

Barn Range at Old Burfa

Design Statement

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1. Introduction

1.1. Overview

- a) This Design Statement describes the proposals made as part of an application for Listed Building Consent. It is intended that this document be read alongside and in light of the Heritage Impact Assessment. The work proposed affects the Grade II Listed barn range at Old Burfa and is submitted for consideration by the owners Mr and Mrs Duff Gordon.
- b) This application proposes the following items of work;
 - i. **Windows, Doors and Rooflights:** Removal of 3 modern roof lights installed without LBC in 2017. The application proposes to reinstate the slate roof.
 - ii. **Removal of 5 modern, double glazed timber frame windows:** The windows were installed without LBC by the sites previous owner. The application proposes to reinstate previous cast iron units which were stored on site following removal.
 - iii. **Conversion of Barns 3 and 4:** The Heritage Assessment identified what appears to be a suitable new use for Barns 3 and 4. This design Statement details the work required and the design decisions taken to achieve the new use.

2. Windows, Doors and Roof lights

2.1. Work undertaken without LBC

- a) Drawing EX.31 describes the work previously undertaken to the windows, doors and roof light without LBC in 2017. The reason for removal was reportedly due to the timber frames being rotten. New windows installed are a modern timber frame design fitted with double glazing as shown in Fig 2. and on EX.31.

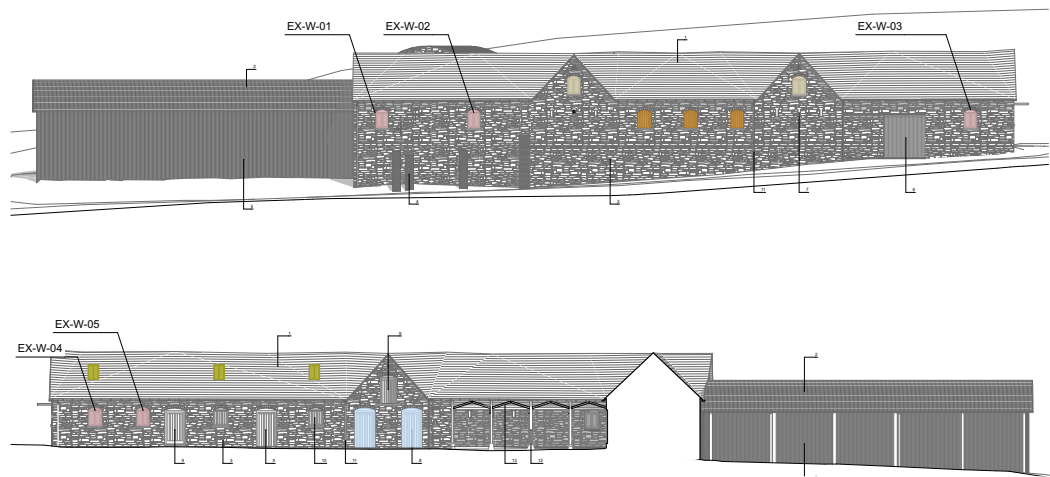


Fig.1. East (bottom) and West (top) elevations with unauthorised windows/doors highlighted

- b) The windows removed from the openings marked EX-W-01 to 05 were reportedly a cast iron frame set within a timber frame, the timber element of the window was discarded as rotten. However the cast iron section of the windows were apparently set aside and stored on site. A schedule of these is included as part of the application documents.



Fig.2. Window installed without LBC on western elevation of barn 3

2.2. Provenance

- a) The reinstatement locations proposed for the cast iron windows are based upon the anecdotal evidence provided by the previous owner of the site Mr Peter Michaels. Extensive attempts have been made to gain photographic evidence to demonstrate that the windows derive from the openings and to further understand the appearance of the timber frames they sat in, these attempts include the following sources;
- *The Royal Welsh Commission on the Ancient and Historical Monuments of Wales*
 - *Cadw*
 - *Google maps (street View)*
 - *The photographic records maintained by Michael Garner during the sites renovation.*
 - *Mr Peter Michaels (previous owner)*
 - *Mrs Ruth Jones (who sold the site to Mr Michael)*
 - *Counsellor Michael Jones, who was born in the house and sold it to Michael Garner.*
- b) From the above, limited photographic evidence has been found. Photographs from Cadw's 1992 Listing visit show windows EX-W-04 and 05 in-situ. As a starting point this verifies that these were the windows removed by Mr Michaels.



Fig.3. Cadw photo from 1992 Listing showing metal frame windows and now demolished outshut.

- c) The testimony of Counsellor Michael Jones also records that the windows were in situ when he occupied the house. This means that the windows can be dated back to the 1950's. Beyond this their history is uncertain.
- d) With this in mind it is noted that the windows are unusually ornate for an agricultural building. And that louvred timber windows might more conventionally be expected. It is also noted that two existing openings (on the yard side elevation of Barn 2) are louvred.



