PCC Consultants

The Annexe,
11 Meadow Lane,
South Hykeham,
Lincoln LN6 9PF

T 01522 695 540
E petercole@pcoleconsult.co.uk
www.pcoleconsult.co.uk

Mr Paul Tidswell
J A Tidswell Ltd
Ferndale Farm
Bird's Drove
Gosberton
Spalding
PE11 4BE

4 September 2025

Dear Mr Tidswell,

Re: 11248. Structural Appraisal of Barn at Ferndale Farm, Bird's Drove, Surfleet, Gosberton, Spalding, PE11 4BE









Executive Summary

Following my inspection of the barn at Ferndale Farm, I can confirm that the structure is fundamentally sound. The walls, roof truss, purlins and supporting lintels are all performing satisfactorily, and the only defects identified are minor and of a cosmetic or maintenance nature. On this basis, it is my professional opinion that the building is suitable for conversion to a residential dwelling without the need for significant structural alteration.

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Registered Office: Holly House, Meadow Lane, South Hykeham, Lincoln LN6 9PF

General Description

The barn has an internal footprint of 5.81 metres by 14.73 metres. The external walls are constructed in brick and blockwork, with fair-faced blockwork to the north, east and west elevations forming the external skin, and rougher brickwork formed "overhand" to the south. Internally, the walls are fair-faced brickwork and are in good condition. The building is roofed with corrugated asbestos cement sheeting supported by steel-angle purlins, which span between a primary steel truss (spanning front to back) and the external walls. The truss itself runs in the long direction of the building, with a clear span of approximately 14.8 metres.

Walls and Masonry

The masonry walls are generally straight and true. The fair-faced internal finish indicates that the building has not been subject to significant water ingress or structural movement. Agricultural buildings of this age often exhibit areas of patch repair or localised distortion, but none of these issues were observed. The variation in finish between the fair-faced blockwork and the rougher external brickwork is consistent with agricultural construction practices where durability and expediency were prioritised on non-prominent elevations.

A small number of vertical cracks were observed on the external block masonry. These are typical of shrinkage movement arising during drying and do not extend to the internal brick masonry. They are not associated with foundation movement or settlement. In structural terms, such cracking is regarded as minor and can be addressed by straightforward cosmetic repair. Importantly, there is no evidence of subsidence or differential settlement in the walls or foundations.

Roof Structure

The single steel truss spanning 14.85 metres provides the principal support to the roof. Its proportions and condition indicate that it is well capable of carrying the roof loads imposed. There was no evidence of bending, twisting, local buckling, or joint distress in the truss. The steel purlins are securely seated and carry the corrugated asbestos cement sheets without signs of overloading.

Surface corrosion is present on the truss and purlins, but this is light and superficial. It is a common finding in unheated agricultural structures where unpainted steel has been exposed to condensation and airborne moisture over time. The corrosion can be effectively controlled by wire brushing and recoating with a protective paint system, which will ensure long-term durability.

The corrugated asbestos cement sheeting, while not forming part of the structural frame, has served as the weathering layer since construction. Its survival without

widespread cracking or failure indicates that the roof has not been subject to significant deflection or stress. Any future conversion will, of course, require that the asbestos cement material is managed in accordance with Health and Safety Executive (HSE) regulations, but from a structural perspective it does not compromise the integrity of the supporting frame. It is anticipated that the corrugated asbestos sheeting would be replaced with insulated paneling.

Openings and Lintels

The barn contains a number of door and window openings. On the north elevation, three windows are each spanned by precast concrete lintels. These are straight and free from cracking, confirming that they continue to perform adequately. The south elevation contains a door opening with a concrete lintel and an upper window. Both remain structurally sound. The satisfactory performance of these lintels, some of which have been in place for many decades, is further evidence that the walls have remained stable.

The east elevation includes a steel beam supporting masonry above the main entrance. While this beam exhibits surface rusting, it retains full structural capacity and can be restored to a durable condition with routine cleaning and repainting.

Internal Condition

The barn floor comprises a concrete slab. In the recessed perimeter zones, the slab is approximately 225mm below the damp-proof course, while elsewhere it is approximately 150mm below. This arrangement provides good separation between ground moisture and the wall base. Although the floor exhibits minor level variation, this is common in agricultural slabs which were never intended for precision finishes, and does not reflect foundation movement.

Conclusion

On the basis of my inspection, I am satisfied that the barn is structurally sound. The walls, trusses, purlins and lintels are all performing satisfactorily, with only minor cracking and corrosion noted, neither of which detracts from the overall structural integrity. There is no evidence of subsidence, foundation weakness, or significant movement.

It is therefore my professional opinion that the barn is suitable for conversion to a residential dwelling without the need for significant structural alteration. Routine maintenance works, including repair of shrinkage cracks, cleaning and recoating of steelwork, and management of the asbestos cement sheeting in line with regulatory guidance, will be required as part of the conversion process.

Disclaimer

This report has been prepared following a visual inspection of accessible areas of the barn only. No intrusive investigations were carried out and no opening-up of concealed construction was undertaken. The report is therefore limited to the condition of those elements visible at the time of inspection. Foundations, subfloor conditions, buried structural elements and services have not been examined. While every effort has been made to identify structural defects, no liability can be accepted for matters which were hidden, inaccessible or outside the scope of the inspection.

Yours sincerely,



Peter Cole **BSc CEng MICE FIStructE**

For PCC Consultants Ltd