

Erbistock Mill, Erbistock, Wrexham
Further Bat Dusk Survey

8th July 2023

INTRODUCTION

Following an initial Bat Scoping Survey undertaken on the 9th November 2023, Kingdom Ecology have completed further bat dusk emergence surveys at Erbistock Mill, Erbistock, Wrexham, LL13 0DW (National Grid Reference SJ35424220). The additional bat dusk surveys were undertaken on the 30th May and 14th June 2023. Proposals are to make alterations to the building including a new riverside walkway, to clad the upper brickwork of the building in wooden boarding and to add an extension to the upper floor living accommodation within an existing area of upper floor terrace.

Surveys were led by Richard Roe (BSc, MSc, MIEEM, CEnv). Richard has extensive experience of undertaking bat surveys as a professional ecological consultant with over twenty years' experience. Richard is also a licensed bat worker (Level 4 Class License).

BAT SCOPING SURVEY FINDINGS

The study site comprises of Erbistock Mill which is a converted water mill building. The building is considered of pre-20th century origin. The building is located immediately adjacent to a weir on the River Dee.

Surrounding habitats comprise principally of the river and extensive blocks of riparian woodland. Immediate surrounding habitats are considered to offer 'high' value bat foraging habitat.

Internally, the building living areas are largely considered unsuitable for bats. The building does not have a separate roof void, with the upper floor rooms extending into the roof space. The upper floor rooms are all bright with plastered walls and ceilings and are subjected to frequent human disturbance. The basement area is dark and relatively humid and suffers limited human disturbance. There is a fireplace present in the basement which could offer some potential bat roosting habitat. However, no obvious bat access points to the basement were identified. In any case, the basement area will not be affected by development proposals.

The upper floor, exterior terrace area was observed to be intact and well-sealed with no obvious potential bat roosting features.

Addendum

The external brickwork within the terraced area is well pointed with no obvious potential roosting crevices and the internal face of the roof is well plastered and tightly sealed. No bat droppings or other bat field signs were identified within the building interior or on the external terrace area.

Externally, the roof of the building appears to be intact and in good condition with no missing slates or areas of raised ridge. Verge mortar at each gable end is intact and well pointed. It is likely that the roof has been restored in the relatively recent past, possibly when the dormer windows and skylights were installed.

The building offers some areas of potential bat roosting habitat where there are intermittent deep crevices between the areas of sandstone blockwork located at the building's east and west faces. The crevices are located within the sandstone blockwork between the ground floor and first floor windows of the building. The crevices in the blockwork only offer suitable roosting habitat for individual or low numbers of non-breeding bats.

Taking account of the building's location and features identified, the building was assessed as offering a 'moderate' suitability for roosting bats.

BAT DUSK ACTIVITY SURVEY

Methods

In accordance with the recommendation within the initial scoping survey, additional bat dusk surveys were undertaken on the 30th May and 14th June 2023.

Given the size of the building and the location of potential bat roosting features, it was considered appropriate to use two surveyors, with one surveyor positioned at the building's east face and one at the building's west face. Surveyor locations are shown on Figure 1 in the Appendix.

The surveyors were equipped with heterodyne and time expansion bat detectors (Anabat Walkabout, Anabat Express, Echometer Touch 2 Pro and Elekon Bat Scanner).

The bat surveyors were also equipped with night vision cameras (3 x Canon XA night vision cameras) supported by infrared floodlights (Nightfox XB and Dedolight IRedzilla infrared illuminators).

The dusk surveys commenced 15 minutes before sunset and continued up to 90 minutes after sunset. Infrared camera footage was reviewed following survey. All bat species and bat behaviour was recorded.

Addendum

Results

Survey 1

The first survey was undertaken under suitable conditions on the 30th May 2023 with weather recorded as dry, clear, calm and with a temperature of 13°C. Sunset was recorded at 21:24.

In summary, three individual soprano pipistrelle bats were recorded roosting at the site with bats roosting within crevices between sandstone blocks on the east facing elevation, overlooking the river. Bat Roost locations are shown on Figures 1 and 2 and all Photographs in the Appendix.

The first soprano pipistrelle bat was observed emerging from a crevice at Target Note 1 (see Figures 1 and 2) at 21:29, a second bat was identified emerging from the same crevice three minutes later at 21:32. A third soprano pipistrelle was observed flying into a further wall crevice (Target Note 2) at 21:35 and re-emerged at 21:40. No other roosting bats were identified.

High levels of bat activity were recorded throughout survey, this principally comprised of foraging soprano pipistrelle bats; with bats foraging on the adjacent River Dee and also along adjacent woodland edge habitats.

Other bat activity comprised of occasional common pipistrelle, noctule and myotis species. Daubenton's bat was recorded foraging on areas of pooled water above the adjacent weir. The first bat activity (a soprano pipistrelle) was recorded at 21:22.

Survey 2

The second survey was undertaken under suitable conditions on the 14th June 2023 with weather recorded as dry, clear, calm and with a temperature of 18°C. Sunset was recorded at 21:38.

