People's History Museum, Manchester
Bat Survey

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Dunelm Ecology
consultant ecologists

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1 Introduction

1.1 Background

1.1.1 Dunelm Ecology Ltd was commissioned to undertake a bat survey of the People's History Museum, Manchester. The survey was undertaken in support of a Listed Building Consent (LBC) to re-roof several buildings that form part of the museum.

1.1.2 The main objective of the survey was to identify if bats are using the buildings as roost sites, and if so, to establish the species and numbers of bats present, and type of roost. This report provides a brief overview of the legal protection afforded to bats in the UK. It includes a detailed description of the survey methods used and the results of the study. The implications of the survey findings are discussed; with an assessment of potential impacts provided and recommendations given as to what further measures are considered necessary.

1.2 Bat Ecology

1.2.1 There are 17 species of bat known to be resident (i.e. breed) in the British Isles, around six of which occur in the Manchester area. Habitat requirements vary widely, both on an individual and species level, although certain features, such as woodland, parkland, traditional pasture, marshes and areas of freshwater, are often focal points for foraging as insects are plentiful in these areas (Mitchell-Jones 2004). Bat roosts tend to be more common in areas where such habitats are present. Bats use linear features such as rivers, hedgerows, roads and woodland edges as landmarks in order to commute from one location to another (Schofield and Mitchell-Jones 2003).

1.2.2 Bats utilise different roosts at different times of the year. Between late October and March, bats hibernate; this typically requires an unexposed roost with a stable temperature, such as a cave, cellar or tunnel although cavity walls can be used by some species such as pipistrelle bats. Around March, the bats emerge and gradually move to their summer roosts, typically within man-made structures or suitable crevices in trees. During the spring and summer period, female bats gather at maternity roosts to give birth and rear their young. Most births occur between late-June and mid-July, with the young able to fly within three to five weeks (Altringham 2003). By the end of August, most of the young bats are independent and the colony begins to break up (Schofield and Mitchell-Jones 2003). Non-breeding roosts comprising individual and low numbers of bats can be found between spring and autumn. Mating takes place between August and December, either at the winter hibernation site or at autumn mating sites. The numbers of bats utilising these various roosts can range from single bats to hundreds of bats in a nursery colony (Altringham 2003).

1.3 Legislative and Planning Context

Bats

1.3.1 All British bat species are protected under the Wildlife and Countryside Act (WCA) 1981, which has been amended by later legislation, including the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of

Habitats and Species (Amendment) (EU Exit) Regulations 2019. Taken together, the above legislation makes it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection.
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat.
- deliberately capture, injure or kill a bat,
- deliberately disturb bats, in such a way as –
  - i) to impair their ability to survive, to breed or reproduce, or to rear their young, or
  - ii) to hibernate or migrate, or
  - iii) to affect significantly the local distribution or abundance of bats;
- damage or destroy a breeding site or resting place.

1.3.2 Under the 2019 Regulations it is an offence to damage or destroy a breeding site or resting place whether a bat is in occupation or not.

1.3.3 Seven native British bat species are listed as 'Priority Species' and are referred to as 'species of principal importance' for the conservation of biodiversity in England and Wales within Section 74 of the CRoW Act 2000 and Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

1.3.4 The effects of developments on protected species are considered in the National Planning Policy Framework (NPPF). Section 15 of the NPPF states that Planning policies and decisions should contribute to and enhance the natural and local environment through a range of measures including minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs. Local authorities in England are required to ensure that where significant harm resulting from development cannot be avoided (through locating on alternative sites with less harmful impacts), adequately mitigated, or, as a last resort, compensated for; planning permission is refused.

1.3.5 Finally, Circular 06/2005: *Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System* states that protected species and habitats are a material consideration in the planning process. Paragraph 99 states 'It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted.'

2 Methods and Approach

2.1 Field Survey

Preliminary Roost Assessment (PRA)

2.1.1 A PRA of the affected buildings was carried out during daylight hours on 12 September 2025 following the methodology outlined in the *Bat Surveys Good Practice Guidelines* (Collins 2023). The survey involved searching the interior and exterior of the buildings for bats and their field signs with the aid of close-focusing binoculars (Opticron Countryman BGA 8x42) and a powerful torch (Clulite 1M candle-power). A DJI mini 3 pro drone was also used to aid the PRA. The buildings were assigned to a roost potential category based on the criteria presented in Table 1 (Collins 2023).

Table 1 Roost Assessment Criteria

Roost Potential Category	Description of Roosting Habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible	No obvious habitat features on site likely to be used by roosting bats, however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only such as maternity or hibernation – the categorisation in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation roosts e.g. maternity or classic cool/stable hibernation site.

2.2 Personnel

2.2.1 The survey was carried out by Jon Guarnaccio MCIEEM who has 22 years continuous experience as a professional ecologist and has held a Natural England bat survey licence since 2005 (2015-15066-CLS-CLS).

2.3 Survey Constraints

2.3.1 The PRA was carried out at an appropriate time of year. Given the complex layout and size of the museum buildings, it was not possible to closely inspect all areas meaning some PRF may not have been recorded. Drone footage plus building condition reports were relied upon to partly mitigate for this limitation.

2.3.2 It should be noted that species such as bats are unpredictable and may not conform to standard patterns recorded in scientific literature. Therefore, this report cannot predict with absolute certainty that bats will occur in apparently suitable locations or habitats, or that they will not occur in locations or habitats that appear unsuitable.

