



CONSULTING ENGINEERS LTD

**STRUCTURAL ASSESSMENT
OF
BAYTREE FARM
OTFORD LANE
HALSTEAD TN14 7EF**

CLIENT: MRS PEARMAN

AGENT: MADGWICK & DOTTRIDGE

DATE: SEPTEMBER 2021



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BAYTREE 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 unit. This report is primarily intended for ancillary information, to be read in conjunction with the Planning Application and does not constitute a full summary for Building Regulation approval.

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 building is a brick-built, single-storey enclosure under a pitched, sheeted roof. The area is split into three distinct areas: the main barn between grids 1-2, A-B, with side additions on two elevations. With reference to the local geological map for the area ground conditions should be favourable comprising clay with flints overlaying chalk.

4.0 FINDINGS

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



4.1 ROOF

The main roof between grids 1-2 and A-B comprises 100mm x 50mm C24 rafters at 500mm centres spanning from eaves to ridge level with intermediate purlin support. The purlins are 150mm x 75mm and run the length of the building with collar supports at 1200mm centres. To prevent roof spread steel cross tie bars have been provided at approximately 1600mm centres. The timber is in good order as is the roof covering and from check calculations the member sizes are adequate from existing and proposed roof loads. There is little need for any upgrading works at present.

The side roof over the garage (grids B-C and 1-2) is of a mono-pitched format comprising an irregular grid of 100 x 50 C24 rafters/purlins support the roof finishes. In any conversion works some rationalisation of the installation will be required to comply with the Building Regulations.

The rear mono-pitched roof between grids 2-3 and A-B has internal finishes so the only item of structural interest is the presence of two large timber beams as indicated on the attached plan. The roof is in good order and there is no evidence of water ingress or any degradation. In any conversion works it will be necessary to strip out the internal finishes so that the structure can be fully assessed.

4.2 WALLS

The internal and external walls are a mixture of clay bricks piers with infill blockwork. The piers are 330mm x 330mm and the standard walling 105mm. Both externally and internally the masonry is in sound order requiring very little attention. Externally some of the render finish has blown out and will require attention.

There is a dpc in position and there is no evidence of any past or current structural movement.

Within any potential conversion works the structural adequacy of the masonry is adequate but consideration will need to be given to upgrading to meet insulation values required by the Building Regulations.



4.3 FOUNDATIONS

A number of trial holes were excavated revealing traditional concrete spread foundations, 600mm wide and 700mm in depth founded on stiff, sound clay. These foundations are suitable for any proposed conversion works without the need for any upgrading works.

4.4 GROUND FLOOR SLAB

There is a substantial concrete slab over the entire area of the building estimated to be 150mm thick, which can be retained for reuse or overcast to suit.

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.

6.0 CONCLUSIONS

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



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and sympathetic use of a redundant farm building without involving any major or substantial construction 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 concerned with finishes and insulation.

Trevor Cossey BSc (Hons) C Eng. MIStructE