GWK STRUCTURAL SOLUTIONS LTD

FAO CB Homes
13 Portal Business Park
Eaton Lane
Tarporley
CW6 9DL
22.02.2023

Dear Mr Nathan Booth,

Willington Lodge, Horseman's Green, Whitchurch SY13 3BZ – Structural Condition Report

Please find enclosed a copy of the structural condition report for the existing barn building which is to be converted to a wedding venue at Willington Lodge at Horseman's Green in Whitchurch.

I trust the attached report is satisfactory, however, please do not hesitate to contact me if you have any queries.

I look forward to hearing from you in the future.

Regards

[redacted]

Gareth Kimber

BEng MIStructE
Director

STRUCTURAL CONDITION REPORT FOR THE

PROPOSED BARN CONVERSION PROJECT

1.0 TERMS OF REFERENCE

A visual survey of the existing barn structure was undertaken on Wednesday 8th February 2023 to carry out a visual assessment of the existing barn building to assess it's suitability for conversion to a wedding venue.

The survey comprised of a non intrusive visual inspection of the barn in isolation from the other buildings on the site. However the inspection did not include a visual and or intrusive inspection of the following items listed below at this time:

1. An internal inspection of any structural elements or superstructure.
2. A moisture or timber survey.
3. A cavity wall tie inspection.
4. An inspection of roof coverings, rainwater goods or flashings.
5. An inspection of decorations and finishes, except where damaged due to failure of structural elements.
6. An inspection of areas covered, unexposed or inaccessible.

The recommendations given in this report relate to matters defined by the Terms of Reference and do not address other possible defects, which may exist outside the scope of this report.

2.0 EXECUTIVE SUMMARY

GWK Structural Solutions we requested to undertake a structural condition survey of part of the existing barn outbuildings in order to assess it's suitability for conversion to a wedding venue.

In conclusion, it is our opinion that the existing barn is suitable for conversion subject to the items listed in Section 5.0 being investigated in more detail at the appropriate time.

3.0 INTRODUCTION

GWK Structural Solutions we requested to undertake a structural condition survey of part of the existing barn outbuildings in order to assess it's suitability for conversion to a wedding venue.

The existing barn takes the form of a rectangular building which is double height with a single storey element to the west elevation. The main barn takes the form of a brickwork open form structure with timber trussed roof and timber clad infill wall panels. The single storey element comprises of a basic timber frame with corrugated metal cladding to the walls and roof.

Typically the ground floor element of the barn is currently used as stables and equine related activites with general storage.

Historically it is our understanding that the barns would been used for animal welfare and hay storage.



Aerial Image of Willington Lodge in Whitchurch

4.0 OBSERVATIONS

4.1 Roof Structure

The existing duo pitch roof construction of the main barn comprises of metal corrugated sheets spanning between timber purlins which are supported by a series of timber queen post trusses. The roof trusses are supported on the existing external solid masonry walls. Refer to the attached Photographs P.06 to P.09 in Appendix A.

The timber queen post trusses appear to be in relatively good condition however this was only based on a visual inspection from ground floor level. Given the age of the building and their environmental exposure they are in a reasonable state of repair.

No insulation or breather membranes etc were present within the existing roof construction.

No design verification calculations have been undertaken at this time to establish whether the existing purlins or trusses would comply with current building regulations.

4.2 Ground Floor

The existing ground floor construction comprises of a concrete slab of which the thickness is unknown, although it is thought this varies.

We were unable to verify at this stage whether there is any insulation and or damp proof membrane below the existing slabs, however it is highly unlikely they are present given the age of the building.

There were no specific signs of deterioration or significant structural movement in the existing concrete floor slabs.

4.3 Walls

The external walls to the barn are typically solid brickwork and vary in thickness but can be seen to be substantial. There are a small number of minor cracks evident in the masonry but nothing that suggests significant movement.

It is unknown at this time whether a damp proof membrane is present in the walls above external ground level, however it is highly unlikely given the age of the building.

The external exposed face of the existing brickwork can be seen to have weathered which is not unusual given the exposed rural location, however it is generally in reasonable condition. This is not uncommon for a building of this age. Refer to Photographs P.10 to P.12 in Appendix A.

