

# **STRUCTURAL STATEMENT**

## **BARNs AT LAKE HOUSE FARM, HEMPSTEAD**

**Mrs M Lubbock**

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May 2018

## **STRUCTURAL STATEMENT**

### **INTRODUCTION**

- 1.0 The buildings were inspected by David Fenton FRICS M.Build.E MCABE A Chartered Building Surveyor and a Chartered Building Engineer
- 2.0 The buildings occupy a relatively level site to the west of a minor road between Finchingfield and Helions Bumpstead. The buildings have not been used for any meaningful agricultural use for a number of years other than for the storage of building materials used on the estate owned by the applicant

### **BARN 1**

- 3.0 Barn 1 comprises a three bay, traditional, timber framed barn with a midstrey to the central bay, formed off a masonry plinth and clad externally with weather boarding.
- 4.0 The barn retains the majority of the original wall framing members.
- 5.0 The original roof structure has been replaced and now comprises relatively modern timber trusses on bay lines and at mid-span, formed with squared timbers and comprising 150mm x 75mm bottom chords and posts with 125mm x 75mm rafters and struts. The trusses support purlins and the sheeting. The roof trusses to either side of the central bay incorporate vertical metal ties. The roof is now covered with corrugated asbestos cement sheeting.
- 6.0 The wall structure is formed with 190mm x 175mm section posts off a base plate and brick plinth, with a 200mm x 150mm eaves beam to the head and a 175mm x 100mm girth beam approximately 2000mm above floor level. Intermediate studs are of varying squared sections and incorporate diagonal bracing.

- 7.0 The base plate has been renewed in 175mm x 100mm softwood to the southern side of the western bay and to the gable end. The original plate has been encased in concrete to the northern side of the western bay and to the southern side of the eastern bay.
- 8.0 Intermediate studs below the girth beam have been replaced in softwood to one bay, both gable ends and to the midstrey. There is brick infill between the studs to most bays.
- 9.0 There are original, large section tie beams spanning between the main posts at bay lines with knee braces, together with additional modern trusses on bay centre lines.
- 10.0 Lower stud work and the diagonal brace are defective to the southern wall of the eastern bay where affected by water entry and require scarf repair. One stud is missing to the eastern gable above the tie beam
- 11.0 The wall structure is generally in a sound condition, requiring little repair / replacement. Where repairs are required, sensitive scarf repairs should be possible rather than full replacement of the timbers. The condition of the encased base plate is unknown and some repair /replacement may be required.
- 12.0 The roof structure is sound but will require boarding or the addition of rafters to support a tiled or slated finish.

## **BARN 2**

- 13.0 Barn 2 comprises a four bay, traditional timber framed building with a midstrey to the eastern side. The building is formed off a masonry plinth that has been renewed in modern 225mm brickwork.
- 14.0 The wall structure is formed off a new 175mm x 100mm plate with a damp proof course below and incorporates a 175mm x 175mm girth beam at mid height
- 15.0 The building generally retains only the original main posts and girth / eaves beams with all intermediate stud work being replaced with modern softwood except to isolated bays above the girth beam

- 16.0 The wall structure is formed with 200mm x 150mm jowled main posts with knee / diagonal braces at the post / tie beam junction. Intermediate studs are of 75mm x 75mm squared section and incorporate diagonal bracing
- 17.0 The wall structure is in a good condition with no repair / replacement being required. There is some outward leaning of the midstrey posts and some remedial works have been carried out at eaves level where additional timbers have been bolted to existing and are plated. Tie rods have also been introduced between the eaves beams
- 18.0 A central post exists below the tie beam on bay 3/4 this is supported on a modern brick pad
- 19.0 Some repairs are required to the girth beam / post connection on bay line 1/2, where the joint has failed
- 20.0 The walls are clad externally with weather boarding
- 21.0 The roof structure is similar to Barn A and in a sound condition

### **BARN 3**

- 22.0 Barn 3 is a timber framed range of outbuilding / stables on two levels, clad externally with weather boarding. The structures are typical and include arched braces at main post tie beam junctions. The brickwork plinth is approximately 150mm high above floor level and is generally in a poor condition
- 23.0 The roof and wall structures are virtually complete and whilst some repairs will be required at low level and to isolated areas, these are relatively insignificant

### **GENERAL**

- 24.0 No trial holes have been undertaken to determine the depth of foundations that exist to the buildings. However the buildings appear to be in a reasonably sound structural, with little evidence of any serious movement or settlement

## **CONCLUSION**

25.0 The buildings are in a satisfactory condition and could be converted to an alternative use without the need for any substantial alteration, repair or rebuilding.



**David Fenton FRICS M.Build.E MCABE**

9<sup>th</sup> May 2018

DF/DF/SH/2/ML1-15/May'18