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VISUAL STRUCTURAL INSPECTION

OF THE

STEEL FRAMED BARN BUILDING
FLEMING HALL FARM
SEASCALE

FOR

AVISON YOUNG

Reference - **WDS/05/5332/REP02**

Date - **05/11/2021**

1.0 BRIEF

1.1 WDS Limited were instructed by Avison Young to carry out a structural inspection of the Farm Building Adjacent to Fleming Hall Farm House. The building inspected is located adjacent to the lane which gives access to the house and comprises a duo pitch framed building with lean-to built ofF the lane side. The building is currently in use as part of the livestock farm. The survey was limited to a visual, non disruptive inspection of the buildings where access allowed.

1.2 The main building comprises timber trusses at regular centres which support timber purlins which in turn support the roof cladding. The main trusses are supported off steel columns which also support the timber side rails which support the cladding. Off the lane side is a lean-to clad steel framed structure. The cladding to both buildings comprises a combination of timber boarding mainly to the side elevations and corrugated steel and cement cladding to the roofs and some walls.

1.3 The main duo pitch barn is over 100 years old. The lean-to has been erected in the past 40 years.

1.4 The inspection was carried out on the 16th September 2021. On the day of the inspection the weather was dry and clear.

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 For the purposes of this report all locations will be referenced as if looking at the front elevation, which is the elevation that faces the lane.

2.0 OBSERVATIONS

2.1 The steel columns to the main barn are considerably out of plumb with the building leaning towards the front. The columns are probably in excess of 150mm out of plumb over their height (See photograph 01, 02 & 03attached). The columns are also excessively rusted.

2.2 The side rails are in a poor condition with many having rotted and some have failed. The timber cladding is damaged in numerous locations and is poorly supported. The Steel sheeting to the walls is also excessively corroded and inadequately supported. A support post in the right hand extent of the barn has snapped and is hanging (see photographs 04 & 05 attached)

2.3 The main timber roof trusses appear to be in an adequate condition generally however there are signs of infestation and rot in localised areas.

2.4 The lean-to comprises a light weight steel frame supported off the main building columns which supports the timber purlins and side rails. The steelwork is undersized and heavily corroded. The timber purlins and side rails have also excessively deflected and are in a poor condition. The steel sheeting is heavily corroded with many fixings missing or having failed. (See photographs 06 & 07 attached)

2.5 Off the rear of the main barn is a more modern steel portal structure. This is independent of the older original barn with no structural connection. The damage and deterioration of the main barn has no bearing on the ongoing stability of the more modern adjacent barn.

3.0 DISCUSSION/RECOMMENDATIONS

3.1 The main barn and attached lean to are structurally inadequate. The movement to the main columns is excessive and further movement can not be discounted. The lean-to building is structurally inadequate and also in a very poor condition. The building as a whole is inadequately braced and the roof and external wall sheeting to both structures is at risk of becoming detached in high wind conditions, which is a serious safety issue. In its current condition the building is at risk of localised collapse. With the form and condition of the main building and lean-to we see no merit in carrying out any remedial or strengthening works. In our opinion the buildings need demolished. As noted the more modern portal building to the rear is a separate structure and will not be affected by the removal of the older barn structure.

4.0 CONCLUSION

4.1 The barn and lean-to structure are structurally inadequate and need demolished. We suggest the barns are vacated and cordoned off to prevent access. In addition we recommend that the cladding to the buildings is removed as soon as possible as the sheets are at risk of becoming detached in high wind conditions which is a serious safety issue to the farm workers and the public.

