RWA CONSULTING
CIVIL AND STRUCTURAL ENGINEERS
8 Station Approach, Wendover, Buckinghamshire, HP22 6BN
Tel: 01296 624924 email: engineer@rwaconsulting.co.uk

Report on

Conversion of Grain Store

At

Bonhams Farm
London Road, Holybourne
Alton GU34 4JA

For

Redbrown Limited

REPORT COMPILED BY: Robert M Wallbank BSc., C.Eng., M.I.C.E.
DATE: 29th April 2022
JOB REFERENCE NUMBER: RMW/14823/22

RWA CONSULTING

Redbrown Limited
Unit 1
Old Park Farm
Ford End
CM3 1LN

Our ref: RMW/tp/14823/letrep1A/22
Date: 29th April 2022

Dear Sirs

Re: Grain Store at Bonhams Farm, London Road, Holybourne, Alton GU34 4JA

Thank you for your instructions to comment upon the structural condition of the above property with specific reference to the requirement for a structural inspection in terms of loadings on existing foundations, the condition of principal structural components and any other structural implications of the renovation and conversion works. In accordance with planning rules, we confirm or otherwise that the buildings to be converted are of sound, permanent and substantial construction, and whether or not they will require extensive reconstruction.

My structural survey will cover the main structural elements of the main barn.

I confirm I undertook my inspection on Tuesday 8th February 2022.

Reference should be made to our standard terms and conditions regarding Structural Engineer's inspections, these are appended and form an integral part of this Report.

1.0 - General Description

1.1

The barn comprises of a steel portal frames with the main stanchions measuring 306mm by 165mm with an overall span of approximately 15.1 metres and the building length of 27.5 metres. The height to the eaves measures 4.2 metres and the height to the ridge is 6.1 metres, all measured from the solid concrete floor.

1.2

There are 7 portal frames each set at approximately 4.72 metre centres, but the forward frame may be an additional section to the build as there are double portal frames. The portal frames support horizontal steel beams which in turn support corrugated units that withstand the horizontal thrust of the grain storage.

1.3

Above this, the external cladding of the barn is a cement based corrugated sheet which is identical to that of the roof.

1.4

Part of the front and rear gables have been blockwork constructed up to the line of the cement based corrugated sheets.

1.5

The structure is entirely encompassed with robust cladding. The solid concrete floor continues throughout the structure, but has an upstand suspended floor for the grain storage with access panels that can be removed for cleaning.

1.6

Strip vents in the void are for grain drying. Thus, the structure can be removed back down to the main structural floor if required.

1.7

The outer support sheets and walling have been constructed on upstand concrete for lateral restraint against outward forces pushing the main frame and walls out.

2.0 – Structural Condition

2.1

An inspection of the steel columns and portal frames revealed no structural issues regarding corrosion or other defects that would otherwise compromise the condition of the building.

2.2

On the south east elevation there is a small blower storeroom constructed on an upstand plinth. It has been constructed off a reinforced concrete plinth base which supports the main structure. External to this is a further plinth that is serving no useful purpose. This structure is structurally stable and sound.

2.3

Along the right-hand flank there is a retaining wall in the courtyard to the main oak framed barn where the perimeter plinth supporting the lateral steels can be observed. There is no failure or damage to the retaining wall or the main concrete foundation and plinth.

2.4

There is no evidence of cracking or sway of the main structural frame which all appears to be very well braced.

2.5

The framework is extremely robust and designed for grain storage facilities therefore not only capable of supporting very high vertical loads, (snow and wind etc), but huge lateral loads from the grain storage of approximately 2.8 metres in height.

2.6

The building structure is extremely robust and significantly over designed for what an equivalent domestic residence would require.

2.7

In addition to the steelwork being very robust, the concrete floor is also over specified and designed in order to carry the weight of grain which is substantially more than the design capacity for domestic use.

2.8

Therefore, the slab and structural steel are more than adequate for conversion to residential use and any internal walls could be built off the slab without any requirement for additional foundations and these will be capable of supporting first floors if required.

3.0 – Comments and Conclusions

3.1

There are no structural works required to the building which currently forms a robust structural frame.

3.2

No works are required and the framework is robust enough to support the minor additional loads that insulation and plasterboard would add to the existing weight of the structure. Portal frames of this dimension and size are overdesigned for these minor additional loads as they would have been necessary to support agricultural loads such as hoists etc which would be far in excess of any domestic load would entail.

