

CLASS Q & R REPORT



Civil & Structural
Design Engineers



GREAT RIDGEWAY FARMHOUSE, CHRISTIAN MALFORD

PROJECT REF. **26/60744**

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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 Ms Zoe Maculan.
- c) This document, or any part of this document, shall not be disclosed to any other persons except those specifically mentioned as follows:
 - a. Local Authority Planning Department.
 - b. Local Authority Building Control Department.
 - c. Any other party with the express written permission of Ms Zoe Maculan.
- d) This document is issued only to the persons stated above and on the understanding that this practice is not held responsible for the actions of others who obtain any unauthorised disclosure of its contents, or place reliance on any parts of its findings, facts or opinions, be they specifically stated or implied.
- e) It is a condition of this report that we have not inspected all woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that such parts of the property are free from defect.

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1. Introduction

- 1.1. Sandra Figueiredo of DSA LLP has been appointed on behalf of Ms Zoe Maculan to carry out a Visual Structural Inspection of the property known as the barn at Great Ridgeway Farmhouse, Christian Malford. We understand that this is in connection with a Part Q & R Planning Application for conversion to residential accommodation and flexible commercial use.
- 1.2. The visual structural inspection took place on Wednesday, 25 March 2026.
- 1.3. The weather conditions during our inspection: Sunny.

2. Results of visual inspection and assessment

- 2.1. The building is a single-storey agricultural structure of rectangular plan, used as a barn and most recently for agricultural storage. Please refer to Photographs 1 to 3 in Appendix A.
- 2.2. The building is primarily formed from precast reinforced concrete columns at regular centres supporting a lightweight steel roof structure and providing fixing points for the wall panels. Please refer to photograph 4 in Appendix A.
- 2.3. The elevations are a combination of precast concrete panel system, blockwork and profiled metal sheeting. Please refer to photographs 1 to 3 in Appendix A.
- 2.4. A smaller lean-to extension is attached along one side, formed from lightweight construction, which is proposed to be demolished as part of the development.
- 2.5. The roof structure comprises a series of lightweight steel trusses formed from circular hollow sections (CHS), supporting corrugated roof sheeting. The trusses span transversely between the supporting elements and are arranged at regular intervals along the length of the building. Please refer to photographs 4 & 7 in Appendix A.
- 2.6. At the junctions, steel gusset plates are provided to facilitate the connection of diagonal and vertical members to the primary chord members. The steel trusses exhibit surface corrosion, and we would recommend corrosion treatment and protection to all roof members. Please refer to photograph 7 in Appendix A.
- 2.7. It appears that defective concrete posts have been locally replaced with steel columns (approximately three). These appear to provide adequate vertical support to the roof structure. Please refer to photograph 8 in Appendix A.
- 2.8. The structure therefore comprises a hybrid structural system, in which the primary loadbearing framework is formed by precast concrete elements, supplemented by localised

steel members providing replacement and secondary support. Please refer to photograph 8 in Appendix A.

- 2.9. Several concrete columns exhibit signs of deterioration, including cracking, spalling and exposure of reinforcement. Please refer to photograph 9 in Appendix A.
- 2.10. The roof truss members are connected to the reinforced precast concrete post via a mild steel plate bracket positioned at the head of the concrete post and mechanically fixed to the post using bolted connection. Where the original concrete posts have been replaced with steel columns, the trusses appear to be simply seated onto the column heads. Please refer to photographs 11 and 12 in Appendix A.
- 2.11. The roof structure of the lean-to consists of timber members (purlins/rafters) supported by the main frame, with the corrugated roof sheeting fixed above. The main timber members are connected to the reinforced concrete posts via a steel plate bracket fixed to the post. Please refer to photograph 13 in Appendix A.
- 2.12. A steel moment-resisting frame is present at one gable, providing lateral stability in the plane of that elevation. Please refer to photographs 15 to 18 in Appendix A.
- 2.13. The opposite gable comprises a masonry blockwork wall extending up to approximately eaves level, providing the primary vertical and lateral support. Above this, the triangular gable apex is formed using a lightweight timber-framed infill, clad externally with corrugated steel sheeting. This portion appears to be loadbearing providing support to both roofs' purlins.
- 2.14. The precast panels installed between columns function primarily as infill elements and are not intended to carry primary vertical loads. However, they may provide a degree of lateral restraint, depending on the existing connection detailing. Please refer to photographs 19 to 21 in Appendix A.
- 2.15. The metal cladding is non-structural and serves solely as a weatherproofing layer.

- 2.16. Overall, the walls contribute minimally to the global structural stability of the building, which is primarily provided by the reinforced concrete precast posts, steel columns fixed to the ground slab, and masonry block walls where present.
- 2.17. The existing concrete ground slab appears to be in good condition and has previously supported agricultural vehicles. It is therefore likely to be suitable for residential loadings; however, a damp-proof membrane and insulation will be required to meet current Building Regulations. Please refer to photograph 4 in Appendix A.
- 2.18. Whilst no trial holes have been carried out to date, it is likely that the existing columns are founded on pad foundations, with the blockwork walls constructed directly off the existing concrete ground slab.
- 2.19. The existing structural frame appears to have performed satisfactorily over the life of the building from both a structural and durability perspective, having withstood wind, storm, and snow loading without any evident loss of overall stability.
- 2.20. No signs of differential settlement or subsidence of the columns or roof structure were observed. This indicates that the existing foundations are performing satisfactorily, and no underpinning or enhancement is anticipated to be required as part of the proposed conversion to residential accommodation and flexible commercial use.

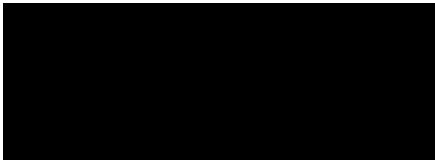
3. Conclusion

- 3.1 Following our Visual Structural Inspection and subsequent consideration, it is our opinion that this particular barn has survived many decades of usage. It has easily withstood the significant snow loads that occurred over its life without any undue deformation or distortion. In addition to this, there is no signs of any significant misalignment, deformation or deflection of the framing 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), together with Class R, for the change of use of an agricultural building.

4. Certification

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

4.2. Signed



SANDRA FIGUEIREDO

DSA

20/04/2026



5. Appendix A – Photographs