For and on behalf of WDS Limited

Tom Short BEng (Hons) CEng MICE

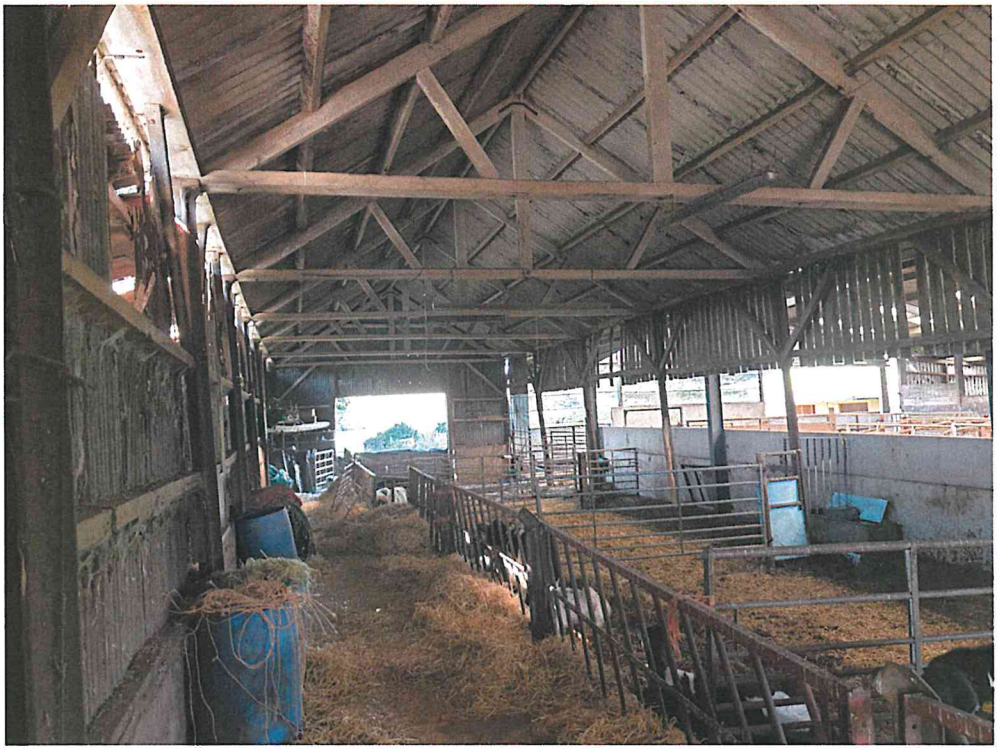

PHOTO 01 GENERAL VIEW INSIDE THE MAIN BARN

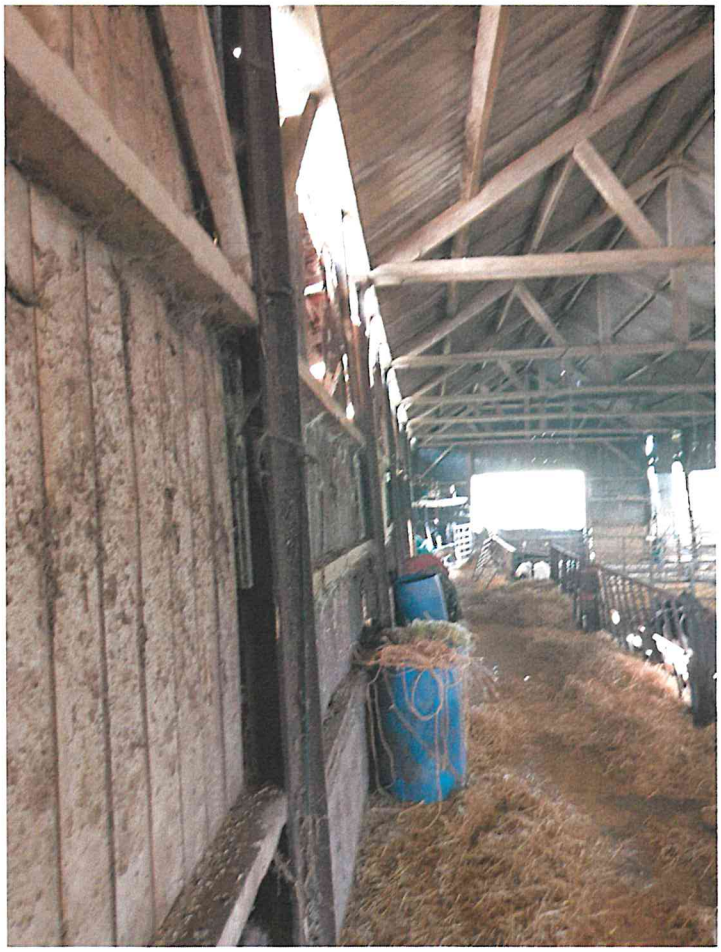

