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STRUCTURAL INSPECTION REPORT

OF

BARN STRUCTURE

AT

HOLLINS HEAD FARM
LASK EDGE ROAD
LASK EDGE
NR LEEK
ST13 8QS

FOR

MR & MRS HUNT

OF

HOLLINS HEAD FARM
LASK EDGE ROAD
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NR LEEK
ST13 8QS

Shepherd Gilmour LLP
4 Cherry Orchard
Ryecroft
Newcastle under Lyme
Staffordshire
ST5 2UB

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1.0 INTRODUCTION

1.1 Shepherd Gilmour were instructed to carry out a structural inspection of the part stone/brick barn structure at Hollins Head Farm, Lask Edge Road, Lask Edge. Our engineer visited the site on 21st May 2013 to carry out this inspection.

1.2 The inspection comprised a general, visual examination of the exposed accessible surfaces and areas of the property. We have not examined the woodwork, foundations, various services and other parts of the building structure and fabric concealed at the time of inspection and we are, therefore, unable to comment on the condition of such areas. We have not consulted with the Local Authority or other statutory bodies.

2.0 GENERAL DESCRIPTION

2.1 The barn unit is a detached building with integrated timber canopy extending beyond the front elevation. The barn is accessed via a farm track approximately 200 metres from the adjacent carriage way.

2.2 The main barn building is a single storey (shippon) type structure with two smaller outrigger buildings constructed alongside. The structure has been constructed in masonry and includes a mixture of both brickwork and stonework which are of a thickness of approximately 250mm.

2.3 The shippon building has a rectangular footprint which is subdivided into two areas separated centrally by a masonry partition wall. The duo pitched roof structure appears to have been constructed with a clay tile supported off a system of timber rafters on timber purlins which span between the external and internal partition walls.

2.4 The two smaller outrigger structures are constructed in masonry (brickwork and stone) under a corrugated asbestos type roof structure.

2.5 The topography of the site is such that the levels drop between the front elevation down towards the rear in the order of 200-300mm.

3.0 FRONT ELEVATION

3.1 This elevation has two door openings with stone lintels above and is generally constructed of 215 mm solid brickwork. The masonry to the far right hand side alongside the outrigger, (referred to as the cattle shed), consists of stonework with two courses of bricks above up to eaves level.

3.2 To the front of this elevation is a large canopy supported off a system of timber beams and posts with a corrugated asbestos type roof covering over a part brick paved/concrete floor.

3.3 The masonry along this elevation is generally in a satisfactory condition with some slight water staining noted at floor level.

3.4 The rainwater goods where present are in a poor condition.

3.5 The roof structure appears to be in a reasonable condition, however, there is some undulation noted along its length and several damaged or missing tiles are also noted.

4.0 FRONT ELEVATION TO RIGHT HAND SIDE OUTRIGGER (CATTLE SHED)

4.1 This elevation has a painted brickwork finish with a single door opening located towards the left hand side.

4.2 Above the door is a timber lintel which indicates signs of disturbance due to the wet rot noted.

4.3 The masonry panel is in a poor condition with significant damage noted to the mortar joints and brick faces as a result of weathering.

5.0 GABLE ELEVATION TO RIGHT HAND SIDE OUTRIGGER (CATTLE SHED)

5.1 The brickwork to this elevation is in a poor condition with significant open joints and damaged brickwork noted.

5.2 Areas of damp are noted to the brickwork at low level and to the right hand side.

6.0 REAR ELEVATION TO OUTRIGGER (CATTLE SHED)

6.1 This elevation is predominately brickwork with two window openings located below the eaves and partially clad with hanging tiles between.

6.2 The masonry panel is out of plumb and is clearly leaning out away from the building rotating about ground level.

6.3 The brickwork to this elevation is in an extremely poor condition with large areas of damaged brickwork and open mortar joints. Significant damp and moss growth is noted in several areas along this elevation.

6.4 A cement render covers large areas of this elevation which appears to be an historic attempt to protect the masonry. The render is now debonding and breaking off.

6.5 The roof structure is a mono pitched corrugated asbestos roof.

7.0 RIGHT HAND SIDE GABLE ELEVATION TO SHIPPON

7.1 This elevation is constructed in stonework and seems to be in a satisfactory condition with the wall appearing straight and plumb.

7.2 An exploratory trial hole had been excavated alongside this elevation to establish the depth of the existing foundations. The trial hole revealed that the wall was founded at a depth of – 450mm below ground level being built straight off the firm to stiff, grey/orange clay.

7.3 The external ground levels are higher than the internal floor levels by approximately 200-300 mm in this area.

8.0 REAR ELEVATION TO SHIPPON

8.1 The elevation is constructed in traditional masonry and has two window openings located within, each having a concrete lintel over.

8.2 A bulge is noted within the wall towards the central area of this elevation.

8.3 The masonry panel indicates significant areas of weathered brickwork and open mortar joints. Damp is noted as low level and a large portion of this elevation is covered in vegetation.

