



Holford Arms

Knockdown, Gloucestershire GL8 8QY



Structural Report on Conversion of Barn to a Hospitality Facility

Date of inspections

27-11-25 & 8-12-25

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1. Introduction

We were appointed by James Reynolds to report on the structural condition of a grade II listed barn at the property and its suitability for conversion for use as part of a new spa facility.

Our report is concerned only with this structural issue, all other aspects of the property are outside our report.

Our report is prepared for the use of the above named client in connection with a planning submission only and is not to be relied upon by third parties without our specific written authorisation.

No exposing work was carried out. Our report is based on a visual inspection.

A site visit was carried out 27-11-25 and 8-12-25.
Weather conditions were sunny on both occasions.

Our report contains photographs of the buildings taken on the days of inspection.

2. General Description

The building is formed from a long narrow wing with the ridge running northeast/southwest. For the purposes of this report this will be referred to as the main barn. At the southwest end of the main barn there is an area where repair works are in progress and the pitched roof had been removed at the time of the survey.

The main barn is currently in use as the tap room for the adjacent pub at the east end of the building and a internal storage area at the west end (store 1). The area with the roof removed is also used as a store (store 2).

There is a short covered link between the barn tap room and the adjacent pub. The neighbours steel framed barns with blockwork walls are sited adjacent to store 2 with a narrow alley between.

The general layout is presented in the key plan at the end of the report. The structure consists of rubblestone walls to both parts, and a timber framed roof over the main barn.

Alterations and repairs have taken place in the main barn over the years with some modern timbers replacing old purlins and truss ties.

The primary timber elements that previously supported the pitched roof over store 2 are still visible.

3. External Observations

Main barn:

The roof of the main barn is clad in plain concrete tiles. There are dips in the ridge line suggesting spreading has occurred and there is corresponding lateral movement at the top of the walls but not at a level that is structurally significant.

Gutters run along the majority of the eaves in the main roof and discharge into downpipes. There is a portion missing at the southwest corner. The downpipe on the south side goes into the ground. The downpipe on the north side appears in the photos to run off onto the surface. The rainwater to the link cover discharges to surface.

Various timber lintels and embedded timbers within the wall are soft and have decayed. There are some areas where roof timbers are exposed particularly at the southwest end.

The walls have generally been pointed in lime or cement mortar. In some areas this has weathered away where for example the gutter has failed. There is a length of wall adjacent to the store 2 at the south face that is unpointed.

There is significant movement in the southwest gable that divides store 1 from store 2. The upper part of the gable is in poor condition and has distorted probably due to roof movement. Building material piled up against this

at the first inspection may also have caused some movements.

The roof covering is missing in areas exposing internal timbers and the tops of the walls to the elements.

A concrete apron surrounds most of the building and is carried through store 2.

Store 2:

The rubblestone walls that flank the north entrance are in very poor condition. The rubblestone walls that flank the south entrance shows signs of delamination at the reveals. There are areas of these walls that are unpointed. Timbers that run along the head of the wall show signs of decay. The tops of the walls are open to the elements.

4. Internal Observations

The roofs to the main barn at the southwest and northeast ends are formed in the traditional manner from timber trusses, purlins and rafters.

The original structure has undergone various repairs over the years and many of the older elements have been altered or replaced with more modern timbers. In the storage area, the truss ties have been cut at the wall and replaced with a pair of timbers to raise the collar and give improved access. The truss bracing is not properly connected to the tie beam. Element sizes were measured (or estimated where noted) as follows:-

Principal rafter:	275x80
Tie beams:	2 no. 230 x 80
Modern purlins:	estimated 200x75
Old purlins:	estimated 150x150
Common rafters:	80x80 at approx.360 crs

The loft to the tap room was not accessible but could be viewed through a loft hatch. The timber elements had white patches on them which is most likely to be paint as the appearance matched the gables. This roof has also been altered with more modern timber elements visible, but in this case the older truss tie is in place.

There is some minor cracking in the stone walls and the southwest gable is poorly bonded to sidewalls.

Concrete floors are visible in places, but there are also areas of bare earth at the southwest end of the main barn.

