



Pandy Farm Barn

RIBA2 Report

for

ACE Building Contractors

Project Number: 11239

Date: April 2026

Rev: A

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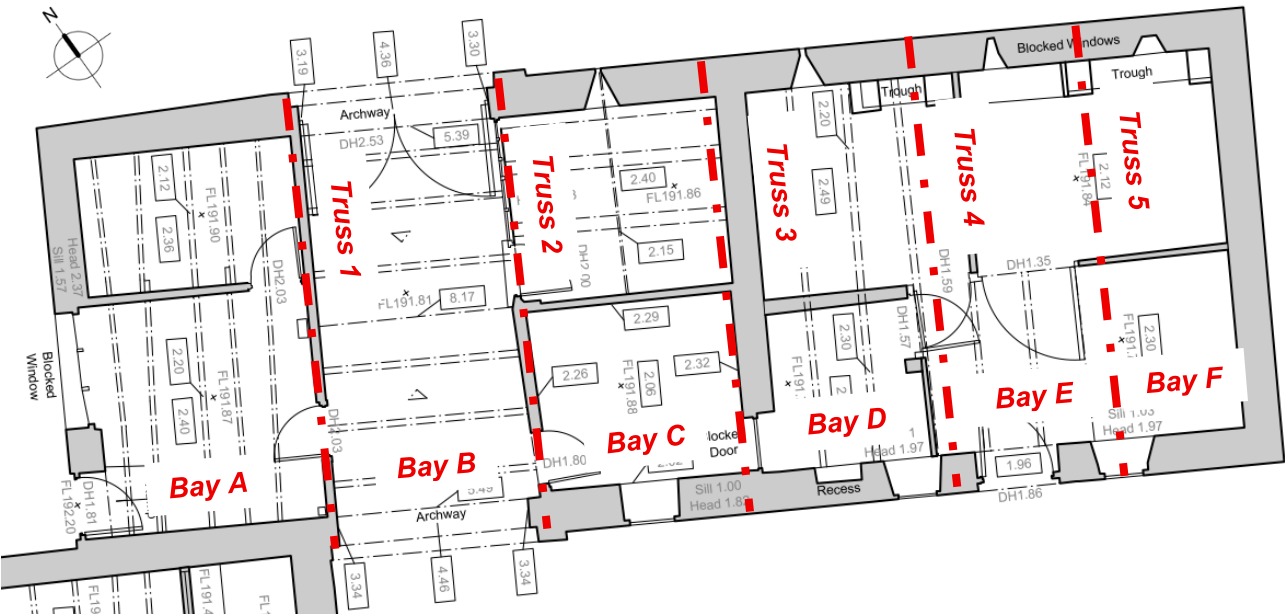
1.0 Introduction

- 1.1 Mann Williams were instructed by ACE Building Contractors to prepare an RIBA2 stage report presenting the structural form and condition of the Barn associated with the Pandy Farm complex in Merthyr Tydfil.
- 1.2 The report will specifically consider the proposed conversion into residential accommodation and the corresponding options for structural intervention and the potential nature and scope of impact on the existing building.
- 1.3 This report should be read in conjunction with Mann Williams' Feasibility Report, 11239.R.CR.01 and associated sketch 11239.SK01.
- 1.4 The Barn at Pandy Farm is Grade II listed, Cadw Ref 11406, NPRN 37630. See Appendix A – Listing Text.
- 1.5 The site visit took place on 17th Feb 2026 and the weather was overcast but dry.
- 1.6 The structural inspection was visual only and completed from floor level with limited ladder access and is therefore limited to fabric, members, parts of members, fasteners and connection details which are visible. No opening up of the fabric of the building was undertaken during the inspection, therefore no comment can be made, or inferred, on the condition or arrangement of hidden components, members, connections, fasteners etc, where not visible, observed or directly commented on.
- 1.7 No member sizes were recorded therefore no calculations have been undertaken to establish structural capacities. Where commented on, structural adequacy of members has been gauged based on available product literature, engineering judgement, precedent and visually identifiable evidence of performance such as apparent condition, integrity, defects, significant deflections, local failures or instability.

