



AGENT'S HOUSE, BRYMBO

PRELIMINARY BAT ROOST ASSESSMENT AND EMERGENCE SURVEY

DATE	ECOLOGIST	APPROVED	VERSION	COMMENTS
11/02/2020	Lucy Boyett	Keymar Wake	1	Original
14/07/2020	Rhian Hughes	Lucy Boyett	2	Addition of emergence survey

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Executive Summary

Site	Agent's House, Brymbo , LL11 5AX SJ 29470 53475
Surveyors	Lucy Boyett
Proposed work	Renovation of the former Agent's house, to create an exhibition space.
Type of survey	Preliminary Roost Assessment (PRA)
Results of survey	• No evidence or signs of bats were found within the Agents House, during the PRA. • A number of potential roosting features were identified externally, including cracks and crevices in the stonework and gaps above boarded windows and behind corrugated metal fascias. • Internally there is a cavity between the external walls and the chipboard structure, which has been built inside; this cavity area is suitable for crevice dwelling bats. • A common pipistrelle was observed emerging from an external crevice in the building.
Survey conclusions	• The surrounding area has 'highly suitable' habitat for commuting and foraging bats with good connectivity to further suitable habitat areas. • One pipistrelle was observed using the building as a day roost • Two blue tits were observed nesting in crevices within the building, there is also potential for nesting birds behind the fascias.
Recommendations and mitigation	• The building is being used by an individual bat, however the proposed works will not affect the crevice where the bat was observed emerging, therefore work can take place under reasonable avoidance measures (section 8 for full details) • Two bat boxes and six bird boxes to be installed in the vicinity of the Agents house. • If a bat is found during works, all works must stop and a licence obtained from the species licensing body Natural Resources Wales (NRW).

	• There is potential for birds to be nesting on or in the building, therefore if works were to be conducted within bird nesting season (from March to September [inclusive]) then a thorough search for any nesting birds should take place immediately prior to the commencement of works.
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1.0 Introduction

- 1.1 Enfys Ecology Limited were commissioned by TACP Architects on behalf of Brymbo Heritage Trust, to undertake a Preliminary Bat Roost Assessment (PRA) of the Agent's House at The Brymbo Heritage Trust site, Brymbo.
- 1.2 The proposed works comprise the renovation of the former house, to create an exhibition space.
- 1.3 The house has been empty and in a derelict state for many years. In February 2017, due to concern over the structural safety of the roof and walls, emergency works were undertaken and the roof structure was replaced and covered with corrugated metal. In February 2018, a two-storey structure was constructed within the existing walls, using chipboard. This was to create a temporary useable space for storage and for use as office space, prior to the proposed renovation works.
- 1.4 The survey was commissioned to determine whether the proposed works would affect protected species: specifically bats and nesting birds. A Preliminary Roost Assessment was undertaken on 5th February 2020 and two emergence surveys were carried out on 6th May 2020 with a follow up on 3rd June 2020. This report is valid for a period of two years from this date in accordance with best practice.
- 1.5 All British bats (and roost sites) are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended). In addition, all bats are classified as European Protected species by The Conservation of Habitats and Species Regulations 2017 (as amended). Under this legislation, it is an offence to kill, injure or disturb a bat, or to destroy any place used as a shelter by bats.
- 1.6 Should evidence of bats be found and it is deemed likely that they will be disturbed by the proposed works; a licence from Natural Resources Wales (NRW) must be obtained.

2.0 Site description

- 2.1 The building comprised a two-storey high house on the site of the former Brymbo Steelworks.
- 2.2 The house is in a rural area approximately 250m of Brymbo village (approximate grid reference SJ 29470 53475) (Figures 2.1 and 2.2). The wider area is a mixture of residential buildings, agricultural fields and a large network of linear broadleaved woodlands. The house has broadleaved woodland immediately to the rear (south), which runs east to west, connecting to further woodlands in the area. There are numerous small ponds within a 150m radius of the house.

Brymbo Heritage Site: Machine Shop, Pattern Shop and Foundry Area - Preliminary Roost Assessment & Bird Survey

- 2.3 There is one statutory designated site within a 1km radius, which is Brymbo Fossil Forest Site of Special Scientific Interest (SSSI). This site is designated for its geological interest.
- 2.4 Mount Zion Wildlife Site and Brymbo Pony Fields Wildlife Site are two non-statutory designated sites within a 1km radius. These are not designated for bats.