9.0 LEFT HAND SIDE GABLE ELEVATION TO SHIPPON

9.1 The gable elevation is constructed alongside the single storey outrigger building known as the dairy.

9.2 This elevation is constructed in traditional brickwork and has a part cement render finish.

9.3 The brickwork is in a satisfactory condition, there is some evidence of historic repointing having been carried out in this area.

10.0 DAIRY – ALONGSIDE LEFT HAND SIDE GABLE OF SHIPPON

10.1 The rear elevation has long since collapsed and been removed leaving the rear of this area exposed.

10.2 The front is covered in significant amounts of ivy vegetation, which prevents a detailed investigation of this elevation.

10.3 The front elevation appears to be constructed in brickwork with a single door and window opening. The side elevation seems to have been built in stonework.

10.4 The roof is clad in corrugated asbestos and is in a poor condition with open cracks noted along the centre of the panel.

10.5 Internally, the masonry has a cement render which is in a very poor condition having debonded in several locations and indicating signs of fracturing.

10.6 The floor has a concrete finish of varying levels within this area. The level of survey in this area is limited due to obstructions.

11.0 INTERNAL LEFT HAND SIDE SHIPPON (1)

11.1 This area has a stone floor with a step up to the cattle pens. A concrete division wall is located on the gable wall providing a small separation between feeding troughs.

11.2 The internal masonry walls have a cement render finish.

11.3 Timber tie members are noted built into the partition wall at front and rear elevations.

11.4 The roof structure is supported off a timber purlin on each pitch providing intermediate support to rafters between the wall plate and ridge.

11.5 A significant fracture is noted in the masonry partition wall at the junction with the rear wall. The cracking starts at ground level and terminates at the intersection with the purlin support.

12.0 INTERNAL RIGHT HAND SIDE SHIPPON (2)

12.1 This area has a stone floor, part cement render walls and timber support purlins as the adjacent room.

12.2 The brickwork to the rear elevation appears to be constructed behind the stonework to the gable forming a significant gap between the two elements. We would suggest that corner strapping is required to help restrain these two areas.

12.3 A large fracture is noted at the junction between the masonry partition wall and rear elevation which corresponds with the fractures noted on the opposite side. It would appear that the rear wall may have experienced some historic movement which has resulted in the cracks noted. Additional restraints may be required in this area to increase the stability of the rear elevation.

13.0 INTERNAL RIGHT HAND SIDE OUTRIGGER (CATTLE SHED)

13.1 This area has a concrete floor and corrugated asbestos roof with a central timber support beam and timber column.

13.2 The brickwork is in a poor condition with the rear elevation significantly leaning out from the main building line.

13.3 Several diagonal fractures are noted in the end wall where the rear wall has moved adjacent to this location.

14.0 CONCLUSIONS AND RECOMMENDATIONS

14.1 From the observations made it would appear that no ongoing settlement or subsidence was noted to the building.

14.2 In general the damage noted was confined to the superstructure and was caused by a variety of reasons.

14.3 These encompassing, weathering, mechanical damage, thermal and differential movement coupled with the various alterations that have been made to the building. We understand that the building is to be converted to form a commercial premises.

14.4 We would however recommend that a formalised regime of repairs is drawn up which encompasses such items as the following.

14.5 Formation of new ground bearing concrete slabs with mesh reinforced edge thickening around the perimeter. Care should be taken when carrying out this operation not to undermine any existing walls which may require underpinning should the proposed formation level be lower than the existing foundation level. Given the relatively shallow depth of the existing foundations it is considered highly likely that the building will require underpinning.

14.6 Introduction of damp proof course.

14.7 The formation of new insulated internal wall coverings.

14.8 The introduction of steel restraint columns or internal buttressing walls to the rear elevation to stabilise the masonry panels. In conjunction with restraint strapping being applied at corners and wall plate junctions etc.

14.9 With regards to the timber roof structure, an inspection should be undertaken by a specialist to establish whether any damage has been caused due to insect infestation and/or damp and any recommendations being undertaken accordingly.

14.10 The introduction of new roof elements and coverings and made good where applicable.

14.11 Formalisations of lintels above all apertures. Removal of timber lintels and other timber elements within wall structure where applicable.

14.12 External masonry requires repointing with areas of weathered/spalled brickwork being made good with the necessary crack repairs being undertaken.

14.13 The brickwork to the two outrigger buildings is in a very poor condition and would need a significant amount of rebuilding. Given the complexity of carrying out these repairs to a relatively small part of the building it may be worth considering rebuilding these elements of the structure off an appropriate foundation.

14.14 The introduction of new rainwater goods and formalisations of drainage on site.

14.15 Not withstanding the points above, the building is of substantial construction. Shepherd Gilmour are satisfied that the structure is sufficiently robust and entirely suitable for conversion with very limited amounts of work required.