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**STRUCTURAL ASSESSMENT
OF
THE BARN AT WARREN FARM
SHORNE
KENT DA12 3ED**

CLIENT: MR GOZZETT

AGENT: GRAHAM SIMPKIN PLANNING LTD

DATE: OCTOBER 2021



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BARN AT WARREN FARM

1.0 BRIEF

We have been requested by the Client to carry out a structural appraisal of the existing building so as to establish its potential for conversion into a domestic dwelling. This report is primarily intended for ancillary information to be read in conjunction with the planning documents and does not constitute a full summary for Building Regulation purposes.

2.0 EXPERIENCE

Trevor Cossey has over 40 years of experience as a structural engineer and has carried out structural assessments and surveys of both new and historic buildings throughout the South East. Throughout his career he has concentrated on work associated with building conversions and upgrades and brings a sympathetic approach to his work with older structures. Trevor's qualifications are as follows: BSC (Hons) C Eng, MStructE.

3.0 DESCRIPTION

The barn is a single-storey, steel-framed enclosure under a pitched, sheeted roof. The frames are on a 4.0 metre grid and clear span 5.9 metres. With reference to the geological map for the local area ground conditions should be favourable comprising clay head over chalk.

4.0 FINDINGS

For ease of reference each item of the building will be considered in turn and salient points noted in relation to condition and possible need for repair.



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4.1. ROOF

The roof comprises 70 x 70mm steel angle purlins at approximately 1500mm centres clear spanning 4000mm between main frames/trusses. From structural load/span tables these sections are adequate for the existing and proposed loads. The corrugated fibre cement sheeting is generally in acceptable order and can be retained. However, between grids E-F/1-3 and D-E/2-3 the sheeting is missing and will require suitable attention.

4.2 SIDE WALLS

It is thought that the building was originally of a Dutch barn format with no side walls. However, over the years some lightweight timber framing and cladding has been introduced. In any conversion works the external walls will require upgrading to meet the requirements of the building regulations.

4.3 MAIN FRAMES

The main frames on grids A-F inclusive comprise 203 x 102 UB23 columns and trusses at 4.0 metre centres. The truss follows a typical fink arrangement utilising 50mm x 50mm angles and bolted connections. The condition of the steelwork is sound and only requires mechanical wire brushing and repainting. From check calculations the member sizes appear adequate for the current and proposed loadings.

4.4 GROUND FLOOR

At present there is no slab in place so in any conversion works a new oversite concrete slab is required together with damp proof membrane, insulations, and finishes.

4.5 FOUNDATIONS

A single trial hole was inspected and the column foundations appear to be of a traditional 1.0 metre cube of concrete which is structurally adequate for the applied loads. It is not considered that any upgrading works will be necessary in the future.



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5.0 METHOD STATEMENT

In any proposed conversion it is anticipated that a suitably experienced contractor who has prior experience of similar conversions is engaged. The method statement will be produced by the contractor but approved by all interested parties. The fundamental approach to a project of this nature is to ensure the temporary and long term stability of the buildings while the work is underway. The need for temporary supports, suitable sequences of work, and consideration of the existing building elements is paramount. The project will be a team effort to achieve a successful outcome and the present involved parties are suitably qualified to achieve this end.

7.0 CONCLUSIONS AND RECOMMENDATIONS

As previously stated, the purpose of this report was to establish whether the existing building could be converted for domestic use and qualify such conclusions with details of general repair. From our observations we are of the opinion that the proposed conversion is a viable undertaking and that the building is sound and not in need of major reconstruction and can remain standing as existing throughout the construction process. The drawings produced to date, including the existing and proposed layouts can be considered as a logical and sympathetic use of a redundant farm building without involving any major or substantial reconstruction works. As with any scheme of this nature certain elements of the work will be required to meet the building regulation requirements, but these will be primarily concerned with finishes and insulations.

Trevor Cossey BSc (Hons) C Eng. MIStructE



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