3.3

The concrete floor has been designed capable of carrying high dead loads. Thus the floor and structural frame are more than adequate for a domestic conversion with any first floor loads capable of being carried by the structural frame. Likewise, the floor is robust to take the load from any additional walls. All services required and additional insulation and plasterboard would be capable of being supported by the structural frame with no alteration, amendment or addition.

3.4

CLASS Q

In my opinion the main structural elements of the building represent a permanent and substantial construction and can be retained allowing for residential purposes without demolition or reconstruction of the main structural components. No repairs or replacement of components are needed to convert the barn and the barn is robust enough to accept internal finishes. The building is therefore structurally capable of conversion under Class Q Permitted Development guidelines.

Yours sincerely

Robert M Wallbank BSc., C.Eng., M.I.C.E.
rob@rwaconsulting.co.uk

NB This report is not a full or any other form of survey but is a specialist structural report on the items contained therein. Therefore no responsibility can be accepted for any other defects which are found in the property.

NB We have not inspected woodwork or other parts of the property or structure which are covered, unexposed or inaccessible and we are therefore unable to comment whether such parts are free from defect.

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TERMS AND CONDITIONS

1. The copyright of our Report remains vested with RWA Consulting Engineers LLP.

2. Our Reports are confidential to our Clients and RWA Consulting Engineers LLP and we do not accept responsibility to third parties to whom our Report, or any part thereof, is made known, without formal agreement beforehand.

3. Our inspection of a property is intended to provide the information set out in either paragraphs (a) or (b) below. Our reports will indicate the exact nature of our brief.
   (a) Specific advice on any structural problems which have been brought to the attention of the Engineer and which may also be the sole basis for commissioning the report. Examples of this are fractures to walls, previous repairs etc, or
   (b) To provide a general overview of the condition of the principal structural elements of the property with a view to advising whether the property is suffering from deficiencies such as subsidence, heave, landslip, structural instability or failure of structural components.

4. The inspection is not a full “Building Survey” as defined by the Royal Institution of Chartered Surveyors. A "Building Survey" deals with many of the non-structural aspects of property condition. Our Structural Survey will not cover items other than structural items and any comments on matters non-structural are for information and may require specialist advice. For example: breach of damp proof course, damp, roof tile conditions, wood boring beetle or rot, drainage, rain water goods, electrics, Planning and Building Regulation compliance are examples of matters not covered in our report. Other than general comments the inspection will not include the testing of any services to the property, nor will it consider the presence of any hazardous materials.

5. Inspections can only be made of those areas which are freely accessible. Unless arrangements have been made beforehand no inspection can be made of the foundations or areas buried beneath the structure or behind cladding, neither can any comment be made upon areas that are obscured by fitted carpets or fixed coverings. In the event that such further inspection is advisable then this will be referred to in the report. However, there is always the possibility that there are hidden defects which cannot reasonably be established from a Structural Engineer’s inspection.

6. The report should not be construed as an implied warranty in relation to the structure.

7. Clients should always obtain legal advice on matters involving the sale and purchase of property; our reports do not address legal issues.

8. It must be remembered that the condition of any property is a constantly changing variable. With the passage of time new defects can arise and existing ones worsen. The report should only be taken as a record of the property’s condition at the time of the inspection.

PAYMENT TERMS

10. Our quotation fee is for attending site, inspection of property under the conditions as set out above, consideration of findings and reporting thereon. This fee is based on the initial instruction received. Any further involvement required if the property is found to be of a more complex nature, additional site visits and further correspondence, will be charged at our standard hourly rate, which is currently £150.00 plus VAT.

11. Unless otherwise agreed, it is company policy that our structural survey report will not be released until payment has been received in full. Payment of outstanding invoices is expected by return. We will exercise our statutory rights to claim interest and compensation for debt recovery costs under the terms of the late payment legislation if payments are unreasonably delayed.

12. All rates quoted are exclusive of VAT.

13. The financial liability of RWA Consulting Engineers LLP under the terms of these conditions is limited to losses only incurred to the value of the Professional Indemnity Insurance available and in force at the time of this Report.

14. The client shall pay the fees in full without deduction by way of set off, counterclaim, discount, abatement, retention or otherwise.