5. Comments & Conclusions

Based on the above site inspection, the below conclusions and comments are drawn:-

- The rubble stone walls are mostly sound, needing only localised repairs, removal of concrete mortar and repointing with lime mortar
- The rubble stone walls flanking the entrance to the store 2 are in poor condition and will need some localised rebuilding. The wall heads should be protected from water ingress.
- Delaminating rubble stone walls on the south entrance will need repair with suitable anchors.
- Helifix bars should be used to reinforce cracks in the stone walls and improve bonding at junctions
- The southwest gable to the barn will need to be partially rebuilt – most likely taken down to eaves and rebuilt from there
- Timber lintels that are rotten will need replacing
- Embedded rotten timbers should be removed and replaced with stonework
- The roof structures would be strengthened with the addition timber ridge beams spanning between frames to prevent further roof spread

- There are a significant number of modern timber elements within the existing roof structure and it has undergone a number of ad hoc repairs and alterations. Some wall plates and rafter ends may need replacing. Any replacement elements should be in oak to match the existing. Existing historic elements (eg purlins, common rafters and potentially the truss over tap room) should be retained and reused as far as possible.
- Roof coverings should be reinstated where missing
- Leaking gutters should be repaired and gutters should be installed where missing

The works described above constitute overdue repair and maintenance necessary to keep the structure adequate for its present use.

Proposed conversion

It is proposed to convert the barn into a spa facility. The proposals follow the same single storey form as the existing, except that store 2 is to be covered with a duopitch roof.

It is expected that the existing concrete ground slabs will be replaced with insulated floor slabs. Suitable edge details would be used to avoid undermining the existing walls.

Proposed changes to the existing walls are noted below:

- Typically existing walls will be retained with repairs/rebuilding as noted in the previous section
- Occasional new openings and infilled openings to suit the new architectural layout using traditional lintels and arches
- Dividing wall in main barn is to be taken down and replaced with a traditional timber roof truss to match existing trusses
- Timber 'lean-to' built on south face of main barn

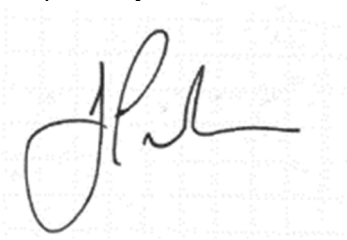
- Extension adjacent to new south gable at store 2.
This will be designed to minimise disruption to the existing wall and foundations

In summary, the barn building is of a robust traditional type of construction that is well suited to conversion. The repairs and improvements would ensure the longevity of the building going forward.

The conversion of these buildings can, in our opinion, be carried out without major reconstruction of structural elements.

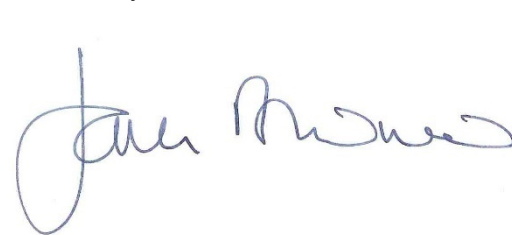
We will be pleased to answer any questions on this report.

Prepared by:



James Packer MEng

Checked by:

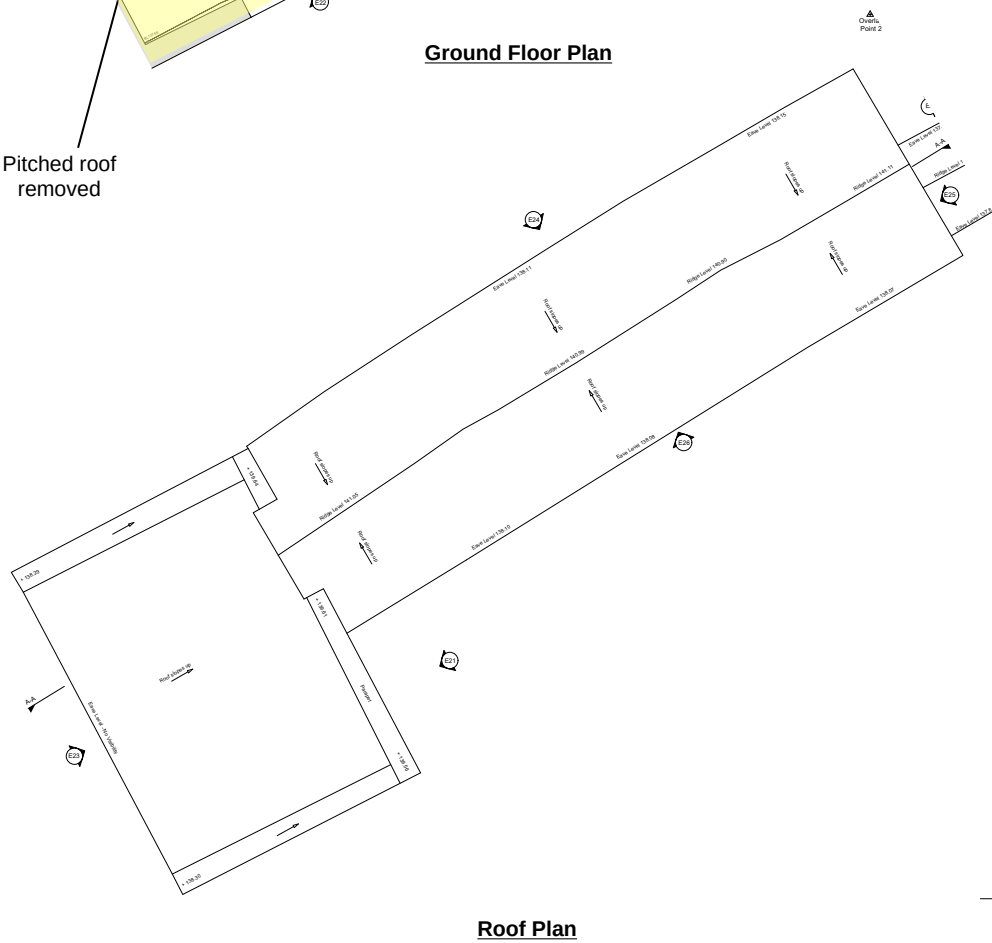
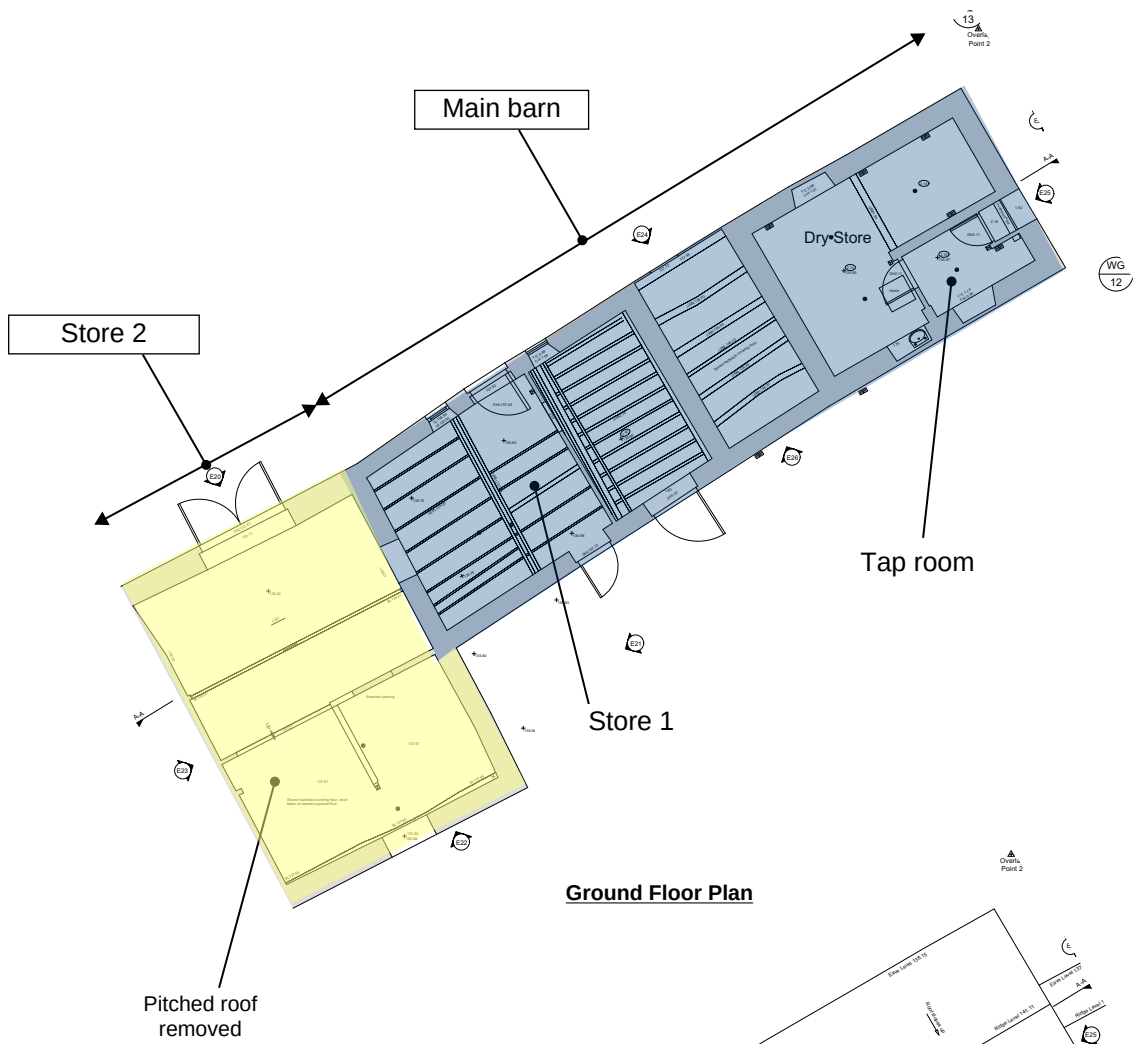