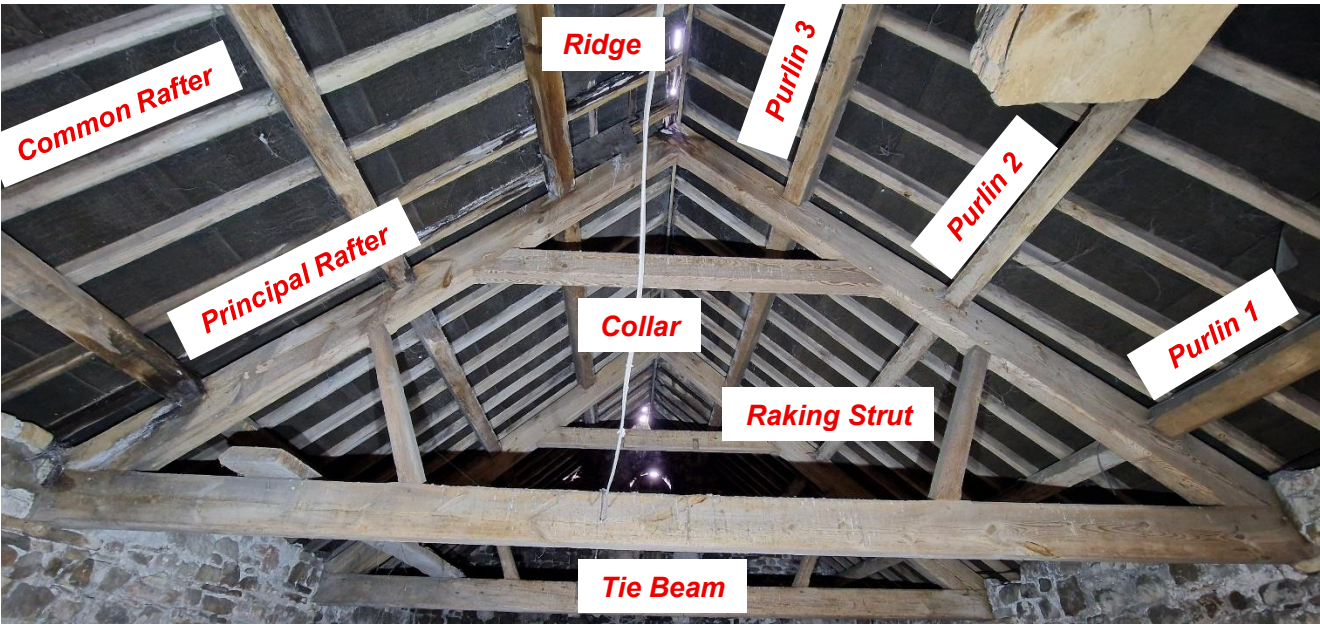


2.0 Referencing and Terminology

2.1 The following referencing and terminology will be used throughout the report.



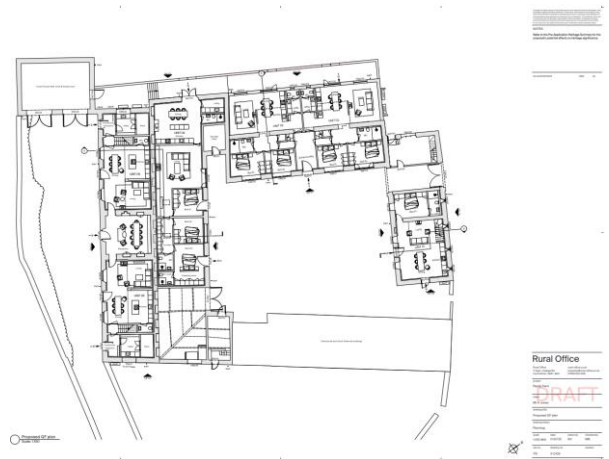
Ground floor plan with roof structure over



