BAT SURVEY REPORT

AUGUST 2022

Wrexham County Borough Museum and Archives,
Regent Street,
Wrexham,
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URBAN GREEN

QUALITY MANAGEMENT

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NON-TECHNICAL EXECUTIVE SUMMARY

Wrexham Council is proposing to undertake internal renovation works at Wrexham Museum in Wrexham (hereafter referred to as 'the site'). The proposals include the update of the internal layout to allow further exhibits to be added.

Urban Green have been appointed to complete Nocturnal Bat Surveys and a Report of the site, following recommendations made within a Preliminary Roost Assessment conducted at the site in July 2022. One building was identified on site (B1), which was assessed as having **Moderate** bat roost potential and as such two further bat surveys in the form of emergence and re-entry surveys were recommended to determine the presence or likely absence of a bat roost within the Building and inform any further mitigation requirements.

As such, one dusk emergence survey and one dawn re-entry survey were undertaken to assess the building's suitability for roosting bats, following good practice guidance as set out in Collins (2016). Surveys were undertaken on the 4th August (dusk emergence) and 26th August (dawn re-entry) which is within the peak survey period for bats.

No evidence of a bat roost was identified during surveys, with low levels of bat activity recorded at the site, and therefore no further surveys or mitigation considerations with respect to bats are necessary for the development to proceed.

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1 Introduction

1.1 Background to the Scheme

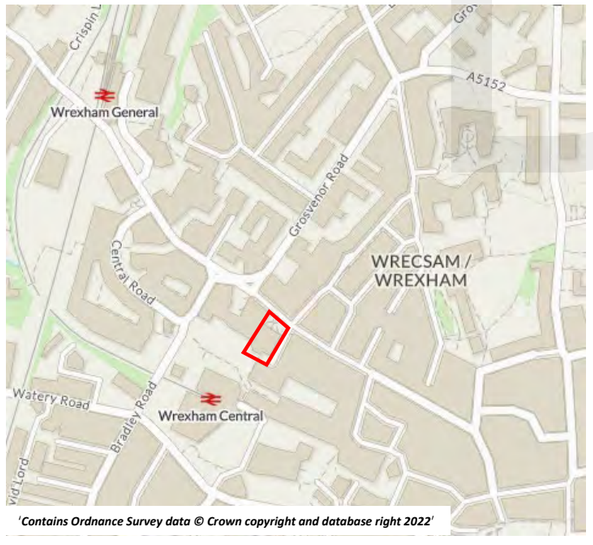
Wrexham Council is proposing to undertake internal renovation works at Wrexham Museum in Wrexham. The proposals include the update of the internal layout to allow further exhibits to be added.

Urban Green have been appointed to undertake further Nocturnal Bat Surveys following recommendations outlined within Preliminary Roost Assessment (PRA), undertaken at the site by Urban Green in July 2022.

The author of the report is Max Grindle BSc, QCIEEM, Assistant Ecologist at Urban Green. Max has experience providing ecological consulting services for a range of development schemes across the UK, including residential and commercial schemes.

1.2 Site Context

The site is located at National Grid Reference SJ 33179 50447 and comprises a total area of approximately 0.2ha (see Figure 1).



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Figure 1 – Site Extent

The site is located within the centre of Wrexham, approximately 50m north of Wrexham Central train station. Commercial, industrial, and residential buildings are present on all aspects of the building, with Bellevue Park present approximately 200m south of the site.

1.3 Purpose of this Report

This report has been produced to demonstrate the results of nocturnal bat surveys which were completed at the site. The surveys were conducted to confirm likely absence or presence of roosting bats. Appropriate mitigation and suitable roost replacement (compensation) are detailed (if required). The report has been produced in support of the proposed planning application.

Relevant UK legislation of the protection of all UK bats are detailed in Appendix 1.

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2 Previous Surveys

A PRA was completed at the site by Urban Green in July 2022 and is detailed within the accompanying report: ref: UG_1678_ECO_PRA_01 (Urban Green, 2022). A single two storey stone building was located within the site boundary, for which both an external and internal assessment was undertaken. Please refer to Table 1, which summarises the site assessment documented within the PRA.

Table 1 - PRA Summary (UG_688_ECO_PEA_01, 2020).

