RWA
CONSULTING
CIVIL AND STRUCTURAL ENGINEERS
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Report on

Barns 1 and 2

At

Gaylors Farm, Cherry Green Lane
Westmill, Buntingford
SG9 9LD

For

Mr Tom Claridge

REPORT COMPILED BY: Robert M Wallbank BSc., C.Eng., M.I.C.E.
DATE:10th May 2022
JOB REFERENCE NUMBER: RMW/12855/19

RWA CONSULTING

Mr T Claridge
6 Bulrush Way
Broxbourne
Herts
EN10 6GS

Our ref: RMW/12855/letrep3A/19
Date: 10th May 2022

Dear Mr Claridge

Re: Barns at Gaylors Farm, Cherry Green Lane, Westmill, Buntingford SG9 9LD

Thank you for your instructions to comment upon the structural condition of the above property with specific reference to the structural suitability for conversion. There are two barns on site that are the subject of this report, which occupy two individual areas that have been constructed very differently, but each involve timber framing and metal profile sheet roofing. All descriptions, structural condition and comments and conclusions will be set out in each section. 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 loading on existing foundations, the condition of principal structural components and any other structural implications of the renovation and conversion works for Class Q conversion.

I confirm I undertook my initial inspection on Wednesday 6th May 2020, completing a reassessment of the structural condition during April 2022.

I am in receipt of proposals including a site identification plan and a general floor plan layout, and proposed elevations which are appended to this report.

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 Barn 1 - Description

DESCRIPTION

1.1

Barn 1 comprises of a pole barn, with circular timber poles supporting deep timber trusses that in turn support purlins and metal profile sheet roofing. The barn is entirely enclosed with a 9 inch concrete block wall, with further corrugated sheeting above up to eaves level. The sheeting is a mixture of vertically oriented asbestos cement corrugated sheets and horizontally oriented metal corrugated sheets. The entire floor of the barn is concrete finished to one level, with internal concrete block pens.

1.2

Along the long elevations the poles are set at 4.7 metres centres and along the width at 6.3 metres centres. The overall length of the barn is around 29 metres and the width around 13 metres. The ground level to eaves measures over 3 metres. Each pole is approximately 200mm in diameter. The purlins are coach bolted to the poles by means of a notch to offer vertical support. The main roof beams are 250mm deep by 70mm wide.

2.0 Barn 1 - Structural Condition

2.1

Historically there has been some wind damage to the corrugated sheets. The roof sheets of notable damage have been replaced and new mechanical fixings installed. An appropriate splice repair has also been undertaken on the outer west facing purlin.

2.2

The poles are generally in good structural order, but there is some damp damage to one of them that will require some timber treatment as water flow appears to be directed towards that particular pole.

2.3

There is some minor deflection to the main roof rafters, which is of minimal concern as the frame remains structurally sound and will be further reinforced with the installation of internal walls as per the proposed plans.

3.0 Barn 1 - Comments and Conclusions

3.1

Apart from some minor water damage to some of the external poles, the main structural elements and supports of the main pole barn are very robust and even over-designed for their purpose.

3.2

It was observed that there were some salvaged poles lying in Barn 1, which can be utilised to scarf in and replace any damp related problems to the observed damaged pole without altering its structural integrity.

3.3

The external facade is made up of a mixture of asbestos corrugated sheets, metal sheets and blockwork walls. All appear to be in reasonable condition but will be suitably replaced as part of the conversion works.

3.4

The proposed layout of Barn 1 allows the roof purlins to be supported without the need for strengthening.

3.5

The barn is substantially robust and fit for purpose. There is no evidence of sway, bulging or other structural issues to main support of the posts, main roof beams or purlins. Elements of the design are over-designed for their current purpose, simply as a result of the available materials used to construct the barn. Therefore, it will be practical and appropriate for the structure to carry the weight of the materials required for a conversion. In particular if insulated metal profile sheets are used for the roof, then the additional stiffness this affords will easily compensate for the additional weight of the extra metal profiles and insulation. The perimeter walls are largely robust and performing their function and supporting the vertical cladding in an adequate manner, so that any additional materials for internal finishes and insulation would not pose a problem.

