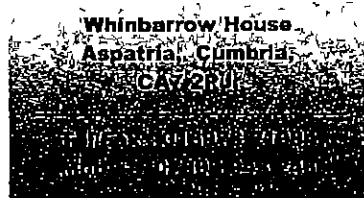




22 NOV 2013

**WHINBARROW DESIGN
SERVICES LIMITED**
CIVIL & STRUCTURAL
ENGINEERS



VISUAL STRUCTURAL INSPECTION

OF THE

**BARNS ADJACENT TO
PETERSBURGH FARM
BECKERMET
CUMBRIA**

FOR

MR SHERWEN

Reference - WDS/05/3018/REP01

Date - 20/11/2013

1.0 BRIEF

- 1.1** WDS Limited were instructed by Mr Sherwen to carry out a structural inspection of the Barns Adjacent to Petersburg Farm, Beckermot. The purpose of the inspection was to verify whether the existing structures are adequate to convert into a dwelling. The survey was limited to a visual, non disruptive inspection of the buildings.
- 1.2** Three separate barns have been considered as part of the survey. These comprise Barns 1-3 as shown on the attached plan sketch. Barns 1 and 2 comprise two storey attached buildings constructed from a combination of rubble filled random stone, clay brick and concrete block masonry walls which support a traditional timber truss and purlin roof. The first floors comprise timber joists. The ground floors comprise a combination of stone flags and concrete slabs. Barn 3 comprises a single storey detached structure of similar construction to the barns noted above.
- 1.3** Barns 1 & 2 are excess of 100 years old. Barn 3 has been built in the past 100 years.
- 1.4** The inspection was carried out on the 29th October 2013. 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 buildings which are masked or hidden by finishes that are not normally identified during a non disruptive inspection.
- 1.6** The foundations to the properties 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 properties will be orientated as noted on the attached sketch.

2.0 OBSERVATIONS

- 2.1** Barn 1 has a significant outward lean to its South wall. Patress plates with tie rods have been fixed through the building at its West end to prevent further movement. There are also a number of cracks to the West gable end caused by the movement of the South wall. Further cracking is evident midway along the barn's North Elevation.
- 2.2** The lean-to annexes to the North elevation of Barn 1 are inadequately tied into the main barn. Some of the walls which abut the main barn have been locally rebuilt after collapse.
- 2.3** We assume that the first floor structure to Barn 1 will be replaced as part of the proposed conversion scheme.
- 2.4** The roof structure to Barn 1 is generally in an adequate condition.
- 2.5** There is a significant inward lean to the North wall to Barn 2. The East wall has also a slight inward bulge. There is cracking to the internal corners of the barn, the abutting walls are inadequately tied in. The masonry to the barn also is weathered.
- 2.6** As noted for Barn 1 we assume that the first floor structure to Barn 2 will be replaced as part of the conversion scheme and therefore no further comment will be made concerning the floor structure. The roof to the barn appears to be in a good condition. Some of the timber lintels appear to be in a poor condition.
- 2.7** Barn 3 appears to be a more modern build to the other barns and generally appears to be in a good structural condition throughout.

3.0 DISCUSSION/RECOMMENDATIONS

- 3.1** Barn 1 needs the South Wall, where leaning, locally rebuilt plumb with the corners re-tied. The cracked masonry noted to the West Gable and North elevation will also need re-tied. Furthermore if the lean-to annexes to the North Elevation are to be included in the conversion then these will need their walls fully tied into the main barn walls where they abut.

3.2 The North wall to Barn 2 needs locally rebuilt where it is significantly out of plumb and re-tied into the return East and West walls. The slight lean to the East wall is not deemed significant at this stage. Furthermore we assume all timber lintels will be replaced and part of the conversion scheme.

3.3 As noted, Barn 3 is in a good general structural condition, no significant structural remedial works are deemed necessary at present.

4.0 CONCLUSION

4.1 Although the walls to Barns 1 & 2 are in a poor condition we conclude that with the proposed localised re-building works recommended (less than 25% of the overall wall areas) they will be suitable for conversion into a dwelling.

4.2 Barn 3 is suitable to be converted into a dwelling.

For and on behalf of WDS Limited

Tom Short BEng (Hons) CEng MICE