PHOTO 02 VIEW ON THE MAIN BARN COLUMNS

PHOTO 03 VIEW ON THE CONDITION OF MAIN STEEL COLUMNS

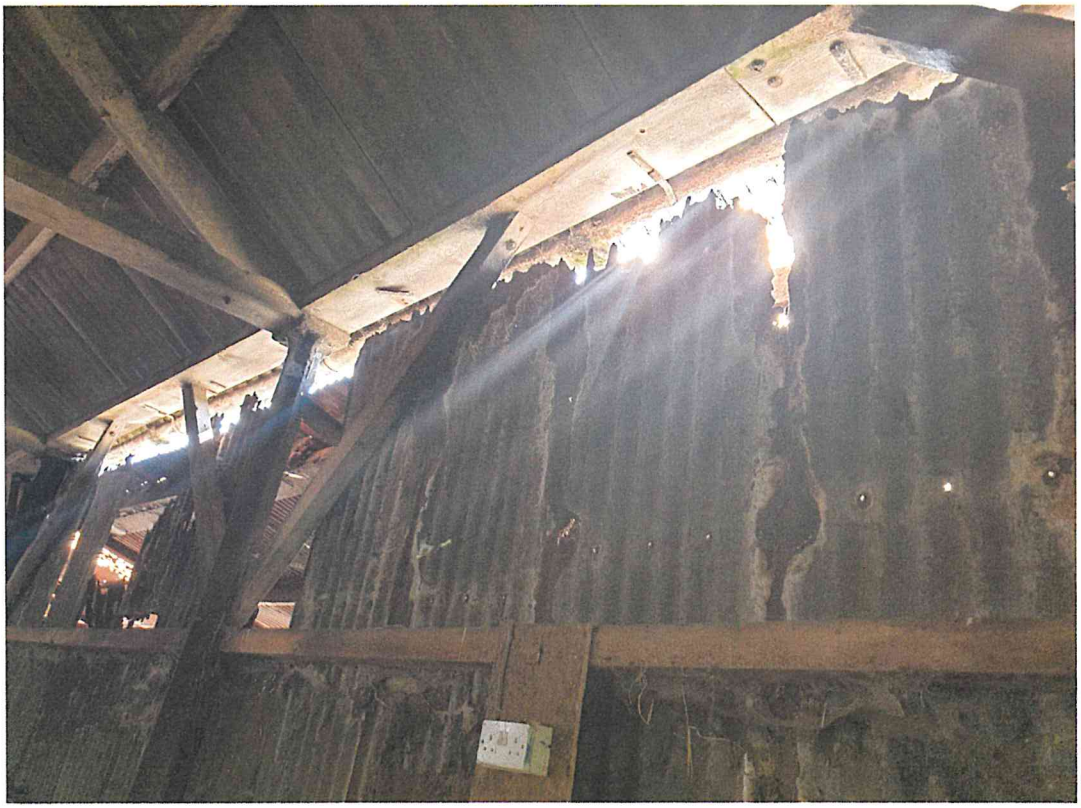

PHOTO 04 TYPICAL VIEW ON THE WALL CLADDING

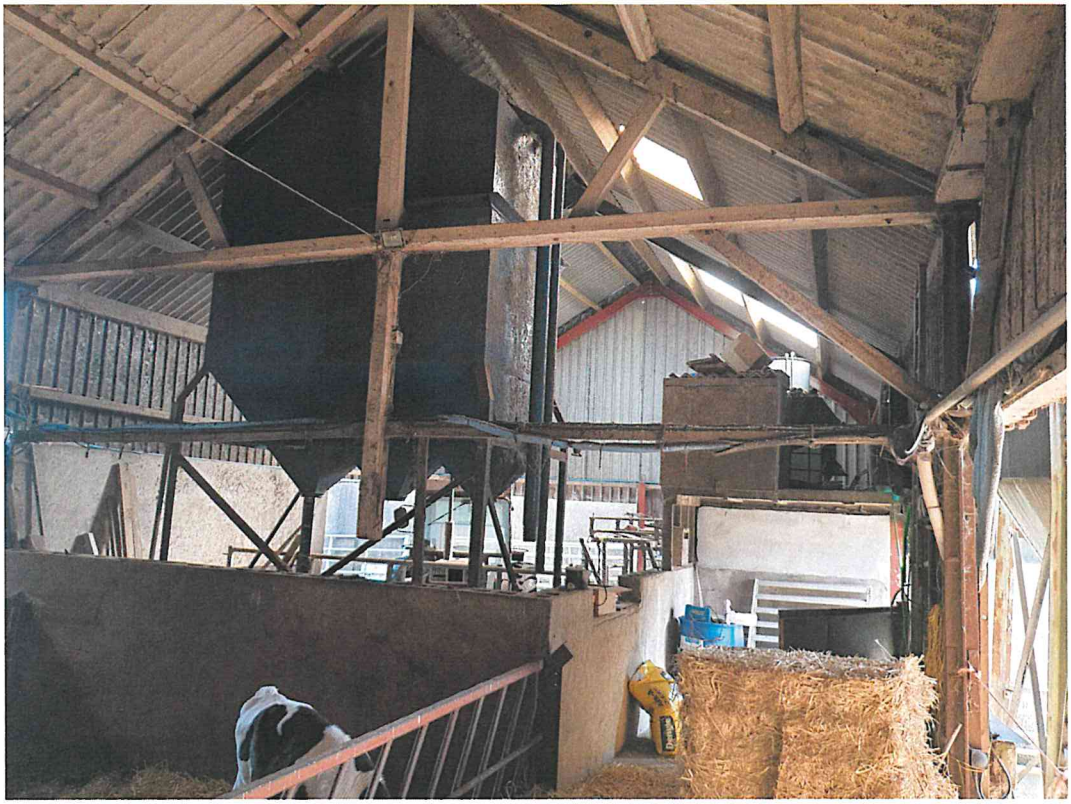

