



Barns at Leadenhall Farm, HOLBEACH St. MARKS

Condition & Structural Report:

Date of Inspection: 14th April 2020



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‘Barns 1’ at Leadenhall Farm, Holbeach St. Marks

Revision History

Rev	Date	Purpose/Status	Document Ref.	Comments
-	19/04/20	For Information	Survey Report	

Guy Forman Architect specialises in historic building surveys and in historic barn conversions. He is on the Lincoln Diocese's approved list of Professional Advisers for undertaking Quinquennial Inspections of Grade I, II* and II listed Churches within the Lincoln Diocese.

1 INTRODUCTION

1.1 LOCATION OF EXISTING BARNs

Historic Barns at Leadenhall Farm
Holbeach St. Marks
Spalding
PE12 8HB

1.2 SCOPE OF THE SURVEY

The report is made following an inspection carried out on the 14th April 2020. The weather was fine and sunny at the time of the survey. A general inspection of the condition and state of repair of the barn has been made. The inspection was limited to normally accessible parts without opening up roof or floor spaces. We have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect. Neither have we closely inspected or made comment on, on the general condition of fixtures, fittings and general decoration.

Our insurers request us to stress that we have not carried out any investigation to determine whether any high alumina cement was used during the construction of the building inspected and we are therefore unable to report that the building is free from risk in this respect. In view of the possible potential danger connected with high alumina cement we strongly recommend that the appropriate investigations, inspections and tests be carried out immediately by a suitable qualified engineer.

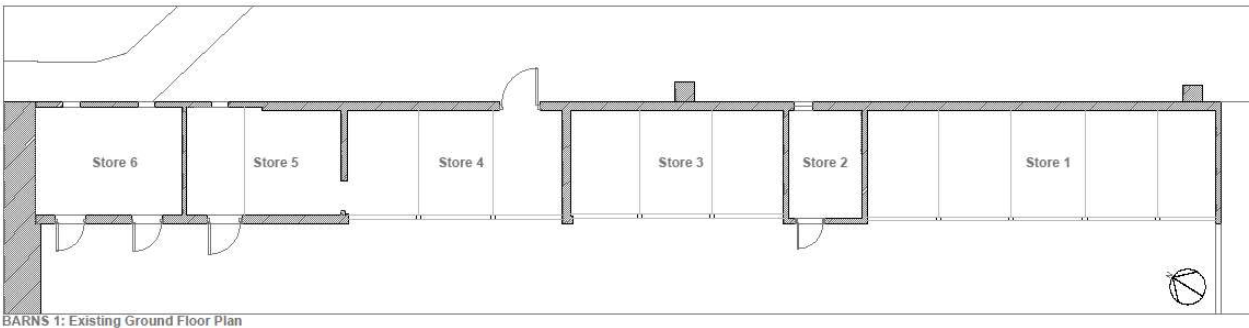
This report indicates the condition of the building and identifies defects. It does not purport to be wholly comprehensive or to give definitive solutions for remedial work. Neither is it a specification of materials and workmanship required to carry out remedial work and must not be used for such purposes.

2 SURVEY

2.1 TOPOGRAPHY & GEOLOGY

The British Geological Survey website suggests that bedrock is of the Kimmeridge clay formation, consisting mainly of mudstone. The overlying superficial deposits are Tidal flats consisting of clay and silt. The underlying mudstones and clays generally have a good bearing capacity. However they can be affected by desiccate-related shrinkage, the degree of movement being dependant on the relative portions of materials and the particle size. Any trees or established hedges in close proximity to the foundations could therefore be a threat to the stability of the foundations.

BARNs 1: Existing Ground Plan



2.2 BARNs 1: EXTERNAL INSPECTION

- 2.2.1 The solid brick walls, formed by locally handmade bricks, are constructed in English Garden Wall bond with every fourth course a header course.
- 2.2.2 The long rear wall (north-east elevation) to 'Barns 1' is generally true, with just the slight outwards lean out to the rear wall of 'Store 1'. With the installation of a new roof structure, which will help provide further restraint to this wall, this lean will not warrant re-building.
- 2.2.3 The two existing buttresses to the north-east elevation aids in the lateral restraint to this long rear wall (north-east elevation) to 'Barns 1'. These buttresses should be retained as part of the conversion works.
- 2.2.4 Overall the brickwork is generally all in good order, with just the following noted areas in need of localised repair:
- 2.2.5 To 'Store 4', the rear wall has in more recent times been re-built in common bricks. Whilst this wall is structurally sound, it may be desirable to re-build this wall above ground level in matching handmade bricks.