Aspect Reference	Description and evidence
Northern aspect	The northern aspect of the building forms the front entrance to the museum. The stonework is in very good condition throughout, with no gaps in the mortar or gaps present around door or window frames. The edges of the tiles on the roof were also sealed with stone, preventing access to the underside of the tiles. However, there are multiple lifted tiles present within the roof and along the ridge which could offer suitable roosting opportunities for crevice dwelling species such as pipistrelles (*Pipistrellus spp.*). The lead flashing along the base of the chimney stacks appeared to be in very good condition and was tight to the stonework throughout.
Eastern aspect	The eastern aspect of the building comprises gable ends of the multiple pitched roofs and a wall approximately 4m in height. This wall was in very good condition throughout, with no defects in the mortar observed. The gable ends were sealed with stone and were noted to be in good condition throughout, offering no potential roost features. A tree partially obscured some of the view of the building from this aspect, however this is not a significant constraint. As with the northern aspect, there some minor lifted tiles present on the roof visible from this aspect that would provide PRFs for crevice dwelling bat species.
Southern aspect	The southern aspect was the least visible of all aspects as it was mostly formed of the exterior wall of the museum, with an adjacent building in close proximity that allowed for a slightly obstructed view of the roof. The wall was in good condition throughout, with no defects noted. The tiles on the roof had minor defects through lifted tiles that could support a small number of crevice dwelling bat species.
Western aspect	The western aspect of the building forms another gable end, with multiple smaller pitched roofs also present on this aspect. The stonework of the building was on very good condition throughout and was well sealed around the roof tiles and window/door frames. Minor defects were noted in the roof tiles again on this aspect, with some lifted tiles present that could provide roosting habitat for crevice dwelling bat species.
Internal	An internal inspection was undertaken of the roof void where possible within the building. Access to the roof was possible in three separate locations within the buildings and the underside of the roof tiles and loft could be viewed from all three. The underside of the roof tiles was lined with insulation boarding throughout the building. This appeared to be well sealed and in good condition throughout, with no means of internal access to the roof void seen throughout the building.

As the building was assessed as having **moderate** bat roosting potential, a minimum of two nocturnal emergence and re-entry bat surveys were recommended, following guidance set out in Collins (2016).

3 Methods

3.1 Nocturnal Bat Surveys

One emergence and one re-entry survey was undertaken of Building 1 following guidance set out in Collins (2016). All surveys were conducted by eight suitability qualified ecologists, and under the guidance of Mark Blacker, Senior Ecologist at Urban Green who holds a Level 1 Class Licence for bats (2022-10353-CL17-BAT).

The surveys were conducted using handheld BatScanner bat detectors. Surveyors were positioned around the features to observe the Potential Roosting Features (PRF) identified during the PRA. The emergence survey started at least 15 minutes before sunset and continued until approximately 1.5 hours after sunset. The re-entry survey started approximately 1.5 hours before sunrise and continued until 15 minutes after sunrise.

Summary of the survey details are provided in Table 2. Figure 2 provides a plan illustrating surveyor positions.



Figure 2 – Surveyor vantage points

Table 2 - Emergence/Re-entry Survey Details

Date	Survey type	Sunset/ sunrise time	Survey time	Surveyor positions	Weather conditions at sunset
04/08/22	Dusk emergence	21:00	20:45 – 22:30	S1 – Jessica Sibley S2 – Jake Healy S3 – Toby Mills S4 – Max Grindle S5 – Thomas Hardman S6 – Jennifer Furby S7 – Shannon Brady S8 – Sarah Child	Temp: 16°C Cloud cover: 0/8 oktas Wind: 0 Beaufort Precipitation (Ppt): None
26/08/22	Dawn re-entry	06:11	04:41 – 06:26	S1 – Jessica Sibley S2 – Jake Healy S3 – Toby Mills S4 – Mark Blacker S6 – Katy Ellen S7 – Shannon Brady S8 – Max Grindle	Temp: 12°C Cloud cover: 0/8 oktas Wind: 0 Beaufort Precipitation (Ppt): None

Mark Blacker – Senior Ecologist with over four years' bat survey experience and holding a Level 1 Class Licence for bats (2016-27107-CLS-CLS).

Jake Healy – An ecologist with over three years' bat survey experience.

Katy Ellen – A seasonal ecologist with two years' bat survey experience.

Max Grindle – An assistant ecologist with one year's bat survey experience.

Shannon Brady – A Biodiversity Net Gain Consultant with one year's bat survey experience.

Jessica Sibley – A seasonal ecologist with one year's bat survey experience.

Toby Mills – A seasonal ecologist with one year's bat survey experience.

Jennifer Furby – A seasonal ecologist with one year's bat survey experience.