PHOTO 05 VIEW ON THE INCOMPLETE TIMBER GABLE POST

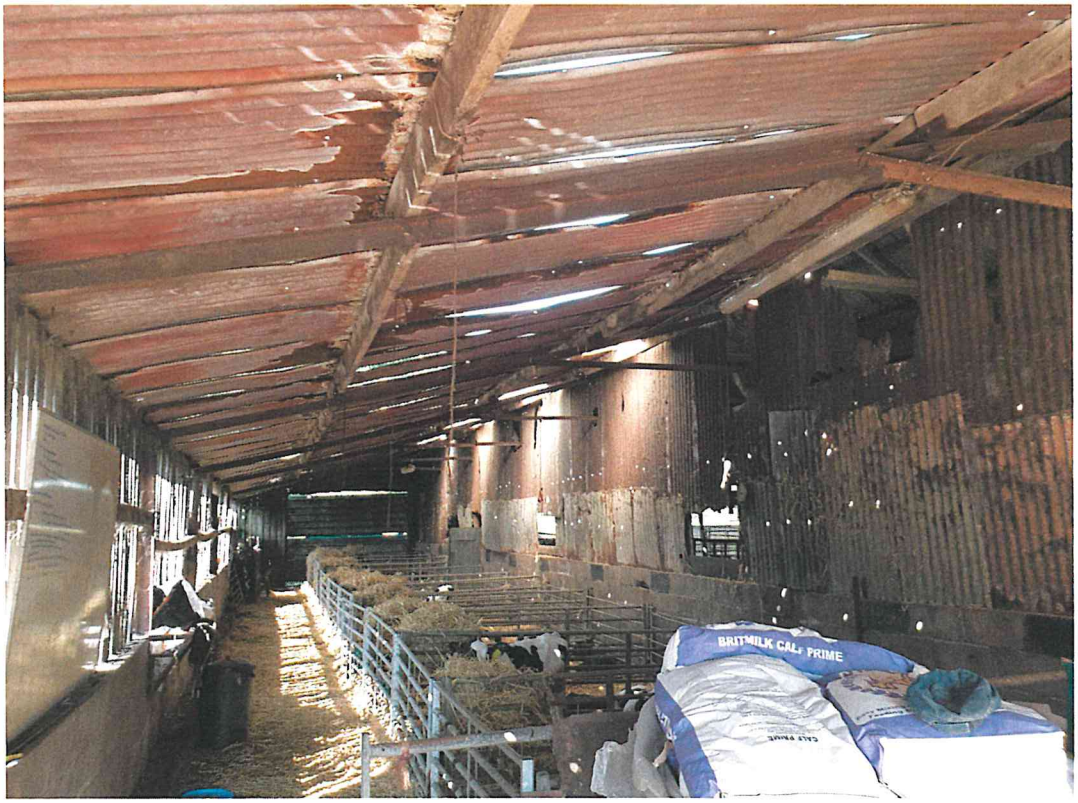

PHOTO 06 VIEW ON THE LEAN-TO STRUCTURE GENERALLY

PHOTO 07 VIEW ON THE LEAN-TO INTERFACE WITH THE MAIN BARN