

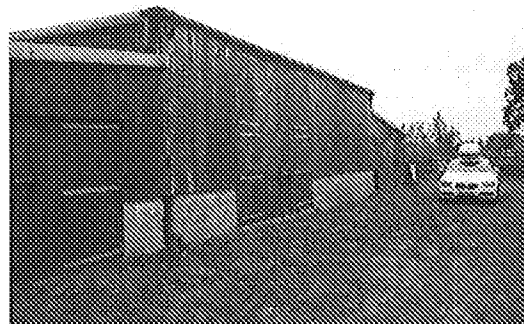
REPORT ON STRUCTURAL AND DRAINAGE MATTERS

PROPOSED BARN CONVERSION

**HOE BARN COTTAGE
HOE LANE
FLANSHAM
WEST SUSSEX
PO22 8NS**

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1.0 INTRODUCTION

1. Archibald Shaw were commissioned to undertake a superficial inspection and report on an existing barn in response to a requirement within Arun District Council's Pre-Application Advice to JJR Designs dated 2 June 2015, reference PAA/49/15.
- 1.2 This report includes comments following a non-intrusive inspection undertaken on Thursday 16 July 2015.
 - 1.2.1 The observations and comments contained within this report should be considered as preliminary, subject to further investigation and design as necessary.
- 1.3 The inspection was undertaken from ground level. No vertical access equipment was used.
- 1.4 Nothing in this report confers or purports to confer on any third party, any benefit or any right to enforce any term of this report pursuant to the Contract (Rights of Third Parties) Act 1999.

2.0 DESCRIPTION OF PROPERTY

- 2.1 The existing storage barn structure comprises three single storey rectangular mono-pitched 'wings' positioned on three sides of a taller rectangular mono pitched central section.
- 2.1.1 Existing wall and timber framework elements appear generally to be of good line and level with no obvious lateral or vertical distortion evident.
- 2.2 Mono pitch roofs comprise profiled metal decking supported on timber purlins.
- 2.2.1 Timber purlins are supported on twin timber rafter members spanning between circular section timber columns.
- 2.3 External wall construction generally comprises low level concrete blockwork masonry walls with vertical timber boarding above.
- 2.4 Lateral structural stability of the building is currently provided by diaphragm action of the roof structure transferring loads through a combination of racking resistance of wall structures and limited sway frame action of timber post and rafter mono-pitch frameworks, to ground level.
- 2.4.1 Existing timber columns located on external wall lines are coincident with and restrained by low level blockwork. This form of construction provides a measure of cantilever stiffness to the timber columns at their base parallel to the masonry.
- 2.5 A solid concrete ground floor slab is provided throughout the barn footprint.
- 2.6 Existing foundation provisions below timber columns and wall elements are unknown at this stage.
- 2.6.1 No structural defects symptomatic of adverse ground movement were noted during our inspection.
- 2.7 Generally the existing timber structural members would appear to be in a sound condition. Small areas of local decay were noted at the foot of two columns where visible, noting that access was restricted.

3.0 STRUCTURAL COMMENTS

3.1 Based on our site investigation and preliminary structural considerations we would confirm that the proposed plans and elevations presented on the JJR Planning Drawing No. 1230/101 could be progressed to construction without substantial structural works to the existing building.

3.2 We would anticipate at this stage, subject to further structural inspection and analysis, the following structural measures could be required.

- Local underpinning of existing timber column foundations.
- Remedial works to the feet of some timber columns. This may comprise the replacement of timber sections locally to approximately 150mm above ground level and replacing with galvanised steelwork support shoes.
- Developing in conjunction with the Architect, new external and internal wall constructions which provide adequate racking stability to resist lateral loadings.
- Strengthening as necessary the existing timber purlins and rafters to support new insulated roof coverings, subject to design development.

4.0 DRAINAGE COMMENTS

4.1 Hoe Barn Cottage lies on a slightly elevated part of the south coastal plain with ground levels in the order of 3.4m AOD, with local site levels falling slightly to the south east.

4.2 The barn lies within an area of open grassland, which receives rainwater directly from the barn roof. The barn is not served by a formal drainage system.

4.3 Geology

4.3.1 The site is underlain by Superficial River Terrace Deposits, and Bedrock formed of the Lewes Nodular Chalk Formation *et al.*

4.3.2 With careful design it is likely that local soils will be receptive to infiltration drainage systems.

4.4 Drainage Strategy

4.4.1 Foul Water

4.4.1.1 It is advised that foul waters are discharged to a local adopted foul water sewer subject to its location.

4.4.1.2 If connection to an adopted sewer proves impracticable, foul waters should either be discharged to the foul water system serving Hoe Farm Cottage, or alternatively be served by an independent foul water treatment system. The discharge of treated liquor into local subsoils would be subject to satisfactory infiltration rates, ground water levels and Environment Agency Consent.

4.4.2 Surface Water

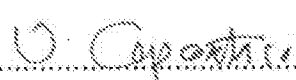
4.4.2.1 It is advised that proposed vehicular and pedestrian paving serving the new barn conversion be of permeable construction and be set at least 150mm below the proposed floor level.

4.4.2.2 It is advised also that roof water drainage is formed by a series of formal gutters and drainage pipes, with waters being discharged to dedicated local infiltration systems designed in accordance with National Planning Policy Guidelines.

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Date

06 August 2015