

ANTHONY-JOHNSON

Consulting Engineer Ltd

Site Address:

Harrington Hall Farm
Holbeach
PE12 8NW

Overview:

It is proposed that an existing barn structure be converted to residential use. The purpose of the survey was to therefore consider the condition of the structure and its suitability for conversion with limited alterations and without introduction of additional structural elements.

Exterior:

The existing structure is single story, formed of brickwork to external elevations with a duo pitch roof formed of concrete pan tiles laid to falls and concrete ridge tiles. The roof structure is noted as being intact, functioning as originally intended and lacking any defects. The roof structure is served by a series of uPVC rainwater goods that are fixed to uPVC fascia boards to the perimeter of the structure.



Image 1.0: external view of Barn structure

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All rainwater goods appear intact and functioning as originally intended with down water pipes evident throughout.

Brickwork the exterior appears in good condition with no significant defects evident. Brickwork has been laid with a Common bond to coursing, indicating a solid 9 inch masonry wall. Openings are provided with header bricks set as soldier courses, suitably arched to form brick lintels.



Image 2.0: View of Structure with Fig tree to elevation. Pit at corner return of building allowed for partial inspection of foundations.

Brickwork throughout was noted as running straight and true with no bellying or vertical deviation. Weathering to external faces was found to be limited and limited loss of mortar was evident reflecting a structure that has been suitably maintained.

Partially exposed foundations were found to extend down a minimum of 4 brick courses below ground level. The lack of excessive movement in external elevations, coupled with the age of the building indicates that the structure is suitably founded with adequate depth and width to external elevations.

Interior:

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Part of the structure had already been converted to former office space serving the farm and this was found contain uPVC glazing with suitable finishes reflective of a structure that likely meets current building regulations. The remaining barn structure incorporates original glazing and doors.



Image 3.0: External view of section previously converted.

Internally to the converted section of the barn the prior office space is fully lined with plasterboard set to internal faces of the original masonry. The depth of walls is indicative of dry lining having been added, likely with sufficient insulation to exceeded current regulations.

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Image 4.0: Deep walls to converted section of barn.

The roof structure to the office space has previously been replaced with factory formed gang nail trusses. A suitable breathing membrane is set to the head of the trusses and insulation has been laid between trusses to the head of the ceiling with a depth that is likely commensurate with current regulations.

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Image 5.0: Internal view of attic void, with breather membrane to gangnail trusses. Insulation clearly visible in image

A shower cubicle and toilet are already incorporated within the converted section of the barn with the shower having been introduced as a health and safety requirement so as to meet employee regulations associated with the former use of the barn structure. The presence of sanitaryware indicates the existing presence of suitable drainage and treatment facilities to site. Similarly, the presence of offices indicates the presence of electrical supply.

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Image 6.0: View of Facilities to converted section of barn

Internally, the offices have been subdivided with non-loadbearing stud partitions and their removal and relocation would be of no detriment to the overall stability of the existing structure.

The finished floor to the office has been formed of concrete and is currently overlain with tiles and carpet . A suitable threshold is clearly present and the previously altered structure requires no structural work to allow for conversion to residential use.

The remaining un-converted section of the barn is noted as having a concrete floor cast internally with the floor being intact and in good condition with no deviation, undulations or cracks present. The ceiling to the barn has been covered with a plasterboard and exposed timbers forming intermediate trusses within the barn structure are noted as being in good condition with no deflection or deterioration to the timbers.

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Image 7.0: View of barn structure with concrete floor

Timber sections are considered robust and suitably formed, set to the head of a blockwork course running the perimeter of the barn. The ceiling to the barn is vaulted with plasterboard rising up to the underside of existing rafters. The plasterboard was noted as being in good condition with no cracks, deflection or deterioration evident.

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Image 8.0: View of ceiling to unconverted section of barn structure

Lintels to the head of openings within the barn structure are formed from timber and these are noted as being robust with no deflection or deviation evident. End bearing of the timber lintels appears sufficient with no crushing or cracking of brickwork directly below the lintels.

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Image 8.0: Timber lintel set to head of sliding door opening into barn

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Conclusion:

On the basis of the above observations, it is considered that the structure is suitable for conversion to residential use. There is no requirement for the introduction of additional structural elements to the existing building so as to make it suitable or safe for residential use.

The proposed structure may incorporate all existing structural elements, including the concrete floor all masonry elevations the hand cut timber roof, associated trusses and existing timber lintels.

The structure is noted as being in very good condition , suitably maintained, robust and sound.

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