Sarah Child – A seasonal ecologist with one year's bat survey experience.

Thomas Hardman – A seasonal ecologist with one years' bat survey experience

3.2 Constraints to the Survey

No significant constraints were encountered during any of the surveys conducted at this site.

The findings of this report represent the professional opinion of qualified ecologists and do not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited within this document.

3.3 Lifespan of Reports

In accordance with the BCT guidance (Collins, 2016)), the details of this report will remain valid for a period of **24 months** from the date of the first survey (i.e., until 01st May 2022). After this date, given there are no changes to the site or proposed works, this assessment should be reviewed to determine whether any update surveys are required.

4 Results

4.1 Nocturnal Surveys

4.1.1 Dusk Emergence - 04/08/2022

Bat activity was limited throughout the survey, with common pipistrelle observed irregularly, mostly heard not seen but also occasionally commuting and foraging, in proximity of all surveyors excluding S8.

The first observations were recorded at 21:30 (approximately 30 minutes after sunset) by S6 & S7 and concerned a single common pipistrelle commuting westward over the building.

The final observations were recorded at 22:13 (approximately 73 minutes after sunset) by S4, S6, and S7 and concerned common pipistrelle, heard not seen.

No emergence was detected at any surveyor positions during the survey period.

4.1.2 Dawn Re-entry – 26/08/2022

No bat activity was recorded during the survey at all surveyor locations within the site.

4.2 Assessment

No evidence of bats emerging, or re-entering was recorded at the site; therefore, it has been deemed unlikely that the building supports any bat roosts.

Activity onsite was limited to low levels of foraging and commuting common pipistrelle, with no records of other species recorded.

It is anticipated that the site is used solely for commuting and foraging purposes by common and widespread bat species.



Photograph 1 – Northern aspect of building, looking to east.



Photograph 2 – Eastern aspect.



Photograph 4 – Southern aspect



Photograph 4 – western aspect of building showing gable ends

5 Mitigation Recommendations

5.1 Impact Assessment

No evidence of bat emerging, or re-entering was recorded during the nocturnal bat survey for the site, therefore it has been assessed that the building does not support a bat roost. As such, no further surveys or mitigation is required to facilitate the development relating to bats.

However, bats were occasionally recorded using the site for commuting and foraging purposes, and construction activities may impact bats through increased levels of artificial lighting. All bats are sensitive to artificial lighting and may be impacted by the proposed development, should no mitigation for lighting be considered.

5.2 Lighting Mitigation

All bats have some degree of sensitivity to artificial, night-time lighting. Introducing artificial lighting to areas that are not currently illuminated may sever important bat flight lines and discourage bats from using important foraging resources.

Lighting mitigation should follow the guidance outlined in the Institute for Lighting Engineers document "Guidance for the Reduction of Obtrusive Lighting" (2005) and BCT's "Bats and Artificial Lighting in the UK" (2018).

Construction lighting and proposed external lighting should not be directed towards retained and surrounding habitats including the trees present within the adjacent churchyard and the line of trees running adjacent to a trainline located to the east of the site. The lighting may impact bats which are sensitive to light. Directional lighting will be achieved by angle and orientation of beam, use of a cowl, louvre or other light shield, or a combination of these.

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6 Conclusion

Overall, the report objectives have been met through providing information on:

- The methods used to conduct the bat activity surveys are detailed in Section 3.
- Results of the bat activity surveys detailed in Section 4.
- Appropriate mitigation methods for artificial nocturnal lighting are detailed in Section 5.

7 References

Bat Conservation Trust (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (Third Edition). The Bat Conservation Trust, London.

CIEEM (2019). Advice Note on the Lifespan of Ecological Reports and Surveys. CIEEM.

Urban Green (2022). Preliminary Roost Assessment of Wrexham Museum. Ref: UG_1678_ECO_PRA_01.

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Appendix 1 - Relevant Legislation

Legislation relating to European Protected Species (e.g., bats)

European Protected Species and their resting places (e.g., bat roosts) are protected under the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CRoW) Act 2000, and the Conservation of Habitats and Species Regulations 2017.

The Conservation of Habitats and Species Regulations 2017 transpose the European Union's 'Habitats Directive' (Council Directive 92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive) into UK law. The Regulations provide for the designation and protection of 'European Sites', the protection of 'European Protected Species' (EPS), and the adaptation of planning and other controls for the protection of European Sites. EPS are listed on Schedule 2 of the Conservation of Habitats and Species Regulations 2017.

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