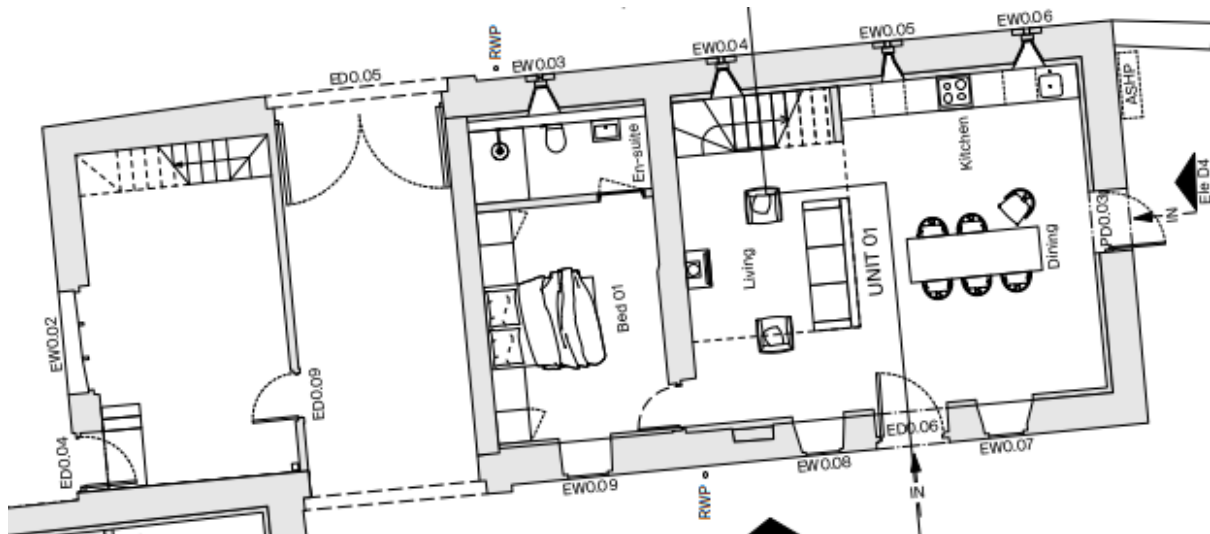
Typical Principal Rafter truss & roof components

3.0 Desktop Study

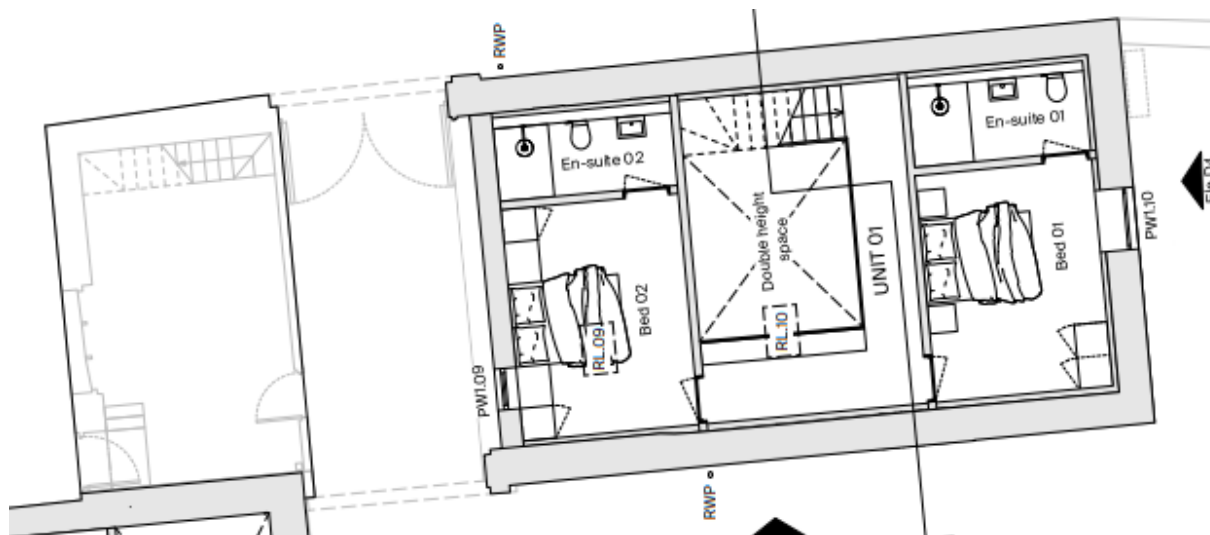
- 3.1 A full desktop study of the Pandy Farm complex was undertaken during the feasibility stage and is presented in Mann Williams report 11239.R.CR.01, including historic mapping, geology and an overview of the various building structures.
- 3.2 The Architect's current, draft, RIBA2 proposals were reviewed, and compared with the existing building on site.