The mortar bed joints to the external walls can be seen to have weathered which is not unusual given the exposed rural location, however they are generally in reasonable condition. This is not uncommon for a building of this age. Refer to Photograph P.12 in Appendix A.

The verticality of the external walls is generally good.

On the east elevation of the barn there is an isolated area of the external wall that appears to have been struck which has caused movement of the brickwork. Refer to Photographs P.15 & P.16 in Appendix A.

Two trial pits were undertaken in order determine the depth and form of the existing barn wall foundations. The first trial pit was dug on the east elevation on the left hand side of the main entrance, and the second trial pit was dug on the south east corner of the building. Both trial pits confirmed that the base of the walls were approximately 400mm below existing ground level and that no stepped footings were present in either location. Refer to Photographs P.14 & P.17 in Appendix A.

5.0 CONCLUSION

Further to our visual inspection it is our opinion that the following items are considered should the proposed conversion move to the next phase.

It is our opinion that the existing barn structure is, in it's current condition, suitable for conversion to a wedding venue. The following elements would need to be considered in more detail to assess their suitability to comply with current Building Regulations;

- Roof structure
- Repair of all masonry and repointing of bed joints
- Floor slab
- Drainage (surface water and foul)

The two trial pits dug confirmed that the existing walls do not have any formal footings and given that fact that additional vertical weight would be added to the walls once converted it is our recommendation that the walls should be underpinned.

In conclusion, it is our opinion that the existing barn is suitable for conversion subject to the above items being investigated in more detail at the appropriate time.

The report was written on behalf of GWK Structural Solutions Limited.

