



**REPORT ON THE
CONDITION OF STRUCTURE
OF**

**BARNS AT
PLAS GRONO FARM
ERDDIG
WREXHAM
LL13 0YR**

FOR

**MR P GRAY
PLAS GRONO FARM
ERDDIG
WREXHAM
LL13 0YR**

GMS272/GPH/OCTOBER 2020



1.0 BRIEF

- 1.1 This report was commissioned by Mr P Gray, the property owner, acting on the recommendation of JNL Design to assist with a Planning Application for conversion of existing barn buildings to habitable usage.
- 1.2 The brief for this report was to carry out a visual examination of the barns at Plas Grono in order to assess the condition of structure, report on the feasibility of conversion to habitable usage and confirm that the proposed works can be carried out without affecting structural stability.
- 1.3 This report is for the use of Mr P Gray and his advisors in this matter. This report can be released to those parties with a direct interest or involvement with the matter of the planning approval application, but shall not be released to any other party, for any other use, without the express permission of Hughes Consulting. No other party may rely on this report, which does not confer nor purport to confer any third-party rights or benefits.



2.0 SURVEY

2.1 General

A survey of the barns was made on 2nd October 2020, when the weather was overcast. The survey comprised a visual examination, without removing any finishes or excavating any trial holes for examination of foundations or bearing strata, i.e. no attempt was made to uncover any otherwise hidden or buried elements.

Although it is judged that sufficient information has been gathered for us to report usefully, it should be noted that detailed examination of all areas was not possible. Any areas not examined, nor referred to in this report should not necessarily be considered as being free from defect. It is assumed that detailed structural matters will be attended to as part of a Building Regulations submission. Record photographs of condition were taken.

2.2 Reference should be made to Architect's drawings, which depict the existing buildings and the nature and extent of the proposed works.



2.3 Limitations and Liability

The timber or other parts of the building which are covered, unexposed or were inaccessible have not been inspected. Therefore, it is not possible to confirm that any such inaccessible or buried elements are free from defect.

No excavations were undertaken to uncover buried elements or foundations and any notes on the condition of such elements are made based on the visible condition of the buildings. No intrusive testing was carried out. Manhole covers were not lifted, and drains were not tested.

This report is not intended to be an exhaustive list of all defects and only the most significant or noticeable defects have been reported. Further defects may become apparent during more extensive investigation or during future refurbishment works.

Detailed calculations to determine the adequacy of existing members are outside the scope of this report and have not been undertaken. However, evidence of distress because of overloading or deterioration would be identified.

This report should not be used as part of any agreement for change of ownership. The report shall be solely used by the Client to determine the extent of works to the property and liability in this respect will be limited to the instructing Client.



3.0 LAYOUT

The barns at Plas Grono form a long rectangle on plan, on the southern edge of the site, which is relatively flat. There are two storey and single storey sections, with the division roughly along the mid-length of the building footprint. It is the two-storey section which is to be converted to habitable usage.

The barns are fronted by lawned gardens, and there is a planted crop field at the rear and right-hand side. There are some small trees and shrubs close to the front wall and some trees close to the rear right hand corner and right-hand side.

4.0 CONSTRUCTION

The roof is are double pitched, comprising timber rafter and canted purlin framing supported on end walls, and by intermediate timber trusses. Roofs have a slate covering.

Upper floors are comprised of boarded timber joists – supported by the load-bearing masonry walls and down-stand timber beams at regular spacing.

The ground floor is formed by ground bearing solid materials – brick paviours and concrete., and brick paviours

Walls are constructed in solid clay brickwork 225mm thick, apart from the right-hand end wall which is stone. Walls re render finished at the front. There are various door and window openings, with various lintel types – these are mainly arched brickwork or timber. There is a steel beam supporting the outer face of the wall over an open fronted large opening at the centre of the front wall.



No examination has been made of the building foundations at this point. Buildings of this type and age would be expected to be founded at relatively shallow depth, with either some widened of masonry – i.e. stepped brickwork, or even a concrete strip at the wall base.

The BGS records show that the prevailing soils, which will provide the bearing for the building foundations, are diamicton – sedimentary superficial deposits which are usually mainly clayey soils.

5.0 OBSERVATIONS ON CONDITION

5.1. The principal points of note on condition, are as follows: -

- (i) Roof coverings are in good condition and roof lines are reasonably good although there is some undulation in the roof line between trusses due to purlin deflection, but this has not been critically debilitating.
- (ii) Wall lines are generally good, as is the condition of brickwork. There is some slight lateral distortion of the front wall due to the conditions of restraint to brickwork – which is not critically debilitating to the competence of the structure.
- (iii) There is localised degradation affecting a small area of the upper floor – which seems to be result of historic leakage – perhaps around a rooflight, two of these are set into the rear slope of the roof.



- (iv) There is some slight deflection of the floor beams spanning front to rear. However, this has not caused any disfunction.

5.2 General Observations

5.2.1 Rainwater goods and drainage

It is assumed that rainwater goods and drainage will be renewed as far as necessary, which will retain the status quo with respect to the capacity of the foundation bearing soils.

5.2.2 Lintels

It is assumed that timber lintels will be replaced during refurbishment works with pressed metal, or concrete lintels.

5.2.3 Masonry

Masonry is generally in good condition. The addition of internal partitions where required for domestic accommodation will further enhance overall stiffness.

5.2.4 Timber

It is assumed that timber will be subject to detailed specialist survey and all necessary remediation carried out, which may involve chemical treatment, or replacement or strengthening of some timbers. Timbers can of course be retained if of suitable condition and strength. The timbers will be assessed for additional loading from insulation and plasterboard ceilings and strengthened where and if necessary.



5.2.5 Roof

The line and condition of the roofs is reasonably good. It is taken that the roof cover will be removed for the addition of insulation as a part of the upgrading works required and details for that and roof reconstruction will be dealt with at building regulations approval stage.

6.0 DISCUSSION

The barn building is in good condition. There are a few minor defects, but nothing that is critically debilitating.

The building shows no sign of any notable distortions or differential foundation settlement and is sufficiently robust for the proposed works to be carried out without any undue jeopardy.

We advise our opinion that the following measures will need to be addressed as part of the conversion works.

1. Upgrading of the roof, to satisfy current standards of weatherproofing and insulation.
2. Sympathetic repair of weathered masonry. This only affecting a very small proportion of the building.
3. Treatment or replacement of any degraded timber – following the advice given in a specialist report on timber condition obtained prior to the execution of any works.
4. Installation of strapping between walls and roof and floors.



5. Construction of new ground floors to include insulation, as part of insulating the whole of the building envelope.
6. The installation of adequate drainage systems.
7. Replacement or repair of any distressed or unsuitable lintels.
8. Introduction of adequate d.p.c's.

7.0 **CONCLUSION**

- 7.1 It is considered that it is entirely feasible from a structural viewpoint to convert the barns for habitable use. The building is generally in good and robust condition and can accommodate the proposed works.
- 7.2 Alterations can be carried out without jeopardising the structural stability of the building. It is assumed that the works recommended in the foregoing section will be undertaken. The Contractor carrying out the works must plan and phase operations and install temporary propping to ensure that stability is not compromised.



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