Rural Office Dwg 179-3-0105 (Draft)



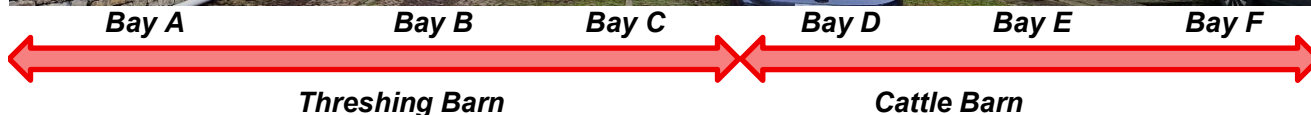
The Barn Proposed Ground Floor Plan



The Barn Proposed First Floor

4.0 Form, Condition & Discussion

- 4.1 The Barn is an early C19th six-bay, gable ended combination barn, with a cart passage through Bay B and a timber first floor in all bays other than B. Bays A, B & C form a typical threshing barn arrangement and Bays D, E & F were originally animal husbandry at ground floor, with hay store over, potentially a cattle barn given the proportions of the doorway.



South elevation

- 4.2 The roof comprises 5No softwood principal rafter trusses, (ref Truss 1-5), each with collars and raking struts, 3 purlins per pitch, (Ref P1-3), a ridge board and common rafters.
- 4.2.1 The roof structure was generally found to be original, structurally appropriate and robust with very little indication of deterioration and/or movement, having a visually true ridge line and no identifiable dishing in the plane of the roof.
- 4.2.2 Not unusually for gable ended barns, no wind bracing was observed.



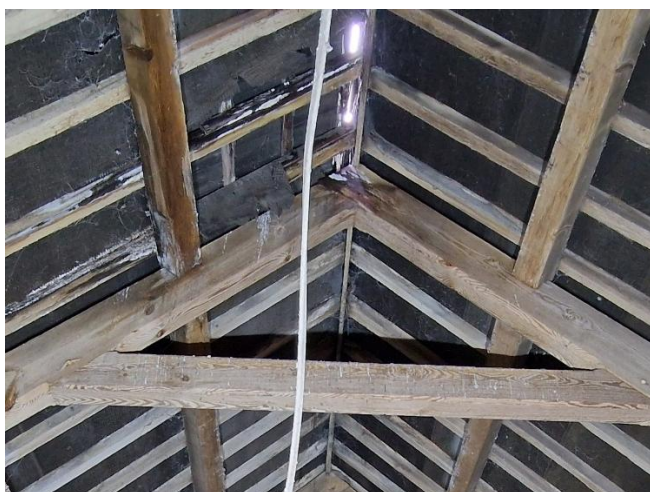
- 4.2.3 Roof finishes are non-original concrete tiles with a modern membrane beneath, generally in functional condition, with some indication of water ingress internally with limited, local, failures at the ridge, verges and eaves level adjacent to the east and west gables.
- 4.2.4 The south elevation has a full-length gutter, with a single downpipe adjacent to the cart passage. The north elevation has a partial gutter, over Bays A, B & C, with a failed downpipe array at the west end.
- 4.2.5 While the geometry of the roof was generally true, local failures of ridge tiles were observed in Bays B, C, & D, correlating with water damage noted internally.
- 4.2.6 Truss 4, between Bays 4&5, corresponds with the worst water ingress, with staining on Truss 4 and the adjacent purlins and common rafters. While it would be prudent to allow for local timber repairs, there does not currently seem to be any significant structural consequences.
- 4.2.7 Despite water staining in Bays B, C & D and corresponding risk of decay, only one roof member exhibited evidence of significant decay, (Bay B-South-P2), which may be the loss of sapwood, but is likely to require repair, augmentation or replacement.



