openings will be required.
INTERNAL			
6. Internal joinery	Internal set up forms an open plan space used for storage.	Adequate for former usage.	New internal joinery to be informed by project design.
7. Ground Floor	Part concrete base and part brick finish..	Uneven flooring throughout.	Replacement floor required to incorporate DPM and insulation.

4.0 Photographs

EXTERNAL	
1 Roof Coverings	
	
Front roof slope with degraded paint finish	
2 Roof Structure	
	
Hardwood roof trusses	Central oak supporting beam

3 Rainwater Fittings	
	
Stained gutter and missing downpipe	Uneven gutter and missing end cap
4 Main Walls	
	
Timber frame to gable end	Timber framing sections to rear wall
	
Brick dwarf wall support to framing	Exterior timber cladding

	
Areas of timber decay to rear elevation frame	
	
Evidence of wood boring beetle attack	Corrugated sheeting to exterior and gable walls
6 External Joinery	
	
Metal framed window disconnected from frame	Damaged entrance door

	
Rot to frame and base of door	
INTERNAL	
	
Mixture of brick and concrete floor	

5.0 Summary

The barn is in a state of significant neglect. Exterior wall coverings have largely failed, and roof coverings offer only a basic level of weather protection.

Despite the evident neglect, the supporting timber framework remains mostly well intact. The existing frame can be used with new exterior claddings, retaining the character and profile of the barn.

The building is no longer suitable or required for its original use. However, the agricultural merit of the building can be retained via conversion. The barn offers significant historical merit in the context of the local area, and forms an important part of the local industry and landscape. Conversion will inevitably require alterations to form a complete envelope to the structures and new roof coverings, however the existing shape, openings and aesthetic form can be respected and maintained.

The baen meets the criteria set by Historic England, Cadw and Wrexham 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.