3.6

In my opinion, whilst there are works required, the main structural elements of the building represent a permanent and substantial construction and can be retained allowing for residential purposes without demolition or major reconstruction of the main structural components. It will not require extensive reconstruction.

4.0 Barn 2 - Description

4.1

Barn 2 is a more modern style structure comprising of 230mm by 220mm section size hardwood timbers forming a portal framed structure, measuring approximately 14 metres in length (orientated north – south) by 9.5 metres in width. There are additional mono pitched overhang sections measuring 5.4 metre to the west and 5.9 metres to the east. These rely on pole columns to support the eaves and main roof structure.

4.2

Within the area of the portal frames the height from ground level to eaves measures 5.6 metres and to the ridge 7.9 metres.

4.3

There is a gable end frame to the northern end of the barn with corrugated sheet cladding to the side elevations. Blockwork has been constructed on strip concrete foundations that surrounds the perimeter of the North, East and West elevations to a height of circa 1 metre.

4.4

The main portal frame barn relies on the main section column timbers that support a bolted trussed roof, forming a lattice style girder with diagonal braces back to the columns and a hanger from the twin purlin ridge. Further purlins rest on the trusses on both the east and west elevations, which in turn support metal profile sheet cladding. On the northern end gable this also has purlin rails and metal profile sheet cladding.

5.0 Barn 2 - Structural Condition

5.1

The projection to the west over-sails the turkey barn slightly but does not rely on this barn for any support. The turkey barn located to the west of Barn 2 is to be demolished in its entirety as per the proposed plans.

5.2

The poles do not appear to be suffering from damp. There is no damage to the projections, therefore the structural integrity of the main timber portal frame barn remains sound.

5.3

The timbers have been well ventilated and are in good condition, with no evidence of rot or structural distress to any of the structural components and the columns are true and vertical. All of the bolted connections are sound and the roof and cladding are well fixed and in good structural condition.

6.0 Barn 2 - Comments and Conclusions

6.1

The timber portal frame barn and two side wings are in good condition and no structural works are required to either maintain it or to convert it to habitable use.

6.2

The proposed conversion plans utilise the existing structure to form apertures, internal spaces and party walls. The design is sympathetic of the existing frame layout. The new internal walls/party walls will not compromise the existing structural and will remain independent of the existing structural frame.

6.3

In my opinion, whilst there are very minor works required, the main structural elements of the two barns, represent a permanent and substantial construction and can be retained allowing a full conversion and renovation without demolition of the main structural components. It will not require extensive reconstruction.

Yours sincerely

[redacted]

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

enc. Drawings

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 This report was commissioned by Mr Claridge, owner of the above property and a copy of this report may be used by his professional advisors, Building Society, Bank, or Building Insurers. No other person may receive a copy of this report without first obtaining our permission in writing.

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.

RWA CONSULTING

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.

NOTE:
This drawing has been produced for approval purposes only. All building, site dimensions and levels are to be checked on site before works start. This drawing must be read in conjunction with, and checked against, any structural or other specialist drawings provided.

KEY

- Application Site
- Site Ownership
- Right of Way via existing access
- Hardstanding (existing)
- Parking Bay

Curtilage Area Schedule

Plot 1A - 124m2
Plot 1B - 99m2
Plot 1C - 99m2
Plot 2 - 263m2

REV	DESCRIPTION	DATE
A	Application Issue	12/06/2023
B	Application Issue	07/07/2023