Fig.4. Yard side elevation showing timber louvred windows of barn 2



Fig.5. Louvred window



Fig.6. Louvres window detail

- e) Inspection of the louvred windows reveals that the frames, made of oak, are considerably older than the vertical louvres which are made of softwood (larch) and far less weathered. It is possible that the louvres were replaced at some point. It is also noted that when the metal windows are positioned against the timber louvred frames they form a perfect fit to the outer oak frame.



Fig.7. Barn 2 timber louvred window from inside with metal frame placed over.

- f) The Oak frame sizes also match the openings of EW-W-01 - 05, which according to Peter Michaels had matching (rotten) oak frames. It therefore seems highly likely that the metal frames were constructed specifically to fit into these frames and based on the detailing of the windows most likely installed during the late C19th. If so they can be considered an important part of the buildings historical narrative.

- g) The evidence demonstrating that the metal windows stored on site were from the openings now containing modern double glazed windows is compelling. Additionally, the surviving frames in barn 2 provide a good reference for the design of the oak frames the metal windows were fabricated to fit within.

2.3. Design Options Considered for windows EX-W-01 to 05

Option 1: Leave as existing

The windows that have been installed are considered domestic in nature and as such detract from the barns character, the modern double glazing exacerbates this.

- harmful to heritage value of the barns

Option 2: Remove and replace with new windows of a different design

It could be suggested that timber louvred windows be installed because there is evidence of these in barn 2 and are a more typical detail for the typology. However the metal windows are a part of the buildings development.

- Possible loss of significant fabric, but an improvement on the existing windows.

Option 3: Remove and replace with the cast Iron Windows stored on site

Following the available evidence suggests that this is an appropriate response.

- Retaining an unusual window for this typology that speaks of social hierarchy and local practice during the sites lifetime. Given the body of evidence in place this is considered the best option at present.

2.4. Proposed Work

- a) The proposal is to remove the existing windows as indicated on Fig.1 and replace with windows as shown on drawings DT.70.
- b) The colour chosen is based upon paint flecks found on the unpainted frames. Fig. 10 shows the paint flecks used for reference.



Fig.10 Close up of surveying paint flecks on metal frames.

2.5. Remaining doors and rooflights highlighted on drawing EX.31.

- a) The two upper level windows (T1A) on the west elevation are reported to have previously been ventilation panels. It is proposed that the modern timber windows installed here are removed and replaced with new timber and metal assemblies to match the windows of EW-W-01 to 05 and as per DT.70.
- b) The West elevation has an additional Three openings replaced with new shutters during the 2017 work. The Type T2 shutters are reported to have been replaced as like for like. Whilst this cannot be confirmed the style is considered to the character of the site and barns. As such it is proposed that these be retained.
- c) The East elevation has had two stable door installed (Type T3), the original frame remains and the doors are reported as like for like replacements. While this cannot be confirmed the style of these is suitable to the character of the barn and it is proposed that these also be retained.
- d) The East elevation has 3 roof lights installed (T4 on EX.31). These are to be removed. Slates to match the existing slates will be used to infill.

3. Conversion of Barn 4

3.1. Summary of proposed work

- a) It is proposed to convert Barn 4 into additional living space supporting the main house. The barn would provide breakout living/entertainment space and an Art Studio. In support of this use the barn will accommodate bathroom facilities. The space may occasionally be used as sleeping accommodation for family guests, but this is not its primary use, use as a holiday let is not intended.
- b) In order to achieve the conversion the following work requires design consideration.
 - Insulation of the existing roof.
 - Insulation of the walls
 - Insulation of the floor
 - Sprinkler system requirements
 - Existing Windows, currently single glazed.
 - New windows/doors to the open barn front.
 - Provision of a heating system
 - Disposal of Foul Drainage
 - Ecology
 - Structural Work to West Wall of Barn 4

3.2. Insulation of the existing roof

- a) The existing slate roof has a breather membrane installed over the rafters. This was installed by the previous owner without LBC. Permission is sought to retain the membrane and incorporate it into the new roof build up.
- b) A breathable roof construction is proposed. This would only require intervention below the membrane via an underlining of sheepswool and cork boards. The dark brown cork boards would remain exposed.

3.3. Insulation of the Walls

- a) The existing stone walls are considered an important part of the buildings character, to cover these would be harmful to the heritage values of the building and so it is proposed that these remain exposed. Evidence of lime washing can be found on the internal faces of Barn 4 and it is proposed that the internal walls of barn 4 be white washed. Barn 3 would remain unpainted.

