



**REPORT ON THE
CONDITION OF STRUCTURE
OF**

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

FOR

**MR J REDFERN
BIRCH HOUSE
BIRCH VALE
HIGH PEAK
DERBYSHIRE
SK22 1DH**

GMN206B/GPH/JANUARY 2023



1.0 BRIEF

- 1.1 This report was commissioned by Mr J Redfern, 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 Redfern 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, presently a storage building, is rectangular on plan and timber framed above a short height of (1500mm) of blockwork along the building perimeter. There is a full storey height enclosure of brickwork walls to a storage space at the front left-hand corner – occupying a quarter of the ground floor space, and full lower storey height brickwork for half of the length of the right-hand side wall from the front corner, where timber stairs to the upper storey are positioned.

The building sits on a platform of flat ground levelled in front of the sloping ground to the left hand side (the ground levels on the site slope from left to right, orientating facing the front of the building). The sloping ground is retained by a stone wall, separate and a short distance away from the left hand side of the building. The rear wall, blockwork plinth, retains a short



height of earth at the rear left hand corner. Works are in progress excavating the embanked soil around the building – which will we anticipate remove the earth contact and small earth pressure on the walls at one rear corner.

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 rails / purlins, which are supported by three collar type timber trusses – one each at front and rear and one at the building mid length. The trusses are incorporated into the timber framing of the upper storey, supported by timber posts / props built off the lower storey load bearing masonry, with edge beams at eaves and upper floor level supporting rafters and floor joists and tying the frame together. The timber frame is covered by vertical timber board cladding externally, above the plinth height masonry. The right hand half of the front, gabled wall is open for access. There is a gated opening in the right hand side wall, at the rear, with the timber floor edge beam spanning.

There are two loading access hatch door openings in the right-hand wall at upper storey level, and a personnel door opening in that wall in front of the large gated opening, and a window opening in the left hand wall, illuminating the brick enclosed storage space.

The ground floor is a ground bearing concrete slab.



5.0 PROPOSALS

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

Externally there will be new flush fitting windows and doors, which will necessarily require their own framing.



6.1 **CONDITION**

The condition of the existing building is good. The roof and wall lines are good, there is no evidence of any settlement or distortion.

There is, unsurprisingly, some weathering by moss staining, and some evidence of local degradation of a few timbers – the board cladding will be renewed - and the roof and floor timbers will need to have a through survey of condition in due course, as part of the refurbishment works, with treatment and repair, perhaps by like for like renewal in a few places.

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.

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 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/agricultural 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 evidently critically debilitating 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.



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APPENDICES

CALCULATIONS COVERING DESIGN CHECKS ON THE EXISTING
AND PROPOSED STRUCTURE