East gable eaves failure



Failed ridge tiles over Bay D



Ridge tile failure and corresponding staining on Truss 4 and adjacent purlins and common rafters



Bay B, South, P2 – decayed section of purlin

- 4.3 The suspended timber first floor is a modern replacement. Bays A & C is an entire replacement while Bays D, E & F are modern joists supported on the original timber beams beneath. The end of Bay F, adjacent to the east gable the first floor is open, maintaining the likely historic vertical link between the hay loft at first floor and the hayracks beneath, (now missing).



Bay A & C, complete replacement floor



Bays D, E & F new joists over original beams

- 4.3.1 While no calculations have been undertaken, the first floor was generally found to be structurally adequate and robust, with no significant deflections or “liveliness” observed.
- 4.3.2 It is worth noting that the original timber beams in Bays D, E & F, spanning the full width of the barn, are likely propped by the ad hoc arrangement of partitions and posts below and may therefore require structural interventions to maintain a similar performance if these partitions are removed, as currently proposed.

- 4.4 The masonry is generally squared, semi-coursed rubble stone with a variety of mortar/pointing, predominantly with lime mortar, but some of which was cementitious. Fenestration and the cart passage pillars and archway are constructed in varying clay brick.
- 4.4.1 The pointing of stonework is in varying condition, with widespread erosion to a significant depth and the majority of the barn will require deep re-pointing.
- 4.4.2 The masonry was generally found to be in adequate structural condition with no widespread defects associated with settlement and associated movement.



Typical masonry



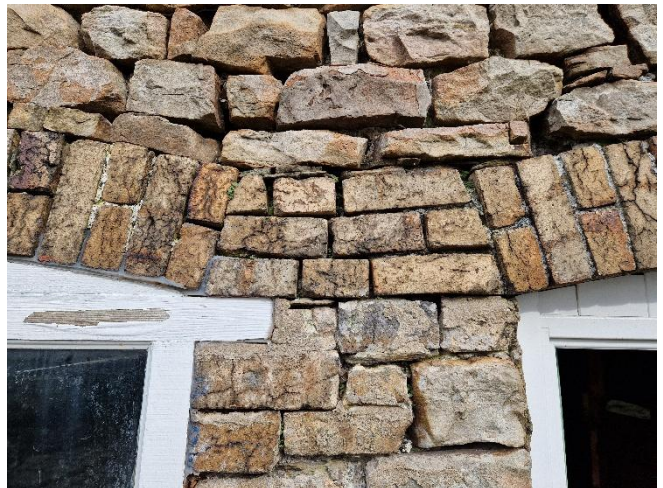
Cart passage south



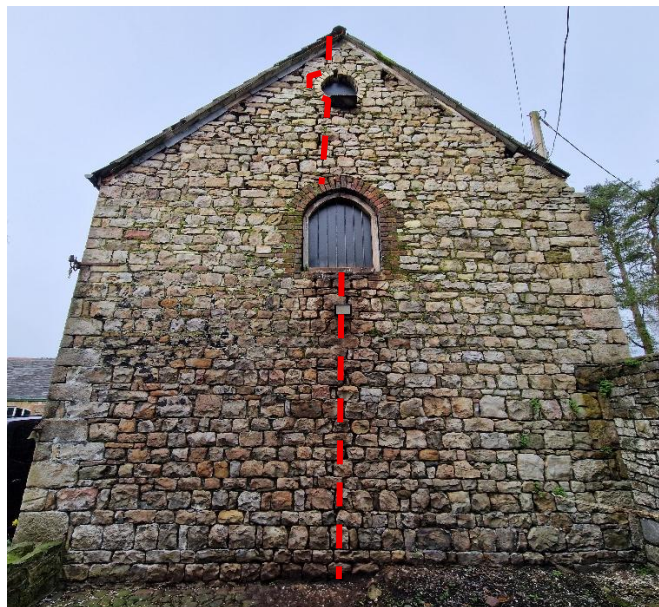
Cart passage north



Brickwork fenestration



- 4.5 The most significant masonry defect which requires remediation, irrespective of potential conversion works, is located in the east gable elevation.