3.4. Insulation of the Floor

- a) The existing Victorian bricks and evidence of a previous internal stone partition are considered to have heritage value. These will be retained. It is proposed that the ground levels adjacent to these areas is lowered by circa. 300mm to allow a 200mm layer of foamed glass insulation. This will maintain breathability whilst introducing a capillary break. A 100mm limecrete slab would be laid over the top to bring the floor levels back to the existing levels (including variations in the existing levels). The limecrete would be laid so as to 'mesh' with the retained floor finishes and polished with egg whites to create a hardwearing, breathable surface appropriate for an agricultural building.

3.5. Sprinkler system requirements

- a) As a building used for residential purposes a new sprinkler system is required unless it is considered that the system would be harmful to the character of the building.
- b) It is considered that sprinkler pipework can be accommodated within the insulation zone proposed on the roof. Sprinkler heads are undoubtedly detrimental to the character of Listed buildings, even the 'concealed' type heads have a large modern, plastic cap which looks out of place on traditional ceilings. However in this instance the height of the roof combined with the dark, variegated colour of the cork boarding means they will be difficult, if not impossible to see. To aid with the visual loss of the concealed sprinkler heads the caps will be a dark colour to blend with the cork boards.

3.6. Windows, reinstated metal frames

- a) If acceptable the reinstatement of the metal framed windows will be single glazed. If it is felt that secondary glazing will harm the character of these openings and so it is proposed to have single glazing only to these openings. Removable, loose fitting internal shutter boards will be employed for heat retention when the building is not in use or when natural light is not required.

3.7. New windows to the open barn front

- a) Drawing DT.71, Proposed Edge Detail describes the relationship between the proposed doors/glazing and the existing fabric. The design approach sets the new glazing behind the existing openings allowing these to take precedence. The frameless glazing would read as a modern addition, but one that defers to the original architecture.

3.8. Provision of a heating system

- a) The proposed limecrete slab would accommodate underfloor heating pipes allowing radiator free spaces appropriate to the character of the barn.

3.9. Disposal of foul drainage

- a) The proposed barn conversion is providing support accommodation for the existing house and its occupants. The number of occupants using the house/site will therefore not change. As such the intention is to utilise the sites existing septic tank.

3.10. Ecology

- a) An ecology report including a full bat survey has been submitted with the application.

3.11. Structural work to West Wall Barn 4

- a) As noted in the Heritage Statement the west corner wall of barn 4 has clearly been subject to long term movement. This is evidenced by the multiple buttresses along the lower end of the western wall. The buttresses have failed to arrest the movement as evidenced by expansion of multiple cracks. The wall has been analysed by a Structural Engineer with appropriate experience and a suitable solution proposed.
- b) It is thought that the movement is caused by a lack of restraint from the existing trusses. Most Likely a consequence of the buildings height increase as noted in the Heritage impact Statement. The existing buttresses are significantly below this level due to the natural landscape levels and so this explains why they have failed to prevent further movement. The proposed solution is therefore to enable the existing truss to establish the correct level of restraint.
- c) It is also considered that the existing wall has moved beyond the point at which the buttresses over restraint at ground level. Three options exist to correct this. Rebuild the wall, install a bigger buttress or install a ground anchor. Rebuilding the wall is considered the most harmful of the three options to the buildings heritage values. A new buttress would need to be significantly larger than the existing buttresses, because of the lane this option is not possible. Therefore a ground anchor is considered the most suitable option.
- d) Overall, the proposed solution will not alter the external appearance of the barn, nor will it impact upon the significance of the nearby Victorian brickwork floor bricks.

