DAVID PARTRIDGE LTD

CHARTERED ENGINEER

B.Eng., C.Eng., M.I.C.E.

REPORT ON **FORMER STABLE BUILDING,**
COTSWOLD HOUSE,
CHEDWORTH,
GLOUCESTERSHIRE

JOB NUMBER **23 / 196**

CLIENT **Mr and Mrs M Langley**

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1.00 PREAMBLE

The Former Stable Building lies on gently sloping north to south land just to the rear, north west corner of Cotswold House. It is located approximately to the east of the village of Chedworth.

The 'site' comprises a detached, single storey building which is rectangular on plan with the longer axis orientated east to west. [Plate A].

The purpose of this document is to inform the condition of the primary loadbearing elements of structures and to advise if it is suitable for conversion into residential accommodation without requiring significant repair and extension over the appropriate design life considered to be sixty years. Its most recent and, apparently, only use has been for agricultural purposes but it is now not used.

The inspection of the building was made on 22nd February, 2023 by the Principal of this Practice, David Partridge B.Eng.[Hons]., C.Eng., M.I.C.E., who is also the author of the document. My experience of this type of appraisal extends over thirty five years in Private Practice covering all types of agricultural buildings.

2.00 STRUCTURAL FORM and CONDITION

The structural form of the building is very typical of this age and previous function of agricultural building comprising a cut timber duo-pitched roof spanning the narrow width and timber studding perimeter walls. There are several original internal timber studding cross-walls.

ROOF

The structural form of the felt clad roof is a series of timber boards spanning the length of the building on to the gable walls between which are fabricated timber trusses. [Plate B]. The boards are tightly abutted together. The trusses are supported in the rear wall on steel brackets bolted to both the truss rafter and the top of a timber stud which is aligned exactly below the rafter. [Plate C]. In the front wall the truss is supported on a vertical timber bracket bolted to a timber stud. [Plate D].

The ceiling chords of the trusses connect with their rafters at the front wall position but at a distance of about 700mm inside the rear wall – the rafter tie connection is made with a vertical bolt and a timber gusset screwed to each side of the joint. [Plate E].

It is clear that the majority of timbers in this roof are original with little to no replacement.

Condition :

- The lining boarding supporting the felt finish is without damage from water penetration especially at the ridge and eaves which are the most vulnerable locations in every building.

- The trusses show no vertical deflection along their length, no timber splitting at any of the joints and no compression on their supporting timbers at each eaves location.

EXTERNAL WALLS

The walls comprise a series of vertical timber stud spanning from ground floor level to eaves. Horizontal boards span between the studs on all elevations; they are tightly abutted together. [Plate C]. The openings in the front, south elevation are simply formed with studs each side. The studs are supported on a timber 'sole' plate fixed to the top of the brickwork masonry sub-structure. [Plate F].

Condition :

- All walls are significantly vertical and free from distortion.
- There is evidence of some VERY local open joints and moisture penetration but nothing too serious.

FOUNDATIONS

Plate A [front SW corner of the building] indicates that the timber frame sole plate is supported on a brickwork masonry sub-structure as outlined in the External Wall description. This strongly suggests that the foundations comprise a perimeter trench of concrete taken down to stable subsoil. The alternative and quite typical, but less robust foundation solution in this situation would be a flat slab of concrete off which would be built the walls – however, this alternative is unlikely to exist because brickwork masonry is seen disappearing below floor slab level and therefore most likely down to a concrete trench.

Condition :

- Investigation of the foundations was not warranted because of the total absence of structural distortion or distress in the four structural walls.

3.00 CONCLUSIONS

The condition and integrity of the component parts and their connection details of this roof are such that it has sufficient integrity and strength to adequately sustain its own weight, and any future wind and snow loads imposed upon it. Some minor upgrading may be prudent because of the nominal additional loading to be applied from insulation and ceiling linings.

In addition, the soffit boarding creates significant and appropriate lateral resistance.

The size of timber studs in the perimeter walls is sufficient to comply with the minimum slenderness requirements of the Code of Practice for Timber Design [BS5268] and a simple calculation concludes that they will sustain lateral wind and vertical roof loading.

The primary loadbearing structural elements of the building can be retained to allow the proposed change of use into residential accommodation without significant repair or extension and be serviceable with 'normal' levels of maintenance over a sixty year design life.

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29th August, 2023

APPENDIX 'A'

STABLE BUILDING, COTSWOLD HOUSE

PLATE A -- GENERAL VIEW FROM SOUTH WEST

PLATE B -- OVERALL STRUCTURE

PLATE C -- METAL PLATE SUPPORT FOR TRUSS AT REAR WALL

PLATE D -- TRUSS SUPPORT AT FRONT WALL

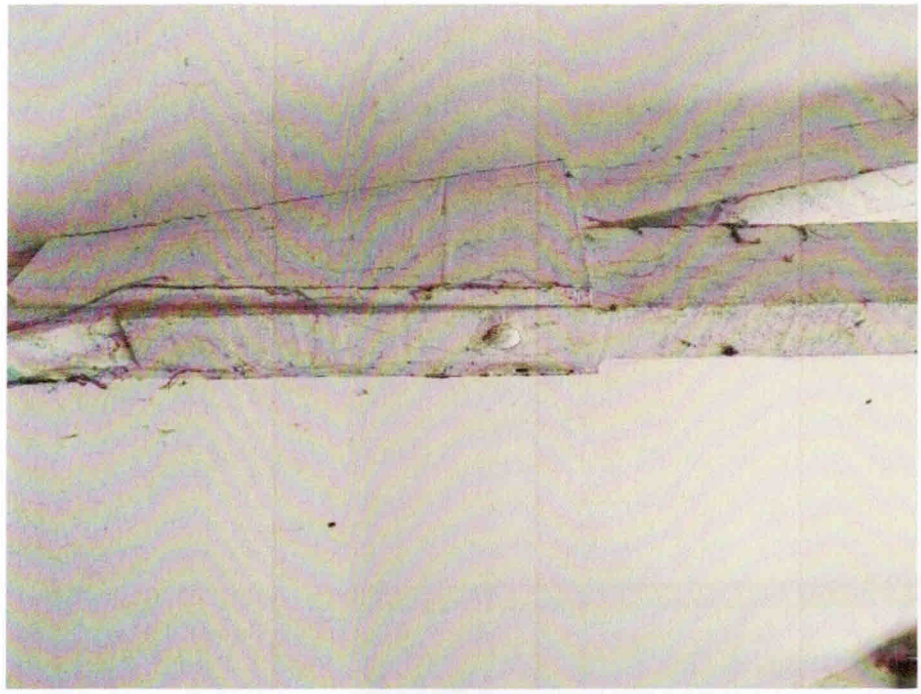

PLATE E -- RAFTER / TIE CONNECTION ON REAR ROOF SLOPE

PLATE F -- WALL SOLE PLATE ON SUB-STRUCTURE MASONRY