



CONSULTING ENGINEERS LTD

**STRUCTURAL ASSESSMENT
OF
BRIMSOLE FARM
MEOPHAM**

CLIENT: MR THOMPSON

AGENT: OPEN ARCHITECTURE

DATE: FEB 2023



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BRIMSOLE 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. MIStructE.

3.0 DESCRIPTION

The barn is a single-storey, timber-framed structure under a pitched, sheeted roof with main frames at approximately 3.3 metre centres. The side walls are clad in metal sheeting beneath which there are brick walls in most locations. To one end there is a single storey attached enclosure formed from block walls with a simple roof installation.

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 main roof is of corrugated fibre cement sheets carried by timber purlins on a 1200mm grid which in turn span onto the main frames. The condition of the sheeting and purlins is considered acceptable but in any proposed conversion scheme it is recommended that the purlins are upgraded to accommodate the increase in roof load.

4.2 SIDE WALLS

The frame provides the main structural support which carries timber vertical studs and cladding rails between grids 1-7 inclusive. Beneath the sole plates 215mm masonry is present in most locations. Some local repointing will be required and possible replacement in some locations together with the installation of a dpc. Corrugated metal sheeting forms the envelope all to a reasonable standard.

4.3 MAIN FRAMES

On grids 2-6 inclusive main frames are provided comprising 100 x 100 timber columns on grids A and B with triangulated trusses to the roof zone integrated with knee bracing to achieve frame action. On the centreline (grids A/B) there are central 100 x 100 timber posts providing mid-span support (see attached). From preliminary analysis the frame/truss is of acceptable strength to carry the existing load but it is recommended that some upgrading work is carried out in the future to enable the proposed increase in roof load to be accommodated. On grids 5 and 6 the central post support on grid A/B is missing and should be reinstated.

4.4 GROUND FLOOR

At present there is a substantial concrete slab in place which can be retained, reused, or overcast to suit.



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4.5 FOUNDATIONS

At present no trial holes have been formed but from visual inspection there is no evidence of structural movement associated with foundation issues which is encouraging on such an old building. However, it is recommended that in due course the existing foundations are accurately assessed and a suitable specification produced for any upgrading works considered necessary.

5.0 SIDE PROJECTION

Between grids B-C a single-storey blockwork enclosure is present with a timber framed roof structure covered in corrugated fibre cement sheeting. The 100mm x 50mm timber framing and small catslide to the front elevation is in good order and requires little attention. The concrete slab can be reused in any conversion works but the walls will require upgrading to meet modern building regulation requirements. Existing foundations will require inspection in due course.

6.0 MEZZANINE FLOOR

Consideration is being given to a lightweight mezzanine floor comprising of timber joists, steel beams all carried by discreet box section columns. The structure can be made fully independent from the existing structure and the new columns carried off the existing slab. However, some attachment to the existing structure could be achieved if required from a planning point of view. The existing columns, both internal and external have adequate capacity to accommodate additional load.



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7.0 **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.

8.0 **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. The primary structure of the building may be retained without any upgrading.

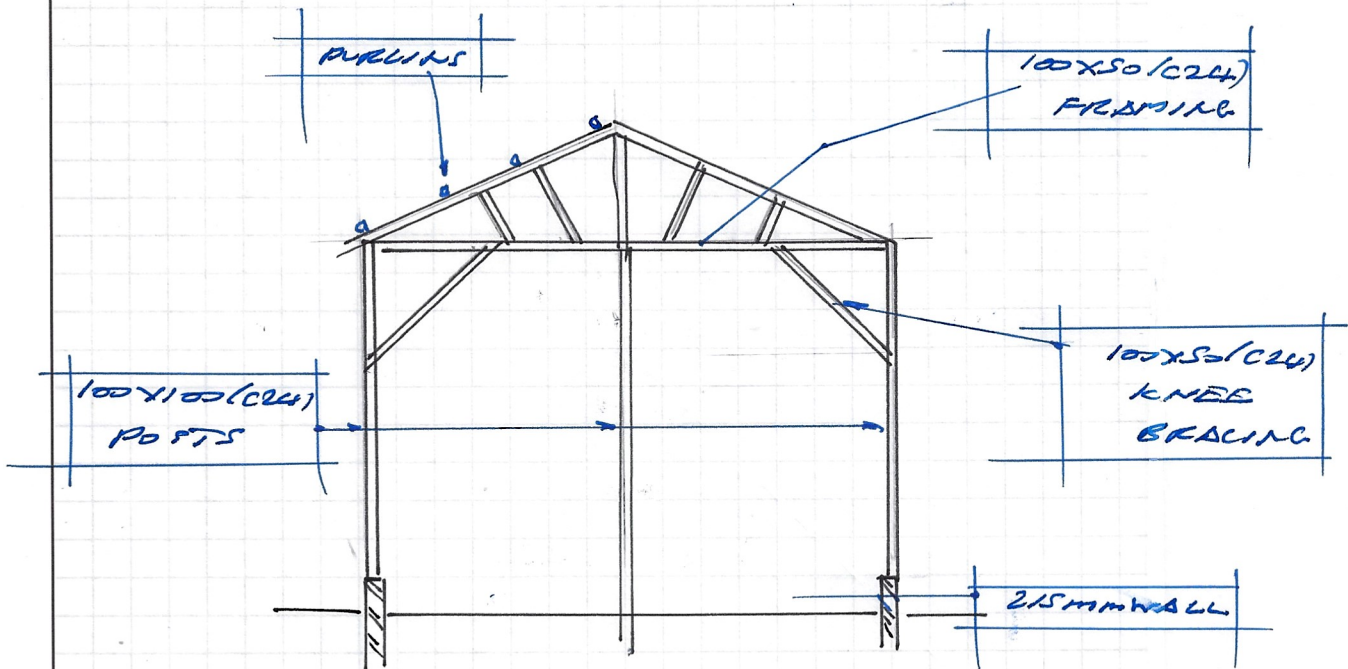
Trevor Cossey BSc (Hons) C Eng. MStructE