Gareth Kimber

Gareth Kimber

BEng MIStructE
Director

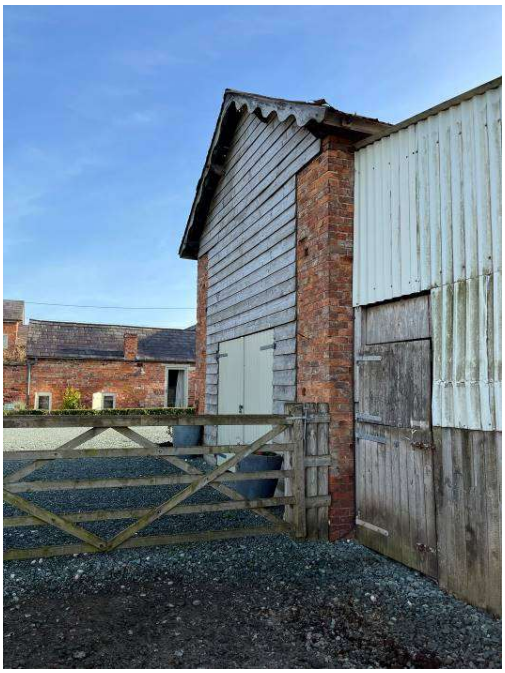
APPENDIX A - PHOTOGRAPHS



Photograph P.01



Photograph P.02



Photograph P.03



Photograph P.04



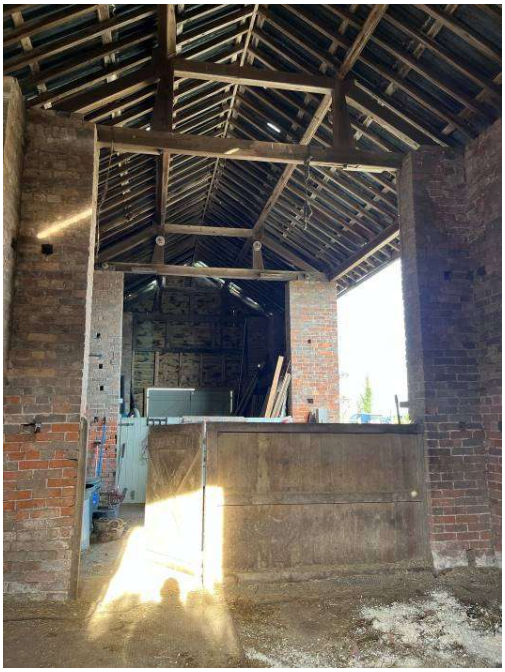
Photograph P.05



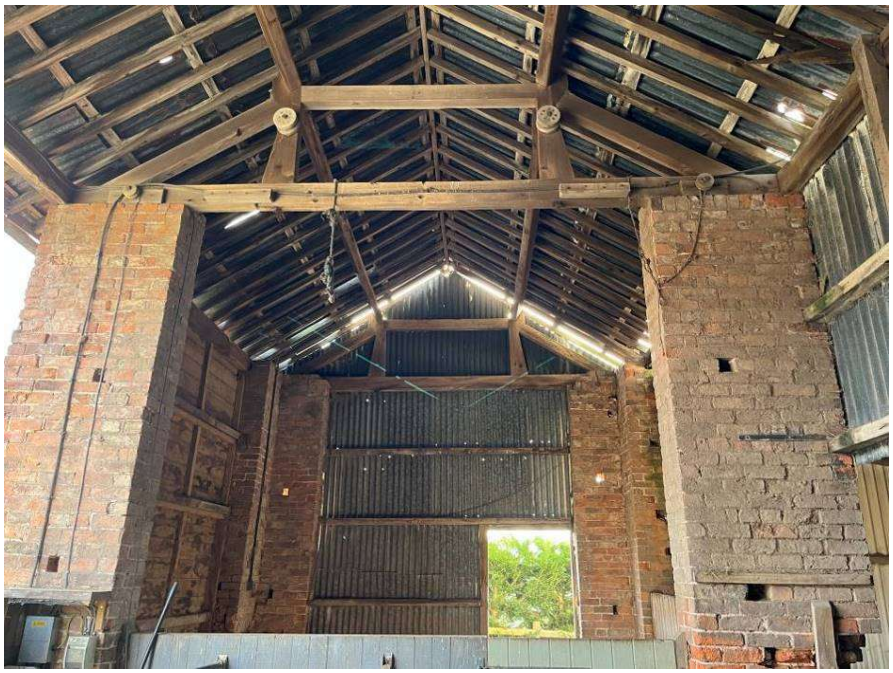
Photograph P.06



Photograph P.07



Photograph P.08



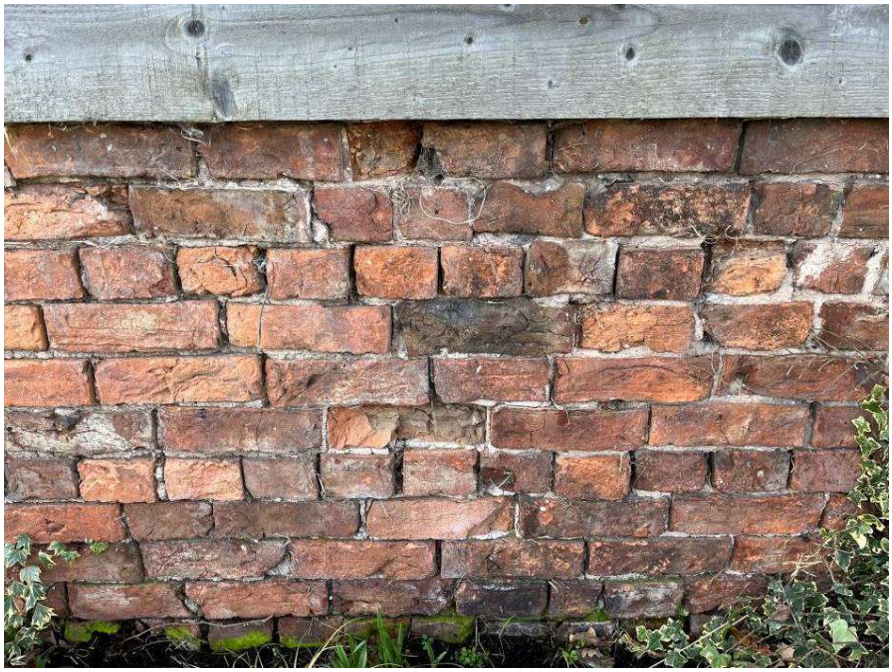
Photograph P.09



Photograph P.10



Photograph P.11



Photograph P.12



Photograph P.13



Photograph P.14



Photograph P.15



Photograph P.16



Photograph P.17