- 4.5.1 The discontinuity in the masonry extends over the full height and is located approximately centrally within the gable elevation. The cause of the crack is currently unknown but may be attributable to minor settlement, which conversely does not seem to have significantly affected the adjacent masonry of the north or south elevations. The relative displacement of the two sides is not immediately apparent from a visual inspection of the crack, however the crack does seem visually to increase in width over its height, suggesting a relative settlement and rotation of the south portion of the wall to the north.
- 4.5.2 Alternatively, as the original first floor beams span parallel to the east gable and the floor directly adjacent to the east gable may have been a void to pass hay to the cattle beneath, the gable may have been effectively unrestrained over its full height. This would generate a large masonry panel which might be prone to bowing outward on plan and would therefore be prone to cracking centrally, especially with the discontinuities of the oculus light and hay door. If this is the case, then the current first floor arrangement, with joists built into the gable, would improve the situation structurally which may also be improved further with relatively minor interventions providing further tying to the gable from the first floor structure.
- 4.5.3 As the crack extends through the two existing features in the elevation, the circular light and hay door, it has caused damage to the structure of both associated masonry arches, which will require remediation irrespective of conversion.



Hay door arch



Oculus light arch

- 4.5.4 Multiple historic repairs of the crack are evident and all, including the apparently most recent, have subsequently cracked. This suggest movement is ongoing, if relatively minor.



Previous repairs to crack

- 4.6 The west gable requires general masonry consolidation at eaves level and a timber lintel at ground floor likely needs replacement, irrespective of conversion.



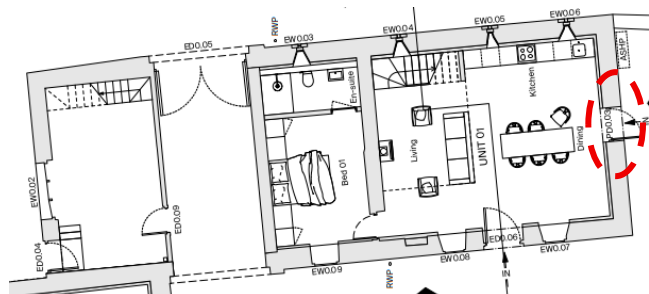
West gable high level masonry



Ground floor window lintel

5.0 Conversion

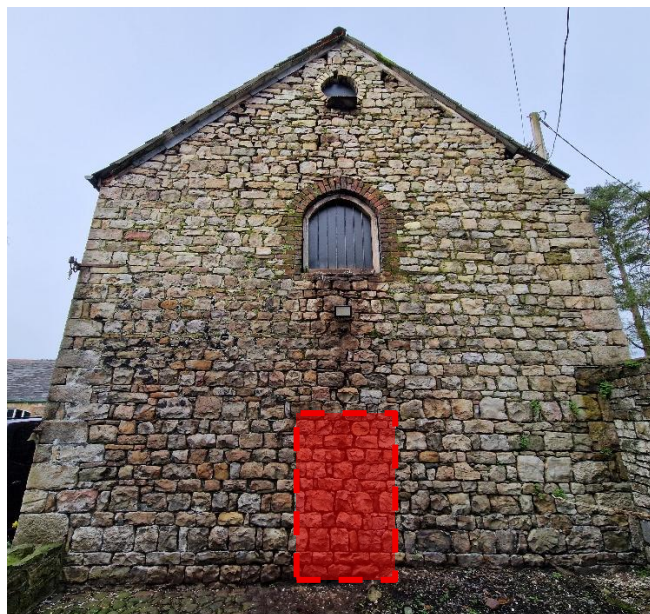
- 5.1 The draft proposals for conversion of the barn are sympathetic to, and correlate well with, the existing structure and will require minimal structural interventions to facilitate.



