

STRUCTURAL REPORT - PLANNING

THE BLUE CROSS

CHILTON CROSS, TIVERTON

EXISTING BARN BUILDING



DOCUMENT No. A0238-W-0005-A

CLIENT: PRESS PROPERTIES LIMITED

REPORT BY: ANDREW OLIVER

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Revision	Date	Notes	Prepared	Checked
A	11/05/23	For information	AMO	AMO

1.0 Introduction

X-Consulting Engineers Ltd were appointed to undertake a structural inspection on the building highlighted below. This report is for planning purposes to comment on the suitability of the building for conversion.



Above: Barn building highlighted red.

A sketch of the structural arrangement is provided at the rear of this report.

This report was undertaken by Andrew Oliver, Chartered structural engineer (CEng, MEng, MStructE) for and on behalf of X Consulting Engineers Limited.

2.0 Exclusions and limitations

This is an appraisal report for suitability for conversion for planning purposes and does not provide construction status information. We have only provided comment on structural items available for visual inspection at the time of survey. When commenting on such items as non load bearing walls, this information should not be relied upon for Construction and demolition purposes.

This report has been produced for the benefit of the named Client and is not for distribution or use by any other party. We have only commented on structural items.

3.0 The Existing Structure

3.1 The Structure

The existing building is rectangular on plan with a duo pitched roof and mono pitched lean too area to the North elevation.



Above: Barn building

Within the main two storey element vertical loads are transferred at roof level from the roof via timber rafters supported on purlins and timber raised collar trusses.

Vertical loads are supported at first floor level by timber joists and load bearing stone / cob walls transferring forces to the ground below.

Lateral stability is provided by diaphragm action at roof and first floor level transferring forces to shear perimeter walls.

3.2 Roof / frame

The two storey roof is slab in tiles and the single storey clad in suspected plastic sheeting. Both forms of roof covering are in good condition.

The two storey roof is supported on a series of timber rafters. These timber rafters are in good condition. Rafters are supported on timber purlins in turn supported on timber trusses. The purlins are also in good condition and all can remain as part of the converted scheme.



Above: Timber rafters on purlins on trusses

The trusses are raised collar scissor trusses. It is likely that the bottom chord will need to be raised in order to achieve greater head room to the first floor. Alternatively a ridge beam could be installed and the collars removed altogether to achieve a fully cut roof.



Above: Raised collar scissor trusses

The trusses are in good condition. Trusses bear directly onto the stone / cob perimeter walls.

3.3 Walls

The perimeter walls are assumed to be a mix of stone and cob. Generally the walls are in good condition. In one location a crack was noted to the bearing of one of the roof trusses. The internal plaster finish to the walls should be locally removed so the crack be investigated. It is anticipated the worst case scenario will be to install helical crack stitching ties across the joint without the requirement for any major structural works.



Above: Crack under truss bearing at first floor level.

3.4 First Floor

The two storey part of the building has a timber mezzanine first floor level. The mezzanine is formed of timber joists spanning in plane with the building in turn supported on timber beams.



Above: Timber mezzanine viewed from ground floor.

The timber joists are in good condition. The supporting beams are in good condition. In order to comply with modern fire regulations it is likely the underside of the mezzanine will need to be plaster boarded. The joists are adequately sized to support the upgraded loads associated with these works.

3.5 Ground Floor

The ground floor consists of a solid concrete slab through out. No perimeter sub floor vents were noted and therefore it is considered that the slab is ground bearing.

4.0 Conclusions and Recommendations

- The roof cladding is in good condition and can remain as part of the converted scheme.
- The perimeter and internal walls are in good condition. A local remedial repair is likely to be required at first floor level to stitch a crack in the wall.
- The timber first floor mezzanine is in good condition and the joists appear adequately sized to support domestic loadings imposed by modern design codes of practice.
- No elements of the primary structure require replacement it is therefore our recommendation that the existing structure is capable of conversion to a domestic dwelling.

