WDS LTD

WHINBARROW DESIGN SERVICES LIMITED
CIVIL & STRUCTURAL ENGINEERS

Whinbarrow House
Aspatria, Cumbria,
CA7 2PJ.

Tel/Fax : 016973 21984
Mob : 07803 943 248

VISUAL STRUCTURAL INSPECTION

OF

TARN HEAD FARM
FARM HOUSE & BARN
SELLAFIELD
SEASCALE
CUMBRIA

FOR

AVISON YOUNG

Reference - WDS/05/6133/REP01

Date - 06/10/2019

1.0 BRIEF

1.1 WDS Limited were instructed by Avison Young to carry out a structural inspection of the Farm House & adjacent detached Barn at Tarn Head Farm. The survey was limited to a visual, non-disruptive inspection of the buildings where access allowed.

1.2 The farmhouse and barn both comprise two storey buildings which are formed in random stone rubble filled masonry walls which support a traditional timber rafter and purlin roof and timber joisted first floor structures. The ground floor to the house comprises a combination of ground bearing concrete slabs and joisted floating floors; the barn ground floor comprises concrete ground bearing slabs and stone flagged areas. There is a single storey lean-to to the rear elevation of the farm house which is of similar construction to the main house. The rear wall of the barn is earth retaining with direct access onto first floor level. See Photographs 1 & 2 in the Appendix.

1.3 The original buildings are well over 100 years old.

1.4 The inspection was carried out on the 4th September 2019. 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 foundations to the house and barn were not exposed at the time of this inspection and therefore no comment can be made at this time on their extent or condition.

1.7 For the purposes of this report all locations will be noted as if looking at the front elevation, that is the elevation facing the farm yard.

2.0 OBSERVATIONS - THE BARN

2.1 The main two storey barn structure is in a very poor condition. The front elevation has a significant outward bulge. Part of the front elevation has been rebuilt adjacent to the bulging area suggesting some partial collapse in the past. There is a significant full height crack to the right hand gable and a similar crack to the left hand gable suggesting structural movement has/is occurring with the front wall moving differentially to the rear portion of the barn. The front wall is at risk of localised collapse. The internal walls are not suitably tied to the external and the walls at the corners are not suitably keyed in.

2.2 The barn roof structure comprises timber trusses which are located at regular centres and support timber purlins which in turn support the rafters. The timbers have been affected by wood worm and some areas show signs of rot. The purlins appears undersized and have deflected excessively in a number of locations.

2.3 The barns first floor structure has suffered rot and infestation and in its current condition is not structurally safe and therefore access should be prohibited.

3.0 OBSERVATIONS - THE FARMHOUSE

3.1 The farm house is in need of total refurbishment and modernisation with all the internal finishes in need of replacement.

3.2 There is a full height crack to the rear elevation which propagates from ground level up to eaves through the ground and first floor window reveals. The crack suggests the left hand gable of the property has been subject to some structural movement.

3.3 The floor joists throughout the property deflect excessively when walked on. The joists are in need of replacement.

3.4 The timber lintel to the rear living room window is rotten and needs replaced. It is likely that the lintels over the other doors and windows will be a similar detail and may have suffered similar deterioration.

3.5 The rear chimney stack has been rebuilt in block masonry in recent times. The wall beneath the stack is cracked and the render is in a poor condition.

4.0 DISCUSSION/RECOMMENDATIONS

4.1 The main two storey barn structure is in a very poor condition with the front wall at risk of localised collapse. The first floor structure is unsafe and the internal walls and main building corners need suitably tied in. Considering the condition of the barn and the fact that it is unused I would recommend that it is demolished.

4.2 The farm house is in need of total refurbishment. The presence of rot and wood worm in addition to the inadequate structural size of the roof and floor timber elements will necessitate the roof and floors to be removed throughout. Furthermore the ground floor slabs will need lifted to allow a DPC and insulation to be inserted and any slag fill beneath to be removed. The cracks apparent will need tied throughout. In essence the farm house will merely be the shell and with the requirement to replace timber lintels it is likely that much of the random stone masonry above will need replaced as part of this work. With this we would suggest that a more cost effective approach would be to demolish the farm house also.

5.0 CONCLUSION

5.1 The barn is in a very poor structural condition and is structurally unsafe. In our opinion the most cost effective and safe solution is to have the building demolished .

5.2 The extent of necessary remedial works to the farm house is excessive. In our opinion it would be more cost effective to demolish the property.

For and on behalf of WDS Limited

Tom Short BEng (Hons) CEng MICE

PHOTOGRAPH 1 FARM HOUSE

PHOTOGRAPH 2 DETACHED BARN FRONT ELEVATION