



**REPORT ON THE
CONDITION OF STRUCTURE
OF**

**OUTBUILDING 2
BIRCH HOUSE
BIRCH VALE
HIGH PEAK
DERBYSHIRE
SK22 1DH**

FOR

**MR J HADFIELD
BIRCH HOUSE
BIRCH VALE
HIGH PEAK
DERBYSHIRE
SK22 8ED**

GMN206A/GPH/JANUARY 2023



1.0 BRIEF

- 1.1 This report was commissioned by Mr J Hadfield, to assist with a Planning Application for re-development of an existing outbuilding, converting it to habitable usage.
- 1.2 The brief for this report was to carry out a thorough visual examination of the building, to assess the condition of the structure, and advise our opinion on the feasibility of conversion to domestic usage. We measured the existing structure for assessment of its structural adequacy for the proposed use by structure design checking, to augment the visual appraisal.
- 1.3 This report is for the use of Mr J Hadfield and his advisors in this matter. It may be released to those with a direct involvement in matters of planning vetting, 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.



2.1 **General**

We inspected the building on 23rd January 2023, when the weather was dry and sunny. The survey comprised a visual examination, augmented by measurement of the primary and secondary structural members for subsequent structural analysis.

It is judged that enough information has been gathered for us to report usefully. Record photographs of condition where 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.

3.0 **LAYOUT**

3.1 **Building**

The building is presently a storage cum garage / vehicle maintenance building. It is rectangular on plan, and is a loadbearing masonry structure with a double pitched roof. It is set into an embankment at the right hand side, viewing at the front of the building, and at the rear, the ground levels on the site reducing from rear to front.

The detailed layout of the existing building and proposals are shown by the Architects drawings.



4.0 CONSTRUCTION

The building has a double pitched roof covered with profiled sheeting, supported by a timber rafter and purlin roof above a loadbearing masonry perimeter walls. The purlins are supported via timber props by a massive timber beam spanning between the side walls at roof eaves level at the building mid length. The brick walling is stepped in thickness from 650mm from ground level to 1400mm height, with a short step of 400mm thick to 225mm thick brickwork from mid height to eaves. The walls are render finished on both external and internal faces. There is a full height, to eaves level, roller shutter door entrance set into the centre of the front wall, with a timber beam over it, and a window with timber lintel above the door at the centre of the gabled section of the front wall. The rear and right-hand side walls are earth retaining, the right-hand side wall has single story extension at the front and mid-length, providing additional storage space. There are two window openings in the right-hand side wall, and three in the rear wall.

The ground floor is a ground bearing concrete slab.



5.0 PROPOSALS

The proposal is for the conversion of the whole of this building. The conversion scheme will utilise the existing structure, adding partitions and service utilities and insulation to roof, walls and ceiling, and tanking where the walls are built into the embankment, so that it complies with current standards for habitation – with full details to be provided at building regulations application stage.

The existing openings will be used for fixing new flush fitting windows and doors, which will necessarily require their own framing.



6.1 **CONDITION**

The condition of the existing building is good. There is no evidence of any settlement or distortion, nor any significant weathering or deterioration of the existing elements.

There is, unsurprisingly, some minor and localised weathering by moss staining and the roof timbers and timber lintels, will need to have a through survey of condition in due course, as part of the refurbishment works.

6.2 **STRUCTURAL ADEQUACY**

6.2.1 Existing building

The existing building evidently has adequate structural strength having been in use for many years without any sign of any critical or debilitating distortion or deterioration.

The ground floor slab is in good condition as are wall lines and the building. The building appears to be very adequately founded on the natural soils, which are shaley – which can be seen by soil cuts elsewhere on the site - above sandstone bedrock at shallow depth, as documented in the BGS soils data for the site.

We have carried out a full analysis of the various elements of the structure. Based on the site measures made the analysis proves that the primary elements all satisfy strength requirements to the criteria given by the relevant current design codes. We have included the calculation sheets covering analysis within appendices.



6.2.2 Proposed Alterations

The building will be subdivided internally to create the various rooms, using new self-supporting partitioning.

Modern lightweight insulation will need to be added to the floor, walls, and roof to ensure compliance with the relevant Building Regulations.

There will be some modification of the existing external envelope (walls) to accommodate new windows and doors. The existing structural openings will be utilised for that purpose. The roof cover will be removed and replaced with suitable matching profiled sheeting.

The ground slab has been proof load tested to a much higher level of loading intensity than that from domestic usage, by commercial vehicle usage over several years. It has withstood that load testing without any evident distortion or distress. It is evidently a robust structural floor which is fit for purpose. The building insulation levels and services will be upgraded to comply with current standards.



7.0 **DISCUSSION**

The building is in good condition. There are no evident defects of structure or fabric.

The BGS record show that the prevailing soils are sandstone, or shaley/rocky sandy soils close to rockhead.

Detailed assessment of structural strength shows that this is satisfactory. The new internal non-structural dividing walls for the proposed alterations are for partitioning of room spaces.

8.0 **CONCLUSION**

8.1 It is considered that it is entirely feasible from a structural viewpoint to convert the building to domestic usage.

8.2 Alterations can be carried out without jeopardising the structural stability of the building.



G P Hughes B.Eng, C.Eng, MI Struct E, MICE
GMN206A/GPH/ JANUARY 2023

G Philip Hughes C.Eng; B.Eng; M.I Struct.E; M.I.C.E.
Member of the Association of Consulting Engineers

Cae Madog, Cilcain Road, Tafarn Y Gelyn, Mold, Flintshire CH7 5SF



APPENDICES

CALCULATIONS COVERING DESIGN CHECKS ON THE EXISTING
AND PROPOSED STRUCTURE