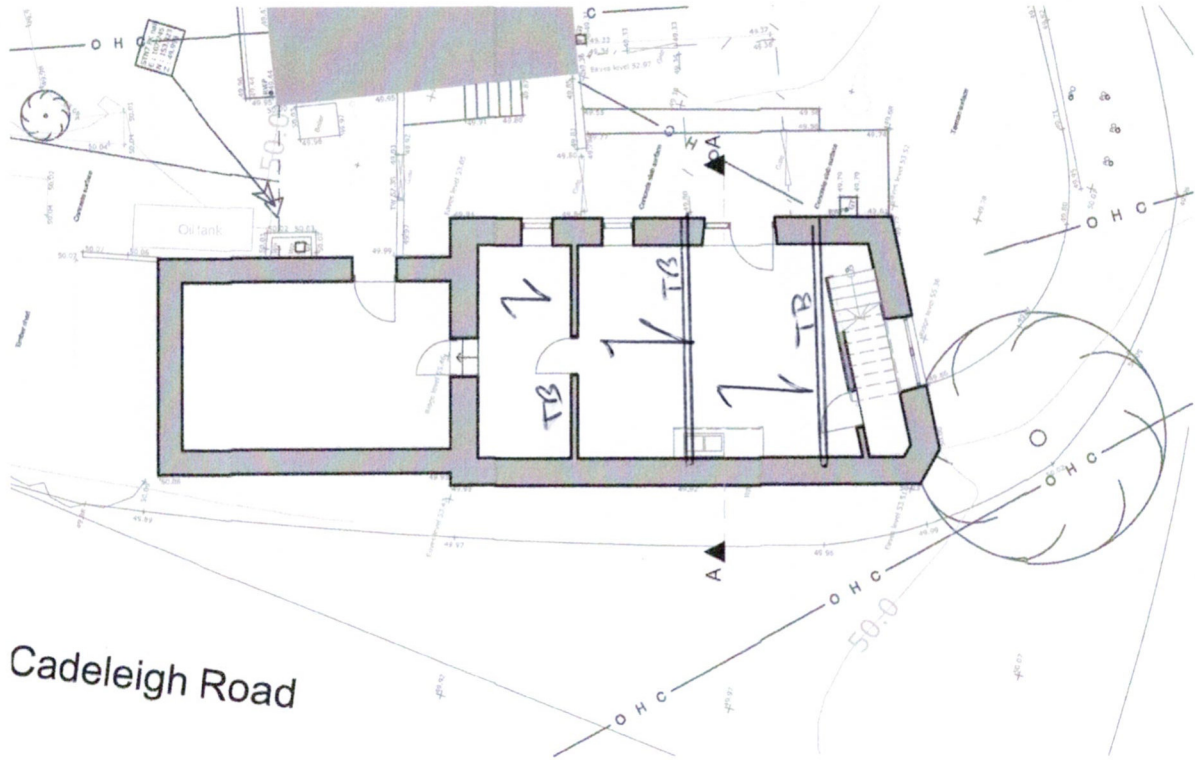
Report produced on behalf of XCE



Andrew Oliver - Director

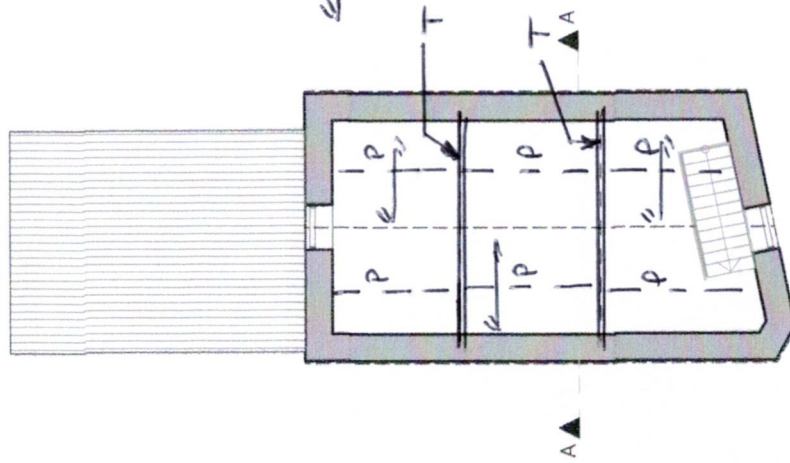
MEng (Hons), MStructE, Chartered Structural Engineer

XCE



Cadeleigh Road

GROUND FLOOR PLAN



P = timber Purlin
 T = RAISED COLLAR
 SUSSAN TRUSS
 ↳ = RAISED (TYPICAL)

↙ = 11" Floor
 JOISTS.
 TB = TIMBER BEAM.

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THE BLUE CROSS
CHILTON CROSS
TIVERTON
EXISTING PLANS
SCALE 1:100
DATE 29/03/2023
Su.03

NORTH

FIRST FLOOR PLAN

The contractor must verify all dimensions on site before making shop drawings or commencing work of any kind. Scale for planning purposes only.