FIGURE 2.1 AERIAL VIEW OF THE LOCATION AND SURROUNDINGS. THE SURVEYED HOUSE IS SHOWN IN RED.
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FIGURE 2.2 AERIAL VIEW OF THE LOCATION AND SURROUNDINGS. © GOOGLE 2020

3.0 Methodology

3.1 Preliminary Bat Roost Assessment (PRA)

- 3.1.1 The building was assessed for any signs of bats; these include droppings, feeding remains, and other indicative marks, plus features of potential use to bats such as crevices, cracks and other holes, and any potential access points into the building. High-powered torches were used to inspect any identified features, and an endoscope was used to investigate any gaps or crevices, where appropriate. Both the interior and exterior of the building was examined.
- 3.1.2 The building inspection was carried out on the 5th February 2020 by ecologist Lucy Boyett (accredited agent under bat licence number S087351/1). Building and potential roost assessments were carried out following the guidelines set by the Bat Conservation Trust Good Practice Guidelines (Collins, 2016). Photographic evidence was taken where necessary.
- 3.1.3 Bat emergence surveys were carried out on the Agents House on 6th May 2020 and 3rd June 2020, both of which are within the peak bat survey months of May to August (inclusive).
- 3.1.4 During the emergence surveys, the building was monitored by two surveyors. Records were taken of any bats observed emerging from the buildings, and of any other bat activity taking place in the area during the survey. The surveyors used Batbox Duet detectors and Anabat Express bat detectors were positioned around the buildings to record any bat calls for further analysis. As per the guidelines the dusk emergence survey began approximately 30 minutes before sunset and continued for approximately 90 minutes after sunset.

3.2 Limitations

- 3.2.1 The chipboard room structure was built within the existing external walls, with a small cavity between. It was not possible to inspect this cavity between the two walls or to inspect any potential space between the chipboard and the corrugated metal roof.
- 3.2.2 Bats are a difficult group to survey, and as they are highly mobile animals, it is possible that they could move into a building after the survey has occurred. Therefore, it cannot be guaranteed that bats will not move into the building following the survey.

4.0 Building Description

4.1 External

- 4.1.1 The house comprised a two-storey high main section, with a small single storey lean-to on the eastern side (Photos 4.1 & 4.2).

- 4.1.2 The house was constructed of un-rendered stone, had a corrugated metal sheet roof and both corrugated metal and chipboard fascias. To the front of the house were seven windows and a doorway, which were boarded up with chipboard and sealed with expanding foam (Photo 4.1). To the rear were two small windows, which were also boarded up (Photo 4.2). There was a large wooden doorway on the western end of the house and a door into the lean-to on the eastern end of the house.



PHOTO 4.1 NORTHERN SIDE OF THE HOUSE



PHOTO 4.2 SOUTHERN SIDE OF THE HOUSE

4.2 Internal

- 4.2.1 Internally, the walls and ceiling were lined with chipboard, creating a large double storey height room, which was used for storage (Photo 4.3 & Photo 4.4). This was accessed through the large wooden door on the western side of the building (Photo 4.4). Two rooms had been created on the eastern side of the building, one on the ground floor and another on the first floor, reached by a wooden ramp (Photo 4.5).



PHOTO 4.3 & 4.4. WALLS LINED WITH CHIP BOARD TO CREATE A LARGE DOUBLE STOREY HEIGHT ROOM



PHOTO 4.5. FIRST FLOOR ROOM

5.0 Survey Results – Building Inspection

5.1 External

- 5.1.1 There were a number of deep cracks and crevices in the stone work, some of which were likely to have spanned the thickness of the wall and provided access into the cavity, but due to their position and/or height they could not all be inspected with an endoscope. There were large gaps underneath the corrugated metal fascias and above the boarding covering two of the windows.

5.2 Internal

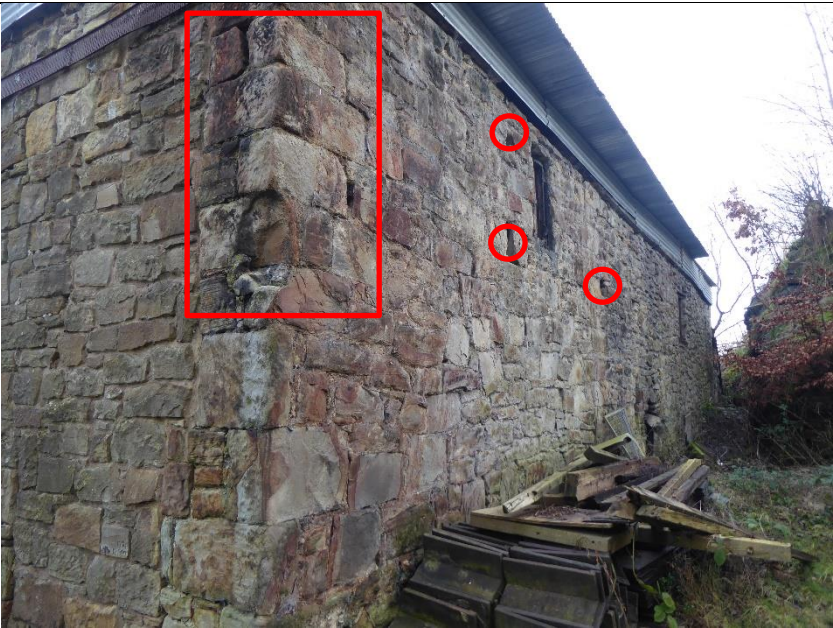
5.2.1 Internally the chipboard was well sealed, apart from the large doorway, which had a small gap at the top. From this doorway, the gap between the external wall and the chipboard was visible.