Proposed ground floor doorway

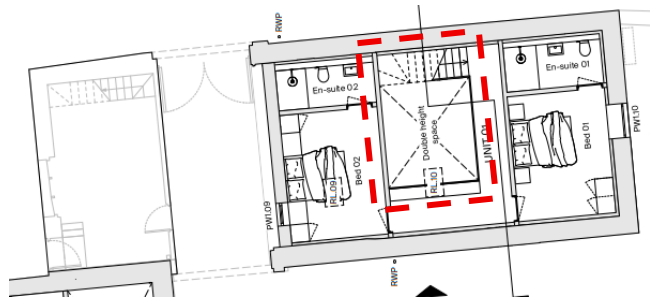
- 5.2 The most significant intervention is the proposed ground floor doorway opening in the east gable. However, while this provides further discontinuity to the elevation, this also affords an opportunity to reinforce the masonry laterally and centrally, (where it is required), via installation of the lintels required over the doorway, say pre-cast or in-situ concrete faced in timber if required.

- 5.2.1 Vertical and lateral reinforcement of the masonry with lintels, in conjunction with the potential for improved lateral restraint provided by the first floor, will be structurally beneficial to the masonry.



Proposed opening in east gable

- 5.3 At first floor level a double-height space is proposed approximately in Bay D. The only original fabric this affects are the original timber floor beams, spanning the full width of the barn, (north to south). If possible, the void and associated stairs could be arranged to allow the retention of the original timber beams in-situ.



First floor double-height space

- 5.4 Removal of the existing ground floor partitions in Bays D, E & F may necessitate strengthening of the original timber floor beams over, pending detailed calculation. The original timber members can be retained in full, but can be augmented and/or strengthened as required with additional timber or steel members.
- 5.5 Other than the specific items discussed above, the structural works required to the barn would be required irrespective of the proposed conversion.

6.0 Conclusions

- 6.1 The barn is in robust structural condition and exhibits no global or widespread evidence of deterioration to the roof, floors or walls - which are therefore largely original in form and condition. The current condition is likely attributable to the replacement roof structure and good maintenance, which has generally maintained a watertight building.
- 6.2 Structure is appropriately arranged and proportioned and suitable for adaptation to facilitate the proposed conversion with minimal structural intervention.
- 6.3 Generally, local repairs required to the roof, floors and walls are necessary irrespective of the proposed conversion.
- 6.4 In the specific instance of the east gable, which exhibits the most significant existing structural defect, the proposed interventions are likely to be beneficial to the original fabric.

Appendix A – Listing Text

Full Report for Listed Buildings



Summary Description of a Listed Buildings

Reference Number	Building Number	Grade	Status	Date of Designation	Date of Amendment
11406		II	Designated	30/07/1973	13/01/1988

Name of Property	Address
Barn at Pandy Farm	

Location

Unitary Authority	Community	Town	Locality	Easting	Northing
Merthyr Tydfil	Park			304041	207089

Street Side	Location
	Three farm ranges attached to rear of Pandy Farmhouse and Clock Tower at junction with Cyfarthfa Road (immediately opposite Cyfarthfa Castle park).

Description

Broad Class	Period
Agriculture and Subsistence	

History

Probably soon after 1825, later alterations and additions.

Exterior

Rubble-built barn flanking Brecon Road; dressed quoins, brick to oculus, ventilation slits and loft openings in gables. Pointed arched wagon entrance with projecting brick frame offset to right. Modern tiled roof.

Single-storey stables behind enclose NW and SW sides of farmyard. Coursed rubble with cambered freestone arches to openings. Slate roof to NW range, modern tiles to twin SW ranges.

Outer sides of SW ranges have (later) cambered openings with rusticated dressings and attached 2-bay coach-house set back. SE front adjoining the Clock Tower has two segmental arched windows and an offset doorcase with dressed surrounds.

Originally formed the stables, coach-house and stores to Cyfarthfa Castle.

Interior

Reason for designation

Group value with other listed items at Pandy Farm and Cyfarthfa Castle park.