R N B DESIGN
Email: t.claridge@rnbconstruction.co.uk

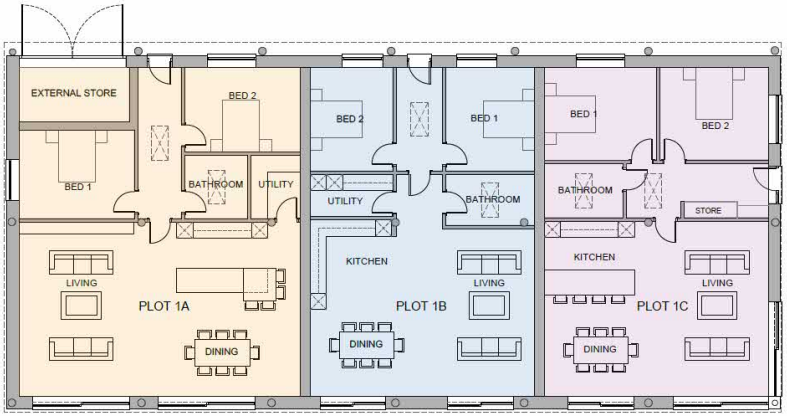
Project
Gaylors Farm, Cherry Green Lane, Westmill, Buntingford

Title
Proposed Site Plan

Scale
1:500 @ A3

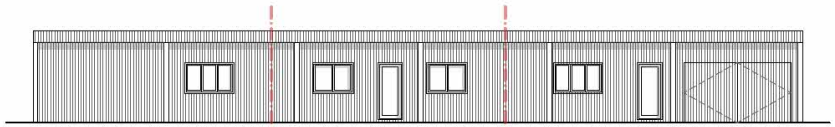
Drawn by	Checked by
TC	JW
Date 07/07/2023	Date 07/07/2023

DWG No. **GF_PL_002** rev. **B**

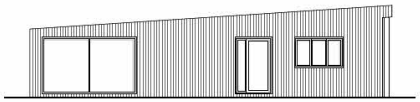


BARN 1 - PROPOSED GROUND FLOOR PLAN

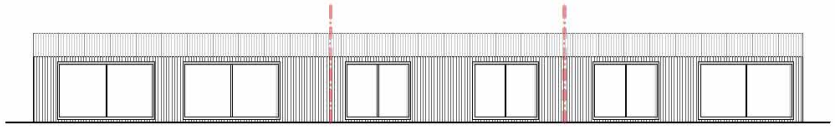
SCALE 1:200 @ A3



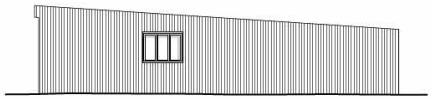
BARN 1 - PROPOSED NORTH ELEVATION



BARN 1 - PROPOSED EAST ELEVATION



BARN 1 - PROPOSED SOUTH ELEVATION



BARN 1 - PROPOSED WEST ELEVATION

NOTE:
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MATERIALS KEY

- SECTIONAL CLADDING - AS EXISTING
- CORRUGATED METAL ROOF SHEETS - AS EXISTING
- ROOF LIGHT

Area Schedule

Plot 1A	126m2 GIA
Plot 1B	100m2 GIA
Plot 1C	100m2 GIA

REV	DESCRIPTION	DATE
A	Application Issue	28/06/2023
B	Application Issue	07/07/2023

R N B DESIGN
Email: t.claridge@rnbconstruction.co.uk

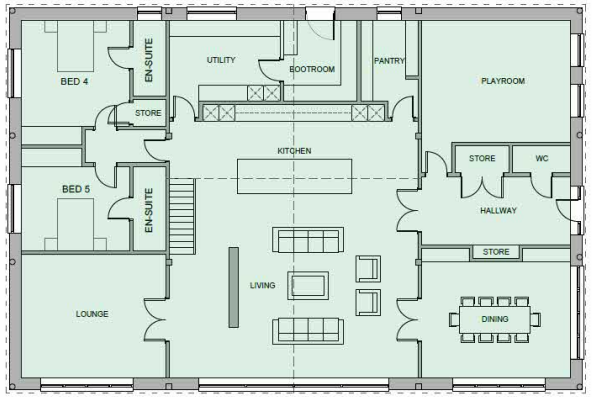
Project
Gaylors Farm, Cherry Green Lane, Westmill, Buntingford