5.2.2 No bats or signs of bats were seen during the inspection.

5.2.3 No signs of nesting birds were found within the building but during the survey there was, what sounded like, a bird that had become trapped in the cavity between the wall and the chipboard.

TABLE 5.1 DESCRIPTION AND PHOTOS OF POTENTIAL ROOSTING FEATURES (SHOWN IN RED)

Description of Potential Roosting Features	Photo
Cracks and crevices in stonework	

	
Gaps under corrugated metal fascia	

	
Gaps above boarded windows	

Gap above door	
Cavity between the external wall and internal chipboard	

6.0 Results – Emergence Surveys

- 6.1 Following on from the Preliminary Roost Assessment, two emergence surveys were carried out. Both surveys were carried out on the same evenings as the surveys of the Foundry area. Table 6.1 summarises the survey conditions.

TABLE 6.1 – SUMMARY OF SURVEY DETAILS

Ref no.	Survey type and number	Date	Start time	Sunset / sunrise time	End time	Temp. at start	Weather
1	Dusk Emergence	06/05/2020	20:20	20:50	22:20	12.5°C	Dry, still, mild
2	Dusk Emergence	03/06/2020	21:01	21:31	23:01	10.7°C	Overcast, rained until early evening

6.2 Bat emergence survey 1

- 6.2.1 The first bat survey was undertaken on 6th May 2020 with two surveyors, led by Keymar Wake (accredited on NRW licence number S087351/1) and an assistant.
- 6.2.2 The first bat to be seen was a common pipistrelle (*Pipistrellus pipistrellus*) at 21:00 flying along the north of the building. Table 6.2 summarises the bat emergences and general bat activity recorded on the site.

TABLE 6.2 – SUMMARY OF RESULTS FROM SURVEY 1

Time	Species	Emergence (Y/N)	Comments	
21:09	Common pipistrelle	Y	Emerged from the north west corner of the building	
General activity		Foraging activity by common pipistrelle round the building. Brief <i>Myotis</i> pass at 21:51. Two barn owls observed emerging from wall to the rear of the foundry area.		

6.3 Emergence survey 2

- 6.3.1 The second bat survey was undertaken on 3rd June 2020, it had rained during the day but cleared up for the evening. The survey was again undertaken with two surveyors, Keymar Wake and Peter Kneen, both accredited on NRW licence number S087351/1.
- 6.3.2 No bats were observed emerging. The first bat activity was a common pipistrelle which came from the Foundry area to the north west at 21:51. Foraging activity continued throughout the survey. Two blue tit nests were observed nesting in gaps within the building and two barn owls observed emerging from wall to the rear of the foundry area.

7.0 Conclusions

- 7.1 The proposed works comprise the full renovation of the former house, to create an exhibition space.
- 7.2 Under the Good Practice Guidelines (Collins, J., 2016), the surrounding area has 'highly suitable' habitat for commuting and foraging bats with good connectivity to further suitable habitat areas.
- 7.3 Deep cracks and crevices within the stone work provide some potential for roosting bats, particularly on the southern side of the building, which faced the woodland. The cavity between the stone walls and the chipboard would provide suitable roosting space for crevice dwelling bats. It is possible for bats to access this cavity between the external wall and internal chipboard walls from a small hole in the door, and it may also be possible for bats to access the cavity from under the fascias and crevices in the walls; however, it was not possible to confirm this during the PRA. Any spaces present under the corrugated metal roof and fascias are unlikely to be used by bats due to being subject to extreme temperature changes.
- 7.4 Although the inside of the main room, within the chipboard walls, would provide a suitable place to roost, no bats or signs of bats were seen during the survey and therefore it is not likely to have been used by bats in the recent past.
- 7.5 The emergence survey confirmed that the building is being used by at least one common pipistrelle, however the bat emerged from an external crevice, as this can be retained, reasonable avoidance measures could be put in place rather than a licence required for this proposed work. Other crevices will also be identified, which can be retained for bats, and birds were possible.
- 7.6 No signs of previous bird nests were seen during the survey; however there was a bird heard within the cavity between the walls and the chipboard during the survey so they are able to access this space, and there is potential for nesting birds within the crevices in the stone work and behind the fascias. Blue tits were also observed nesting in an external cavity.

