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## VISUAL STRUCTURAL INSPECTION

OF THE

**BARN  
LANGRIGG HALL  
LANGRIGG  
ASPATRIA  
CUMBRIA**



FOR

**MR & MRS GATE**

**Reference - WDS/05/9362/REP01**

**Date - 04/08/2025**

**WDS/05/9362/REP01**

## **1.0 BRIEF**

- 1.1 WDS Limited were instructed by Mr & Mrs Gate to carry out a structural inspection of the Barn adjacent to Langrigg Hall Farm, Langrigg. 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 detached barn which is formed in random stone rubble filled masonry walls which support a traditional timber rafter, purlin and king post truss roof structure. The first floor comprises timber joists which span between the walls of the property and internal timber beams. There is a single storey extension off the right hand gable which or similar construction to the main barn. Photographs 01-03 attached show typical views on the bar structure.
- 1.3 The original building is well over 100 years old.
- 1.4 The inspection was carried out on the 23<sup>rd</sup> July 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 concrete yard, Langrigg Hall being off the properties left hand gable.

## **2.0 OBSERVATIONS**

- 2.1 The barn generally is in an adequate structural condition. The walls are slightly out of plumb but within acceptable limits. Some minor cracking is apparent in the masonry walls however this appears historic. A number of the timber lintels have deteriorated and need replaced. The side extension off the right hand gable is in a similar condition to the main barn as noted above.
- 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 totally renewed as part of the conversion works and hence no further comment will be made in this report regarding its condition.

- 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.

### **3.0 DISCUSSION/RECOMMENDATIONS**

- 3.1** The main barn walls are generally structurally adequate but will need refurbished as part of any conversion scheme. This as a minimum should include re-pointing the external stone work and applying a scratch coat to the internal elevations to bond the masonry. Any cracks should be tied prior to re-rendering/plastering the walls. The provision of a new first floor should offer enhanced lateral restraint to the building when tied to the main barn walls.
- 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. The purlins will need strengthened as will the rafters to accommodate the additional loading associated with a new insulated roof build up.
- 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 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

A handwritten signature in black ink, appearing to read 'Tom Short', with a stylized flourish at the end.

Tom Short BEng (Hons) CEng MICE



PHOTO 01 VIEW ON FRONT ELEVATION



PHOTO 02 VIEW ON RIGHT HAND GABLE AND EXTENSION



PHOTO 03 VIEW ON REAR ELEVATION