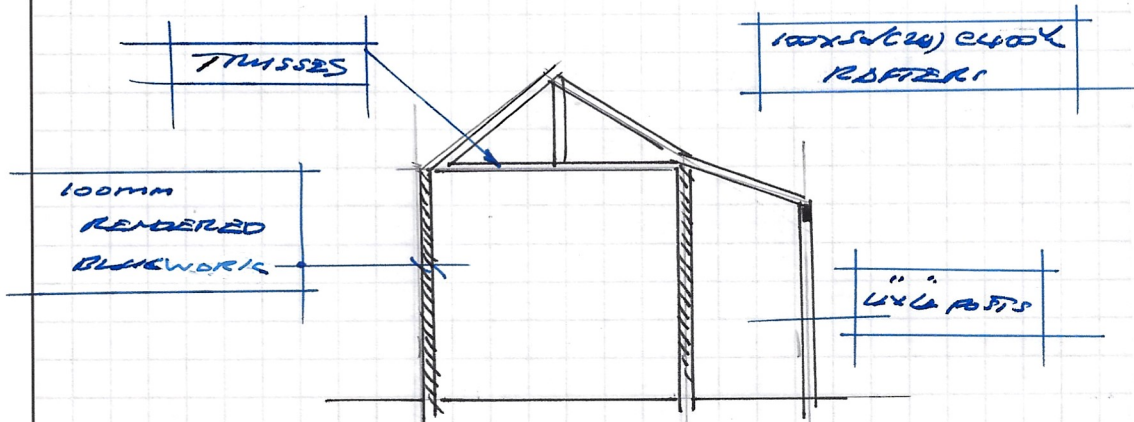
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GRIMSOLE FARM



MAIN TRUSSES ON
GRIDS 2-6



BUILDING GRID B-C



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BRIMSOLE FARM, MEOPHAM

CLIENT **OPEN ARCHITECTURE**



SHEET 2 OF 3
DRAWN AutoCAD
SEE ALSO
16807 TO 16809/22

SCALE 1:50
SURVEY JOB No. 12809
SURVEYED - NOV 2022

16808
22

STANDARD REFERENCE

DATUM USED - ORDNANCE SURVEY OSBM 15 TH GPS
BENCH MARKS USED - OSBM 02 TH GPS

SITE BENCH MARKS ESTABLISHED - SURVEY STATIONS (SEE PLAN)

SURVEY STATIONS INDICATED THIS
PROJECTION - OSBM 15 TH GPS (Scale factor not applied)

ABBREVIATIONS

ACU	AIR CONDITIONING UNIT	KO	KERB OUTLET	RVP	RAIN WATER PIPE
CL	COVER LEVEL	L	LIGHT	SC	STOP COCK
C	EARTH POINT	LP	LAMPPOST	SL	SUMP LEVEL
ECP	ELECTRICITY CABLE PIT	MH	MANHOLE	SP	SOIL PIPE
EP	ELECTRICITY POLE	MS	SERVICE MARKER	SV	SLUICE VALVE
FH	FIRE HYDRANT	NB	NOTICE BOARD	TCD	TELEPHONE CALL BOX
FL	FLOOR LEVEL	NFI	NO FURTHER INFORMATION	TIC	TELEPHONE INSPECTION COVER
G	GULLY	OSBM	ORDNANCE SURVEY BENCH MARK	TP	TELEPHONE POLE
GC	GAS COCK	P	POST OR PILLAR	UTL	UNABLE TO LIFT
GV	GAS VALVE	RE	ROBBERING EYE	VP	VENT PIPE
IC	INSPECTION COVER	RG	ROAD GULLY	WD	WASH OUT
IL	INVERT LEVEL	RS	ROAD SIGN	WM	WATER METER