3 Results

3.1 PRA

3.1.1 The results of the PRA survey are shown in Table 2 below. In summary no evidence of bats was recorded during the survey although some buildings were assessed as having moderate bat roost potential owing to the presence of PRF and proximity of suitable foraging habitat. Although the site is located within a highly urban area, it lies immediately adjacent the River Irwell which is likely to be a key foraging and commuting resource for the local bat population. Such habitats increase the likelihood of bat roosts being present in the locality although maternity roosts are unlikely to be common based on the absence of other valuable habitats such as woodland.

Table 2 PRA Results

Building	Building Description	Roosting Opportunities & Signs of Bat Use	Roost Potential
The Engine House	Grade II listed structure dating from early 20th century. This part of the building formed part of the original power generating station and comprises solid brick walls set under a glass and steel framed central roof flanked by traditional blue slate mono-pitch roofs. The latter are understood to be lined with a non-breathable membrane with PIR insulation between the rafters. There is no roof void below, exposing timber sarking boards on the undersides of the rafters.	No evidence of bats was recorded during the survey. The slate sections of roof appear to be relatively tight with no obvious access points for bats even where the occasional slate has slipped. Plastic air vents do not appear to support insect mesh or grilles, and as such, provide bats with numerous potential access points. Perished mortar was observed around stone copings/parapets, but these were superficial gaps offering sub-optimal roosting habitat.	Moderate
Accumulator tower	This structure is of similar construction and age to the above and formally housed the power station's pistons. The roof is pitched and clad with blue slates. No roof void is present, with timber sarking boards visible on the undersides of the rafters	No evidence of bats was recorded during the survey. Again, the roof slates appear to be tightly fitted with no obvious gaps. Ridge tile air vents do however provide potential access points for bats.	Moderate
Stores/office	Extends from southeast gable of the accumulator tower and has a hipped blue slate roof. A roof void appears to be present but no access hatch exists.	No evidence of bats was recorded and no crevice roosting opportunities appear to exist, the roof slates and leadwork appearing to be sound.	Negligible
Coal store	Now used as office space, this part of the museum comprises solid brick walls set under a pitched blue slate roof with stone parapets on gable walls. No roof void is present and the roof is lined with timber	No evidence of bats was recorded during the survey. Again the roof slates appear to be tightly fitted although there may be some vary narrow gaps where bats could squeeze between slates. Ridge tile air vents provide potential	Moderate

Building	Building Description	Roosting Opportunities & Signs of Bat Use	Roost Potential
	sarking boards.	access points for bats.	
Workshop	Detached building dating from early 20th century, with flat asphalt roof.	No evidence of bats was recorded during the survey and no discernible access points were recorded.	Negligible
Link block	The link block dates from the late 20th/early 21st century and links the original site buildings to a recent modern extension. The roof is flat and comprises a rubber membrane.	No evidence of bats was recorded during the survey and no discernible access points were recorded.	Negligible

3.2 Other Species

3.2.1 No evidence of birds was recorded during the survey and no obvious potential nesting features were identified, particularly for black redstart.

4 Discussion

4.1 Assessment and Recommendations

4.1.1 There is no evidence to suggest that the site buildings are used by roosting bats although several are assessed as having moderate roost potential due to the presence of potential access points in the form of air vents.

4.1.2 Further survey effort in the form of two dusk emergence surveys is therefore recommended to give confidence in the initial negative survey result and to comply with best practice guidelines (Collins 2023). Such surveys can only be undertaken between May and August during suitable weather conditions i.e. warm (>10ºC), light winds and dry, with at least three weeks between each survey.

4.1.3 Should further survey confirm the presence of bats, then re-roofing works would need to be completed under licence from Natural England. Roost sites for bats should be incorporated into the scheme whether bats are present or not, in accordance with the NPPF which seeks net gains in biodiversity. This could be achieved by incorporating bespoke bat access slates in some roofs although an appropriate bat friendly membrane would need to be used in conjunction with these e.g. TLX bat safe.

4.1.4 Although the risk is low, nesting birds could potentially be disturbed or harmed if works were undertaken during the nesting season, which would constitute and offence under the Wildlife and Countryside Act 1981 (as amended). If works cannot be undertaken outside the nesting season which lasts from March to August inclusive, then a pre-works check should be undertaken no more than 48 hours of work commencing. If breeding was confirmed, then works within 5 m of the nest would need to be postponed until chicks had fledged the nest. This approach is recommended to avoid infringement of the Wildlife and Countryside Act 1981 (as amended) which protects all wild birds and their nests. Artificial nesting features for birds could also be provided in the form of swift units; these being positioned on north or shaded elevations.

5 References

Altringham JD (2003). *British Bats*. Collins, London.

Collins J (ed) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. Fourth Edition. BCT, London.

Schofield HW & Mitchell-Jones AJ (2003). *The Bats of Britain and Ireland*. The Vincent Wildlife Trust, Ledbury.



Plate 1 The engine house in foreground with accumulator tower in background



Plate 2 Roof coverings are generally tight fitting but note air vents



Plate 3 Coal store building



Plate 4 Typical internal view showing timber sarking on underside of roof



Plate 5 Coal store roof: note ventilation ridge tiles which could provide potential access points for bats



Plate 6 The site is located immediately adjacent the River Irwell which increases the likelihood of roost sites being present