8.0 Reasonable Avoidance Measures and Enhancements

- 8.1 From the results of the emergence survey, it can be determined that the Agents house is currently being used by one individual pipistrelle. This was observed emerging from an external crevice, which can be retained as part of the works.
- 8.2 The impact of the development will be low, as it will cause disturbance to a day roost used by individuals of a common species, which has a low conservation status (Mitchell-Jones, 2004), especially as the roost will be retained. As this is the case, the works can take place under reasonable avoidance measures, rather than a licence being required.
- 8.3 If bats are found, whilst work is being carried out, the work must stop and a licence for the works must be obtained from the species licensing body Natural Resources Wales (NRW).
- 8.4 *Mitigation measures*
- Prior to the start of works, a toolbox talk will be given to everyone involved in the project and a log of this will be kept.
 - The works should be carried out in March/April or September/October, due to repointing works to avoid winter months (November – February), when bats may be in hibernation, and avoiding the summer months due to nesting birds.
 - If works were to be conducted within bird nesting season (from March to September [inclusive]) then a thorough search for any nesting birds should take place immediately prior to the commencement of works. If any active nest is recorded then all works to that section would have to cease until the chicks have fledged. It is an offence to intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built with unlimited fines and/or imprisonment.
- 8.5 *Enhancements*
- Some crevices in the stonework should be retained, or created where possible, for crevice dwelling bats. Crevices will only be left where the natural crevice continues to a minimum depth of 10cm. The crevices should be 18-25mm x 50mm in size and this can be created by inserting a piece of timber of this size into the gap, tilting downwards for drainage. After pointing, the timber can then be removed creating roosting points. Crevices which provide roosting potential will be checked with an endoscope prior to sealing, or following an emergence/re-entry survey immediately prior to works.
 - Suitable crevices left unsealed can also provide potential for nesting house sparrows, and bird boxes can be erected in the area to provide extra nesting opportunities – these will be built with the volunteers and erected in the trees surrounding the

Agents house. A minimum of six boxes should be made, a mix of open fronted, 28mm hole and 35mm hole boxes.

- Two bat boxes will be erected on the southern side of the Agents house, these boxes can be inbuilt or external woodcrete style boxes.

8.6 *Lighting*

8.6.1 Any lighting round the Agent's house will avoid lighting any of the bat mitigation areas (such as the bat boxes and the gaps in the pointing retained/created for bats). Below is general lighting guidance in relation to bats.

8.7 *General Lighting Guidance*

- During the construction phase, works should be avoided within 1 hour of dawn and dusk to avoid disturbance to nocturnal animals (especially during the time when bats are active April – October). If works outside this time are needed, all lighting should be directional and be directed away from the woodland edges to the south and west and any other sensitive areas identified during the emergence surveys.
- There must be no lights focused on individual trees or the woodland edge.
- The times during which the lighting is on should be limited to provide some dark periods during the night.

The following luminaire specifications are provided by Bat Conservation Trust and Institute of Lighting Professionals (2018) and must be incorporated into the lighting plan for the proposed development.

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.

- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, ie no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

9.0 Legislation

9.1 *Bats*

9.1.1 The Wildlife and Countryside Act (WCA) 1981 (as amended) forms the key legislation protecting habitats and species in the UK. All UK bat species are fully protected under the 1981 Act through inclusion on Schedule 5. All bats are also listed under Schedule 2 of the Conservation of Habitats and Species Regulations (2017) which transcribes the EC Habitats Directive into UK law. In combination, this legislation makes it an offence to:

- Deliberately or recklessly take, injure or kill a bat;
- Deliberately or recklessly damage or destroy a place or structure used by bats for shelter or protection;
- Deliberately or recklessly obstruct access to a bat roost; or
- Deliberately or recklessly disturb bats while occupying a roost.

9.1.2 Bat roosts are protected under these laws whether the animals are present at the time of survey or not. Under both laws the Welsh Government and D.E.F.R.A. are empowered to issue licences to carry out work to bat roosts for reasons of overriding public interest. It is not illegal to tend to a disabled bat pending recovery.

9.2 *Birds*

9.2.1 In addition, under the Wildlife and Countryside Act, 1981 (as amended) and the Countryside and Rights of Way, 2000, all wild birds, their nests and eggs are protected during the breeding season (typically March to August inclusive). This makes it an offence to:

- Intentionally kill, injury or take any wild bird.
- Take, damage or destroy the nest of a wild bird included in Schedule ZA1.
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built.
- Take or destroy an egg of any wild bird.

10.0 References and Useful Information Sources

Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1

Mitchell-Jones, A. J (2004) *Bat Mitigation Guidelines*, Natural England