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PHOTOGRAPHS

Key Plan



Main Barn



1: View of main barn building from south east



2: Elevation on barn from main road side



3: Internal view within store 1 looking southwest (dividing gable wall with store 2)



4: Internal view within store 1 looking northeast



5: Section of roof with older purlins and common rafters



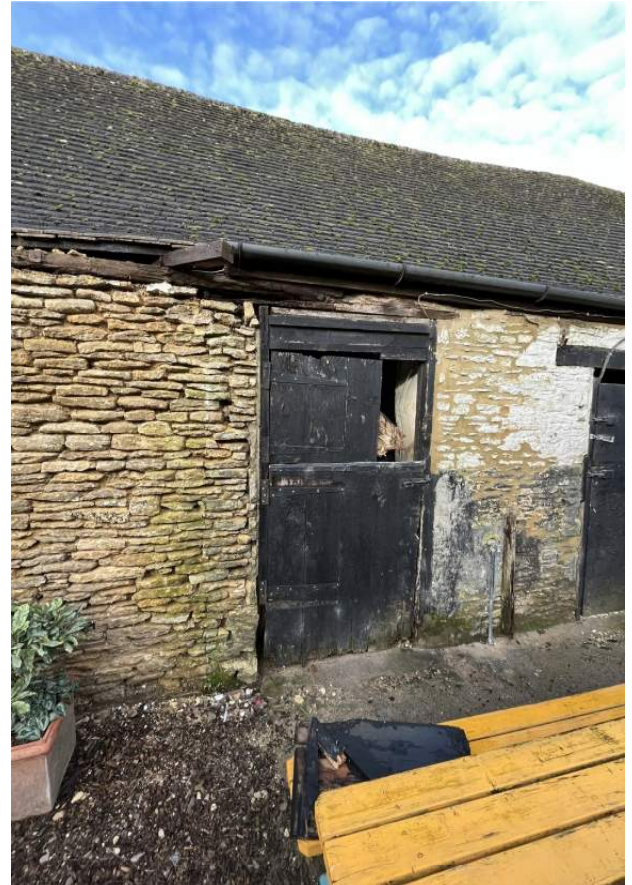
6: Section of roof with more recent purlins and common rafters



7: Ripples in top of wall reflect areas where the roof has spread



8: Alterations to the timber trusses - original tie beam cut and replaced with a pair of timbers. Diagonal struts are not properly attached to tie beam



8: Timbers exposed to the elements are soft and have degraded. Stonework would benefit from repointing with lime mortar and locally rebuilding/replacing damaged stones in some locations



9: Tie beam to timber truss in tap room



10: View into loft over tap room - white on timbers to be checked but most likely to be paint



11: View into loft over tap room - note chimney flue



12: Views of main barn gable at interface store 2

Store 2



13: Views of north opening to store 2



14: Views of south opening to store 2



15: Views of west side to store 2 showing timber framing to removed pitch roof