- 2.2.6 To 'Store 5', a section of the front (south-west) wall has in more recent times been re-built in common bricks. This wall also has a significant outwards lean, suspected to be largely due to the lack of lateral restraint; there is no masonry buttressing wall. This section of wall should be re-built in matching handmade bricks, and an internal buttressing wall provided as part of the conversion works.
- 2.2.7 To 'Store 6', the centre section of the front (south-west) wall has received impact damage in the past. A small section of the centre section of this wall will in turn requires chopping out and re-placing in handmade bricks.
- 2.2.8 Aside from the above notes, the front wall sections of masonry (south-west elevation) and end gable masonry (north-east elevation) to 'Barns 1' is generally true and in good order.
- 2.2.9 Some isolated areas of eroding brickwork will require chopping out and replacing (notably to the front corners of 'Store 2') along with some scattered open joints re-pointed in lime mortar.

2.3 BARNs 1: INTERNAL INSPECTION

- 2.3.1 Stores 2, 5 & 6 have solid concrete floors. Stores 1, 3 & 4 have an earth floor, which have been lowered over the years from their use as housing for cattle. As part of the conversion works, a new insulated solid concrete floor will be laid to suit the required finished floor level as required by the Flood Risk Assessment.
- 2.3.2 Internally the solid brick walls are generally sound, with just some localised areas of cracking requiring a 'heli-stitch' repair as part of the conversion works:
- Minor Crack to north-east corner of 'Store 1'.
 - Minor Cracks to north-west corner of 'Store 1'.
 - Raking Crack to the Partition Wall between 'Store 5' and 'Store 6'
- 2.3.3 The partition wall between Stores 3 & 4, whilst structurally sound, requires tying into the rear external flanking wall.
- 2.3.4 To Store 6, to the centre section of the front wall, the external impact damage is mirrored internally and will accordingly require repair.
- 2.3.5 To the rear wall of Store 3 some isolated areas of damaged brickwork shall require chopping out and re-placing in handmade bricks.
- 2.3.6 The roof is of traditional timber construction with rafters supported by purlins with collars.
- 2.3.7 It is understood the whole of the roof is to be replaced and recovered in clay pantiles.

2.4 BARNs 1: CONCLUSIONS & RECOMMENDATIONS

- 2.4.1 The structural condition of the barns is very good with no major remedial repairs or re-building being necessary.
- 2.4.2 Our inspection did not include any investigation of the existing foundations.
- 2.4.3 It is understood the roof as a whole is to be replaced as part of the conversion works.

BARNs 2: Existing Ground Plan



BARNs 2: Existing Ground Floor Plan

2.5 BARNs 2: EXTERNAL INSPECTION

- 2.5.1 To 'Stores 1 to 4' The solid brick walls, formed by locally handmade bricks, are constructed in English Garden Wall bond with every fourth course a header course.
- 2.5.2 The long rear wall (north-east elevation) to 'Store 1' and 'Store 4' is all true and in good condition. A young self-set tree is in need of removing to this elevation.
- 2.5.3 Similarly the masonry walls to the south-east and south-west elevations to 'Stores 1 to 4' are all true and in good condition.
- 2.5.4 To 'Store 5', the rear 700mm high concrete blockwork dwarf wall with re-inforced concrete columns (185mm square) display no signs of cracking or deterioration.
- 2.5.5 Similarly, to 'Store 5' the front timber columns (bitumen painted and 155mm square) set in concrete display no signs of deterioration. It is understood though that a new masonry wall will be built to the south-west elevation of this barn.

2.6 BARNs 2: INTERNAL INSPECTION

- 2.6.1 There are no signs of structural cracking/ structural defects to the interior of 'Stores 1 to 5'.
- 2.6.2 The roof is of traditional timber construction with rafters supported by purlins with collars. There are no signs of roof-sag to 'Barns 2'.
- 2.6.3 It is understood the whole of the roof is to be replaced to 'Barns 2', with 'Stores 1 to 4' recovered in clay pantiles and 'Store 5' recovered in a lightweight corrugated sheeting to retain the existing agricultural aesthetic of these barns.

2.7 BARNs 2: CONCLUSIONS & RECOMMENDATIONS

- 2.7.1 The structural condition of the barns is very good with no major remedial repairs or major re-building being necessary.
- 2.7.2 Our inspection did not include any investigation of the existing foundations.
- 2.7.3 It is understood the roof as a whole is to be replaced as part of the conversion works.

3 SUMMARY

- 3.1.1 Provided the above comments are taken into account, we are of the opinion that the existing external walls to Barns 1 & Barns 2 are suitable to be retained without major rebuilding or demolition being necessary.
- 3.1.2 We conclude therefore that these buildings are structurally suitable for conversion.