Title
Barn 1 - Proposed Plans

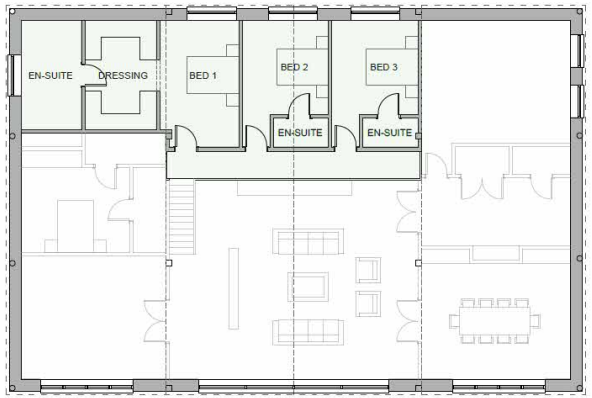
Scale
1:200 @ A3

Drawn by	Checked by
TC	JW
Date 07/07/2023	Date 07/07/2023

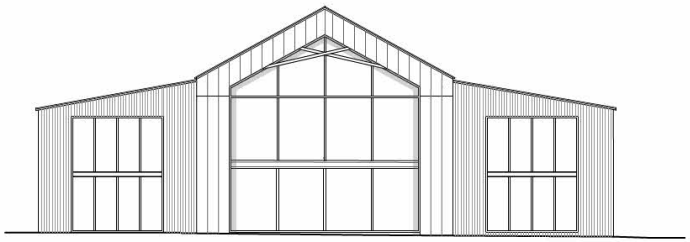
DWG No. **GF_B1_005** rev. **B**



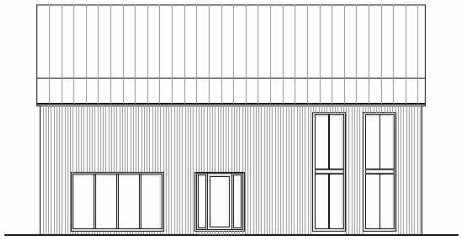
BARN 2 - PROPOSED GROUND FLOOR PLAN



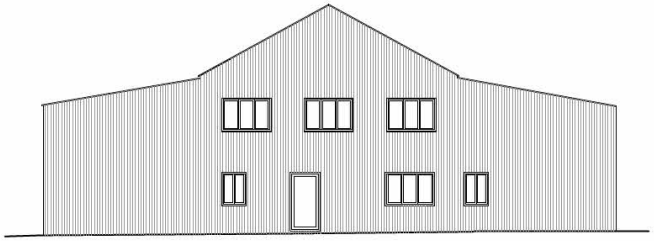
BARN 2 - PROPOSED FIRST FLOOR (MEZZANINE) PLAN



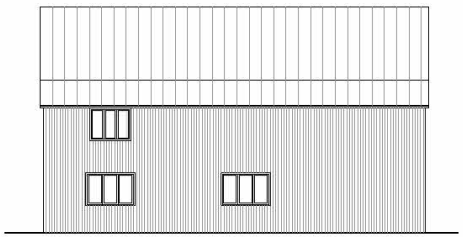
BARN 2 - PROPOSED SOUTH ELEVATION



BARN 2 - PROPOSED EAST ELEVATION



BARN 2 - PROPOSED NORTH ELEVATION



BARN 2 - PROPOSED WEST ELEVATION

NOTE:
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MATERIALS KEY

SECTIONAL CLADDING - AS EXISTING

SHEET METAL ROOF - AS EXISTING

Area Schedule

Plot 2 - Ground Floor	263m2 GIA
Plot 2 - First Floor	76m2 GIA
Plot 2 - Total	339m2 GIA

REV	DESCRIPTION	DATE
A	Application Issue	28/06/2023

R N B DESIGN

Email: t.claridge@rnbconstruction.co.uk

Project
Gaylors Farm, Cherry Green Lane, Westmill, Buntingford

Title
Barn 2 - Proposed Plans

Scale
1:200 @ A3

Drawn by	Checked by
TC	JW
Date 28/06/2023	Date 28/06/2023

DWG No. **GF_B1_006** rev. **A**