In summary, two individual soprano pipistrelle bats were recorded roosting within crevices between sandstone blocks on the east facing elevation overlooking the river. The first soprano pipistrelle was observed emerging from a wall crevice at 21:34 (Target Note 3). The second pipistrelle was observed flying into a wall crevice at 22:07 (Target Note 4), the bat was not observed to emerge from the crevice. High levels of soprano pipistrelle bat activity were again recorded throughout survey. This included bats foraging on the adjacent River Dee and also along adjacent woodland edge habitats.

Other bat activity again comprised of occasional common pipistrelle, noctule and myotis species. Daubenton's bat was recorded foraging on areas of pooled water above the adjacent weir. The first bat activity (soprano pipistrelle) was recorded at 21:31.

No other bat species or other significant bat activity was recorded. The results and target notes are shown on Figures 1 and 2 in the Appendix. Photographs of the roosting locations are also provided in the Appendix.



Addendum

Recommendations

Roost Overview

The further bat emergence surveys have confirmed the presence of individual roosting soprano pipistrelle bats (four bat roosting locations in total). The roosts are located within crevices between sandstone blocks at the building's east face only (overlooking the River Dee).

The roosts are considered to represent day roosts used by low numbers of non-breeding bats of a common species. Such roosts are considered to be of 'low' conservation value.

It is considered very unlikely that the site supports a significant roost such as a maternity colony.

Works to fit the new walkway and the external cladding will likely result in obstruction of bat access and flight lines to these features. Therefore, potentially resulting in the loss of these roost sites. Figure 2 in the Appendix shows the locations of identified bats roosts in relation to the proposed works.

Bats and their roosts are protected under UK law and are considered to be a European Protected Species. Therefore, works to redevelop the site would need to be undertaken under a European Protected Species License (EPSL).

Bat License and Mitigation

An outline mitigation strategy has been designed to limit the negative impacts of the development on bats in the locality. The mitigation strategy would provide alternative high-quality bat roosting habitat and would also aim to limit the risk of harm to individual animals during the development process. It is considered that this strategy will ensure that the favourable conservation status of soprano pipistrelle bat is maintained both locally and nationally.

Prior to the start of works, a mitigation area would be prepared which would act as a receptor site for any bats encountered during works. The receptor area would comprise of 3 x bat boxes which would be fitted to retained mature trees located adjacent to the trackway leading down to the Erbistock mill site. Bat boxes would comprise of 3 x Schwegler 2F bat boxes or similar.

In addition to the tree-mounted bat boxes, additional bats roosting features will be incorporated into the refurbished building and existing or potential roosting crevices will be retained wherever possible (see below).



Addendum

The named ecologist on the bat license will attend site to supervise works which might affect any roosting bats. This will include works affecting the stonework of the building's east face. Where areas of stone masonry will be enclosed within new cladding, re-mortared or affected by the proposed walkway, suitable roosting habitat in these areas (i.e. crevices between block work) would be carefully inspected first using a torch and endoscope before works commence. This will need to be carried out from scaffolding or any other suitable elevated platform.

If any bats are observed to be present in areas of affected building, these will be carefully captured by the licensed bat worker where possible and moved to the receptor site. Where bats cannot be safely removed from the stonework, the bat roosting feature would be fitted with a bat valve for at least one week prior to works continuing in the relevant location.

The bat valve will allow animals to escape the feature but will not allow them to re-enter any crevices. The bat valve should remain in place until the licensed bat worker is satisfied that no bats remain within the potential roosting feature. Once they are satisfied the feature can be blocked/re-mortared.

When the licensed ecologist is satisfied that all potential roost features have been removed safely, then work may continue unsupervised. However, in the event that a bat is encountered during this period then all work must stop and the licenced ecologist should be contacted for further advice.

Proposed Bat Roosting Habitat

Development proposals should seek to retain roosting habitat wherever possible and where retention is not practicable, will provide replacement bat roosting habitat.

Where possible, existing bat roosting features in crevices in the external stonework will be retained. However, as some potential features will be re-mortared or obstructed by new cladding/the proposed walkway, it will also be necessary create new roosting features at the site.

New gaps and crevices between the sandstone blocks will be created where any re-mortaring of the mill is to take place. This will be achieved by inserting wooden battens (2cm x 5cm in cross-section) into the wet mortar and removing these before the mortar sets to create suitable roosting crevices and bat access into the existing stone walls.

It is proposed that at least 8 such features should be created within the external sections of wall at the buildings east face and at a variety of heights up to the base of the proposed cladding.



Addendum

Further crevice roosting features can be provided through the careful design of the proposed cladding. The upper half of the building will be clad in overlapping wooden boarding. Wooden cladding can provide high-quality bat roosting habitat, simulating a large wooden bat box. The wooden cladding can provide a natural surface for the bat to roost against and can rapidly warm-up in sunlight.

To provide suitable roosting habitat, it is recommended that the cladding is fitted to 25mm battens to provide a narrow crevice running between the external walls of the building and the new cladding. The cladding should be left open at the base so that bats can crawl behind the wooden cladding. It is also recommended that additional roosting features are created higher up on the face of the cladding by periodically inserting wooden battens between the overlapping boards to create further potential bat access points. Three such features should be created on each face of the building and located at a height of at least 5 m from the ground.

