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VISUAL STRUCTURAL INSPECTION & SUBSEQUENT ASSESSMENT FOR PLANNING PURPOSES

THE HOME FARMHOUSE BAGENDON CIRENCESTER



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PREFACE

- a) This brief, preliminary report and/or opinion has been prepared for the specific purpose stated herein.

- b) The report has been prepared for the exclusive use of:

Jeremy Rigg, The Home Farmhouse, Bagendon, Cirencester GL7 7DY

- c) This document, or any part of this document, shall not be disclosed to any other persons except those specifically mentioned as follows:
 - a) Jeremy Rigg
 - b) Local Authority Planning Department
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1

INTRODUCTION

- 1.1 Marcia Figueiredo of David Smith Associates LLP has been requested to carry out a visual structural inspection and subsequent assessment of the existing agricultural buildings on land adjacent to The Home Farmhouse, Bagendon, Cirencester.
- 1.2 We understand that this structural inspection and assessment is in relation to a Planning Application for change of use from agricultural to residential usage.
- 1.3 We would confirm that the Visual Structural Inspection took place on Thursday, 22nd February 2024.
- 1.4 The weather conditions during our inspection were sunny with some cloud cover.

2 RESULTS OF VISUAL STRUCTURAL INSPECTION & SUBSEQUENT ASSESSMENT

2.1 In principle, the site comprises of 2No. agricultural buildings built next to each other. Typical details of the external elevations can be seen in Photographs in Appendix A. For ease of reference, the two buildings will be designated as Barn A and Barn B. The location of these respective barns can be found in Appendix B of this report.

2.2 Barn A

2.2.1 In principle, this is a one storeyed stone-built Barn with a fibre cement sheet duo pitch roof covering. Part of the rear elevation of the Barn is acting as a retaining wall to retain the field, which slopes towards the Barns. Typical details of the external elevations can be seen in Photographs 1 – 3 in Appendix A. Therefore, some form of tanking will be required as part of the change of use to residential accommodation. This is similar to the requirement for Barn B, along the rear elevation as well.

2.2.2 Generally, the stonework to the external elevations is in reasonable condition. However, there are areas where the mortar joints have degraded and localised cracking to the stonework was noted. There will, therefore, be a requirement for the stonework to be repointed with a lime putty mortar mix. Please refer to Photographs 4 – 7 in Appendix A.

2.2.3 Generally, the roof consists of fibre cement sheets (possibly asbestos) supported off timber purlins which span between ridge board intermediate canted purlins and the external walls. The purlins themselves span between the supporting stonework walls and intermediate timber truss. Please refer to Photograph 8 in Appendix A.

Therefore, as part of any conversion process, there will be a requirement to install ridge beams and rafters to support the new roof structure.

- 2.2.4 The flooring throughout the Barn is a concrete floor which is unlikely to be insulated. Please refer to Photograph 9 in Appendix A. There will, therefore, be a requirement that a damp proof membrane, insulation and a screed be incorporated as part of the Building Regulation process for this Barn as for Barn B. This is not unusual in Barn conversions of this type. This can easily be accommodated at the Building Regulation Application stage.

2.3 Barn B

- 2.3.1 In principle, this is a single-span portal frame structure with symmetrical duo-pitched roof. The roof system consists of sigma-section purlins supporting corrugated cement fibre sheets. There are 4No. sleeved purlins on each side of the roof ridge at maximum centre of 1.0m. The purlins have a depth of 110mm and a width of 70mm.
- 2.3.2 The frame structure consists of 4No. bays, 5No. frames spaced at approximately 4.5m. The portal columns / frames span approximately 7.6m. Plan roof CHS bracing was noted to one of the gable ends and vertical CHS bracing at the top middle of the second bay. There is also knee bracing providing longitudinal stability to this structure. Please refer to Photographs 10 – 12 in Appendix A.
- 2.3.3 The portal columns are constructed from 178 x 102 x 19 UBS. The portal rafters appear to be 152 x 89 x 16 UBS. The rafters have moment connection at the ridge and a haunch connection at the eaves. This provides the transverse stability to the structure.

2.3.4 The walls of the Barn are blockwork up to approximately 1.6m high. Above the blockwork, the Barn is clad with timber.

2.3.5 With regards to the existing concrete ground floor, our recommendation for Barn A will apply to this Barn as well.

2.4 Miscellaneous Items

2.4.1 With regards to Barns A and B, we would require that consideration will need to be given to carrying out the following miscellaneous items of work:

- Repointing of all stonework and blockwork.
- All timbers infested with woodworm to be treated or replaced.
- It is likely that new ground floor slab will incorporate a DPM and insulation in accordance with the Building Regulations. However, consideration should be given to providing chemically injected DPC to the perimeter loadbearing walls.


- New drainage from Bathrooms and Kitchen and to introduce services into the building.
- New guttering, rainwater downpipes and connections into existing or new stormwater drainage system.

3 **CONCLUSION**

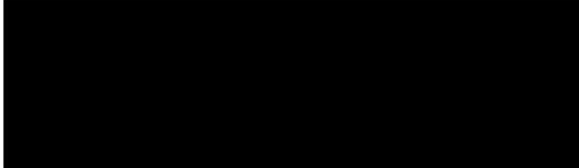
- 3.1 Following our Visual Structural Inspection and subsequent consideration, it is our opinion that these particular Barns have survived many years of usage. This has included withstanding significant storm periods, particularly the peak of the storms which occurred recently. They have easily withstood the significant snow loads that occurred over their life without any undue deformation or distortion. In addition to this, there is no signs of any significant misalignment, deformation or deflection of the structures as a result of being subjected to this loading.
- 3.2 From the above therefore, it is our conclusion that this barn is structurally strong enough to take the likely loading which it will be subjected to from its change to residential usage without any significant alteration or enhancement. Therefore it would comply with and satisfy the requirements of Class Q(b) and Q(1) (i)(i)(aa) for the change of use of an agricultural building to a dwelling house.

4 CERTIFICATION

4.1 We trust that we have interpreted your instructions correctly and that this report is satisfactory for your present requirements. However, should you require any further information or clarification, please do not hesitate to contact the undersigned.

Signed: 	Title: Structural Engineer
Name: MARCIA FIGUEIREDO	Date: 4 th March 2024

I certify that the staff who have prepared the above report are competent to carry out their duties and that they have used reasonable professional skill and care.

Signed. 

Eur Ing **David Smith** BSc(Hons), CEng, MICE, FStructE, CMAPS, MFPWS, FCABE, ACI Arb

4th March 2024
Date.....

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APPENDIX A

Typical Photographs



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12

APPENDIX B

Barn Location Plan



BARN A

BARN B