



STRUCTURAL INSPECTION REPORT

***Angel Barn,
Longwood Rd,
Paddock,
Huddersfield,
W Yorks.
HD3 4EU.***



On behalf of *Mr. James Garside Esq.*



Client Name: Mr J Garside, Name / No / Street Area Highfield Farm, Town / City Slaithwaite, Region HUDDERSFIELD, Postcode HD7 5UT.	Date of Inspection: 31 st Oct 23.
	Time: 09.45 to 10.45.
	Description of the weather: overcast with light rain.
Property Address: Angel Barn, Name / No / Street Longwood Rd, Area Paddock, Town / City Huddersfield, Region W Yorks. Postcode HD3 4EU.	Other Agents or Advisers: n/a .
	Surveyors Name: Tim Booth BSc (Hons), C Eng. C.Env. MICE.

Type of Survey and Limitations:

Structural Inspection and appraisal of the structure for planning purposes.

Visual inspection only without comment on building services, drainage, outbuildings, boundary fences and adjoining properties. Did not include the disruptive opening up of fixings or finishes.

Type of Structure and Materials of Construction:

Load bearing masonry, stone construction with dual pitched grey slate roof covering.

Use of Structure:

Old, agricultural.

Age and Alterations:

Original barn appears to date from late 1700's to early 1800's, subject to minor modifications to openings and addition of external & internal steel support structure.



Inspections and Observations:

Discussions with the Owners / Occupiers.

Not used.

Initial Inspection.

The property was situated N of Longwood Rd accessed via a small access road, S facing, detached with an adjoining & separate building on the LHS. Large trees were noted to the rear L & R hand sides.

It was situated in a yard area without access on the LHS.

The property was noted to have suffered movement of the front elevation requiring structural shoring to provide stability and otherwise appeared to be in fair condition for the construction type and age.

Exterior.

Roof.

The roof was dual pitched grey slate with stone ridge tiles and copings to the verges. Plastic gutters were located at the eaves.

The main roof had suffered slippage / loss of 10% of the slates, uneven and exhibited slight sags, the gutters were choked and overflowing. The verge coping stones were uneven and appeared to be loose / unpointed in places.

Front elevation.

The elevation comprised a central main arched doorway with bricked up minor doorway to the LHS and arched high-level windows, of coursed sandstone construction generally lime mortar and flush pointing. Openings had stone heads and cills. Stone corbels supported the troughing and a DPC wasn't present. A tree sapling was noted adjacent to the main door RHS.

Steel uprights were bolted to the elevation each side of the main door with a connected cross beam framing over.

The main door jambs each side leaned outwards with the elevation approx. 10-15 / 600 and the eaves had a bulge to the R of centre. The perpend was plumb with outwards movement noted at their upper parts. The upper eaves appeared to lean outwards.

Masonry was moderately weathered & pointing was approx. 50% spalled / absent. There was no evidence of significant subsidence / settlement related movement observed.

Rear elevation.

The elevation was of similar form and construction the front, but lacking windows and was provided with an external steel frame as per the front also. The RH side when viewed was partially buried with tipped soil.

The elevation was acceptably plumb, free from significant subsidence, masonry was moderately weathered & pointing was approx. 50% spalled.

Right gable elevation.

Comprised a plain elevation, similar construction & condition to the main elevations with a single high-level window and bricked up low-level windows.

It was free of subsidence; the upper front verge had suffered local displacement and had a temporary steel strap bolted in place.

**Left gable elevation.**

Could not be accessed for external inspection, however steel strapping was noted to the front verge junction as per the RH gable.

Interior.

Comprised a single accessible area to the underside of the roof.

The roof comprised grey slate to battens, 100 x 100 rafters at 500 c/s spanning from the ridge to eaves over a 3 of purlins each side in turn spanning from a 4 timber queen post trusses and onto the gables. Main timbers appeared to be in fair condition with minor localised decay / damp noted. Purlins were noted to have sagged down the roof pitch and light ingress / water leaks were noted in some areas. Principal timbers were generally in fair condition.

Walls were randomly coursed sandstone with lime mortar and lime washed finish. Floor was concrete ground bearing.

A temporary steel structural support scaffold was set against the rear elevation around the main door. Steel rods (16 dia) tied the front elevation to the rear at 4 levels, upper, 2 x mid and lower via plates & bolts through the external gable post frames. The upper and lower ties each side were vertically cross braced using 12 dia threaded steel rods welded to the wall bolt plates.

The front elevation was leaning outwards in the mid-section at the top. There was no evidence of cracking / displacement in the masonry to the upper front corners of the gable walls. The inner front elevation did not appear to have leaned outwards at top to the same extent as the exterior.

With the exception of the above points the walls were free from evidence of significant recent or ongoing movement or settlement.



Discussion.

The inspection has shown that the barn as a whole is in reasonable structural condition for its age and construction, with the main defects noted to the front / upper gable elevations. The LHS gable elevation could not be viewed externally, however internally it appeared to be much as the RH gable.

The front elevation has suffered loss of stability at some time in its life and began to tilt forwards at the top bulging outwards along the eaves. The extent of movement which equates to approx. 150 mm at the eaves has necessitated the introduction of bracing between external steel goal post supports tied to the stable rear elevation. The bracing appears to have arrested the movement.

The upper outer leaf of the front elevation has separated from the inner leaf due to the effects of roof spread from the rafters (purlin sag). This has caused the upper elevation to lean out further and induced cracking in the gable verge / eaves junction. The latter defect can be remedied by localised dismantling of the upper outer leaf and rebuilding back to plumb, properly tied to the inner and strapped to the roof structure.

The internal load bearing scaffold is now redundant and can be safely removed.

The external steel goal posts can be replaced (in a structurally managed sequence) with an internal frame tied to the front and rear elevations and also forming a mezzanine support for a new first floor.

The roof finishes have passed their functional service life, and need dismantling and replacement with breathable underfelts, new battens and fastenings. The main structural timbers (purlins & trusses) and rafters should be checked for local condition and replaced/ repaired, as necessary. The coping stones to the gable verges will need to be reset and strapped.

There were large trees adjacent to the rear sides and a small sapling at the front, but evidence of tree related subsidence was not observed. The sapling though should be removed.

From the inspection we can confirm the building is suitable subject to the above and compliance with UK Building Regulations requirements to be converted into a residential dwelling.



Recommendations.

The following works are recommended immediately:

- ❖ The building is suitable to be converted into a residential dwelling.

The following works are recommended in the short term (12 months):

- ❖ Remove saplings and other woody vegetation from the building perimeter.

The following works are recommended in the longer term (next 5 years):

- ❖ Install an internal elevation support frame tied to the masonry.
- ❖ Rebuild front elevation upper outer leaf and gable / verge corner masonry.
- ❖ Repair / replace the roof coverings and replace flashings.
- ❖ Install restraint ties to the elevations at eaves, verges and new FF level.
- ❖ Repoint all elevations and reset copings and parapets.
- ❖ Install DPM's to walls and DPC's to floors.

Signed

Date 9th Nov 2023.

Tim Booth, BSc (Hons), C. Eng, C.Env. MICE.

T J Booth Associates.

Damage category.

Ref table 1 BRE Digest 251, classification of damage based on crack widths.

Description	Category	Damage degree	Damage amount (mm)
Hairline (v fine)	0	Negligible	< 0.1
fine	1	Very slight	0.1 – 1.0
Fine - medium	2	Slight	> 1.0 < 5.0
	3	Moderate	> 5.0 < 15.0
	4	Severe	> 15.0 < 25.0
	5	Very severe	> 25.0