Whether cladding will be treated, this will need to use appropriate 'bat-friendly' wood treatments. A list of appropriate wood treatments can be at the following government website:

<https://www.gov.uk/government/publications/bat-roosts-insecticides-and-timber-treatments/timber-treatment-products-suitable-for-use-in-or-near-bat-roosts>

Addendum

Photograph 1- View of Mill Building



Photograph 1- Bat Roost 1 (circled)



Addendum

Photograph 2- Bat Roost 2 (circled)



Photograph 3- Bat Roost 3 (circled)



Addendum

Photograph 4- Bat Roost 4 (circled)



**FIGURE 1- Bat
Survey Results**



KEY



Study Site



Building



Bat Surveyor



Target Note



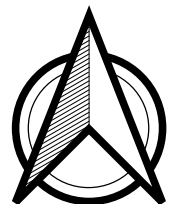
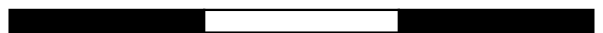
Bat Foraging Activity

0

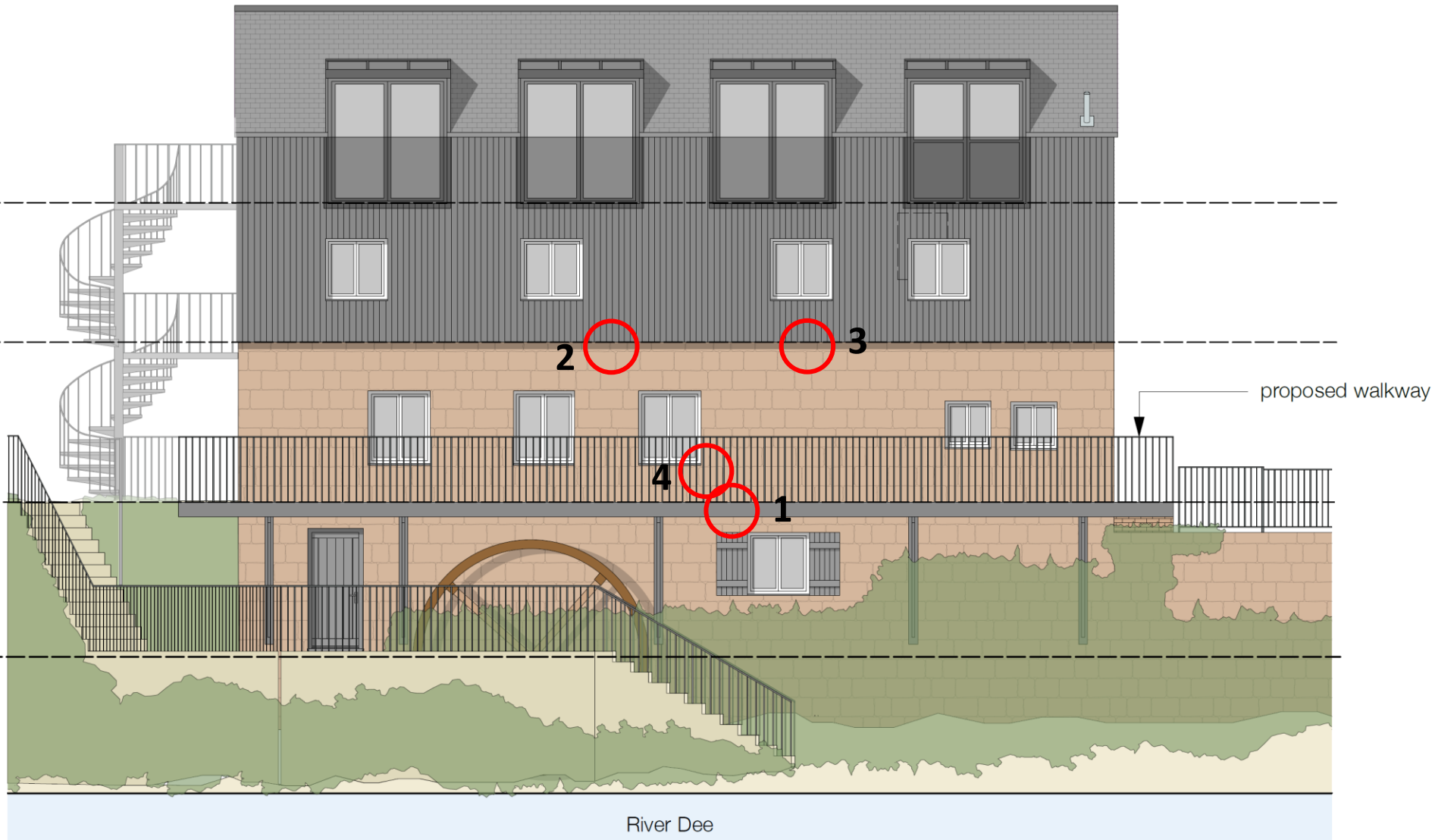
5

10

15 m



**Figure 2- Bat Roost Locations
in Relation to Proposed works**



East Facing Elevation