Grass Roots Ecology - 2018 Mitigation proposal Barn 1 & 2

OLD BURFA, EVENJOB, PREST
Bat



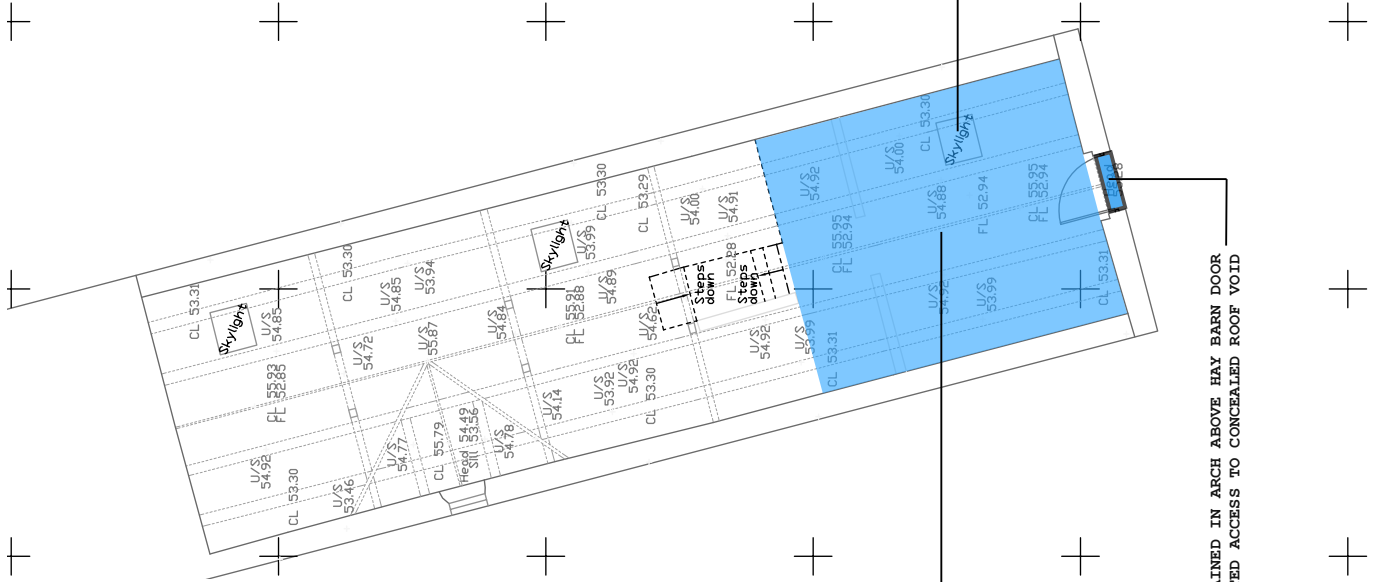
SPECIFIC BAT SURVEYS (INCLUDING TWO DUSK EMERGENCE AND ONE DAWN RE-ENTRY) PERFORMED IN AUGUST AND SEPTEMBER 2018 BY GRASS ROOTS ECOLOGY HAVE CONFIRMED ROOSTING LESSER HORSESHOE BAT (ROOF VOID AS A NIGHT AND DAY ROOST), COMMON PIPISTRELLE/SOPRANO PIPISTRELLE (UNDER ROOF TILES AND CREVICES WITHIN EXTERNAL STONERWORK - DAY ROOST) WITH EVIDENCE TO SUGGEST BROWN LONG-EARED BAT (ROOF VOID - NIGHT ROOST/FEEDING PERCH AND POTENTIALLY AS A DAY ROOST)

PROPOSED WORK TO CONVERT BUILDING INTO HABITABLE USE WOULD IMPACT ON ROOSTING PROVISION FOR LESSER HORSESHOE BAT AND BROWN LONG-EARED BAT AND POSSIBLY PIPISTRELLE BATS SHOULD EXTERNAL REPAIR/RE-POINTING WORKS BE REQUIRED

RETAINING A DEDICATED ROOF VOID (AS SHADED BLUE) FOR LESSER HORSESHOE BAT AND BROWN LONG-EARED BAT IS CONSIDERED APPROPRIATE TO MAINTAIN AND ENSURE LONG-TERM ENHANCEMENT FOR THE POPULATIONS. ANY REPAIR WORK WHICH WOULD RESULT IN THE LOSS OF EXTERNAL ROOSTING SITES FOR CREVICE-DWELLING BAT SPECIES WOULD BE REPLACED THROUGH BUILDING-IN BAT BOXES/TUBES

SUCH MITIGATION (AND PRECAUTIONS DURING WORKS) WOULD FORM PART OF A EPS DEVELOPMENT LICENCE TO BE OBTAINED FROM NATURAL RESOURCES WALES FOLLOWING PLANNING CONSENT

EXISTING SKYLIGHT TO BE REMOVED



CONCEALED ROOF VOID (SHADED BLUE) AT FIRST FLOOR TO RETAIN ROOSTING OPPORTUNITIES FOR LESSER HORSESHOE BAT AND BROWN LONG-EARED BAT. VOID TO MEASURE APPROXIMATELY 5M(W) X 6M(L). NORTHERN ELEVATION OF VOID TO BE PARTITIONED OFF FROM ADJACENT HABITABLE SPACE. EXISTING TIMBER ROOF STRUCTURE AND BITUMASTIC ROOF FELT PROVIDE GOOD ROOSTING OPPORTUNITIES WITH NO MODIFICATIONS CONSIDERED NECESSARY

BAT ACCESS POINT MAINTAINED IN ARCH ABOVE HAY BARN DOOR AND TO PROVIDE UNINTERRUPTED ACCESS TO CONCEALED ROOF VOID

CLIENT: Mr Peter Michael
REF: 1202
REV: A
DATE: 06.12.18
SCALE: nts

