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**VISUAL STRUCTURAL INSPECTION
OF THE
ATTACHED BARN
WOODEND MILL
WOODEND
CLEATOR
CUMBRIA**



FOR

MR & MRS TOOMEY

Reference - WDS/05/9259/REP01

Date - 04/06/2025

WDS/05/9031/REP01

1.0 BRIEF

- 1.1** WDS Limited were instructed by Mr & Mrs Toomey to carry out a structural inspection of the Barn attached to Woodend Mill. The purpose of the inspection was to verify whether the existing barn building is adequate to convert into a dwelling. The survey was limited to a visual, non-disruptive inspection of the building where access allowed.
- 1.2** The building comprises a disused two storey attached barn which is formed in random stone rubble filled masonry walls which support a traditional timber rafter and purlin roof structure. The first floor had been removed prior to our inspection however it comprised timber joists which span between the walls of the property over timber floor beams.
- 1.3** The original building is well over 100 years old.
- 1.4** The inspection was carried out on the 28th May 2025. On the day of the inspection the weather was clear and dry.
- 1.5** It should be noted that there may be faults with the building which are masked or hidden by finishes that are not normally identified during a non-disruptive inspection.
- 1.6** The footings to the building were not exposed at the time of this inspection therefore no comment can be made as to their condition at this time.
- 1.7** For the purposes of this report the front elevation of the property will be considered the elevation which faces the farm yard, all other areas will be referenced as if looking at the front elevation.

2.0 OBSERVATIONS

- 2.1** The barn generally is in an adequate structural condition. The walls are slightly out of plumb, the gable has an outward bulge but this is not significant. There are a number of cracks apparent in the walls however these are longstanding and not due to any active movement. See photographs 01-03 attached.
- 2.2** The roof structure, if to be retained, will need inspected by a timber specialist to check for infestation/rot. The purlins are undersized to modern design standards and will need replaced or strengthened as part of the conversion works.. We understand that the first floor structure will be reinstated as part of the conversion works and hence no further comment will be made concerning the timber floor beams still in place, these will need removed. See photograph 04 attached.
- 2.3** The foundations to the property were not exposed during this inspection however considering the use of the building we see no issue with the existing wall and foundation structures supporting the loading associated with a domestic property. We would however recommend that trial holes are excavated at the corners of the barn to expose the depth of the footing. This is required to ensure that the floor slab specification can be provided such that undermining of the walls is prevented during construction.
- 2.4** There are a number of timber lintels located over the existing window and door reveals, these will need replaced with concrete lintels as part of any conversion scheme.

3.0 DISCUSSION/RECOMMENDATIONS

- 3.1** The main barn walls generally are in need of refurbishment, this may require some local rebuilding works where the masonry is found to be loose, especially after removal of the existing render. The provision of a new first floor should offer enhanced lateral restraint to the building.
- 3.2** The timber lintels and inserts throughout the building will need replaced with precast concrete or steel sections to suit spans and loadings.
- 3.3** The roof structure, if to be retained, will need inspected by a timber specialist to check for infestation and rot and treated accordingly. It is likely that the rafters and purlins are not in accordance with current standards and we

therefore recommended that the barn is provided with a new roof structure throughout.

- 3.4** We recommend that a trial hole is excavated at each corner of the barn to expose the base level of the wall such that the ground floor slab and insulation detail can be specified to ensure that undermining of the wall does not occur during construction.

4.0 CONCLUSION

- 4.1** The barn building is generally in an adequate structural condition with some re-building (less than 10% of the existing wall areas) and general refurbishment of the masonry walls necessary. It is our opinion that following the completion of the remedial works outlined above the barn will be structurally suitable to be converted into a domestic property. The conversion of the property into a dwelling will remedy all current faults and strengthen the building thus securing its long-term retention as a heritage asset.

For and on behalf of WDS Limited

Tom Short BEng (Hons) CEng MICE



PHOTO 01 VIEW ON BARN BUILDING REAR & GABLE



PHOTO 02 VIEW ON INTERNAL FACE OF REAR WALL



PHOTO 03 VIEW ON BARN INTERNAL PARTY WALL WITH HOUSE



PHOTO 04 TYPICAL VIEW ON ROOF STRUCTURE AND FLOOR BEAM