

HOME Railway Arches, 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 carry out a bat survey of three railway arches adjacent HOME in Manchester. The survey was undertaken in support of a planning application to renovate the arches and transform them into workshops and office space.
- 1.1.2 The main objective of the survey was to identify if bats are using the arches as a roost site, and if so, the species and numbers of bats present, and type of roost. This report provides a brief overview of the ecology and 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, three of which regularly occur in central Manchester. 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 requires an unexposed roost with a stable temperature, typically a cave, cellar or tunnel. 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 together 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). 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 or hibernation site (Altringham 2003).

1.3 Legislative and Planning Context

- 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:

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- 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 In addition, seven native British bat species, including soprano pipistrelle and brown long-eared bats - which are frequently found in buildings - are listed as a 'Priority Species'. Although the UK Biodiversity Action Plan was succeeded by the 'UK Post-2010 Biodiversity Framework' in 2012, the UK list of priority species remains an important reference source. Priority Species are also 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). Under the NPPF, LPAs in England are required to take measures to protect the habitats of such species from further decline, protect the species from the adverse effect of development and refuse planning permission for development that harms these species unless the need for, or benefit of, the development clearly outweighs that harm.
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2 Methods and Approach

2.1 Field Survey

- 2.1.1 A detailed inspection survey of the building was carried out during daylight hours on 8 October 2021 following the methodology outlined in the *Bat Mitigation Guidelines* (Mitchell-Jones 2004) and *Bat Surveys Good Practice Guidelines* (Collins 2016). The survey involved systematically searching the railway arches for bats and their field signs with the aid of ladders, endoscope (Snakevision), close-focusing binoculars (Opticron Countryman BGA 8x42) and a powerful torch (Clulite 1M candle-power). Such signs may include insect remains, droppings, grease marks, urine stains and smoothing or lack of cobwebs. The arches were assigned to a roost potential category based on the criteria presented in Table 1 below (Collins 2016). Evidence of nesting birds was surveyed for in conjunction with the bat survey.

Table 1 Bat Roost Assessment Criteria

Roost Potential Category	Description of Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure or tree with one or more potential roost sites that could be used by individual bats opportunistically. 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 or hibernation).
Moderate	A structure or tree 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 – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree 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.

2.2 Personnel

- 2.2.1 The survey was carried out by Jon Guarnaccio MCIEEM who has 18 years experience as a professional ecologist and has held a Natural England bat survey licence since 2005.

2.3 Survey Constraints

- 2.3.1 The survey was carried out at an appropriate time of year (Mitchell-Jones 2004) with full access to the site. However, it should be noted that 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 Field Survey

Bats

- 3.1.1 The results of the bat survey are shown in Table 2 below. In summary no signs of bats were recorded and the railway arches are assessed as having negligible roost potential. Notwithstanding this, the Rochdale Canal is located 60 m to the north while the River Medlock is located 100 m to the southeast meaning bat roosts are likely to be present within the locality.

Table 2 Daytime Inspection Results

Description	Roosting Opportunities & Signs of Bat Use	Roost Potential
Victorian era railway arches situated below the west coast mainline. The arches are open on both sides (north and south elevations) and principally comprise brick with stone copings at the base of the arches and cast iron braces on the side elevations. Smaller arches run through brick piers within the centre of the arches, perpendicular to the main arches.	No evidence of bats was recorded and the arches are structurally in good condition. Some spalled bricks are evident but pointing is largely intact. The only potential roosting feature identified was within one of the smaller central arches where five bricks have fallen away revealing the brickwork behind (this is located between the central and eastern main arches). Some mortar is missing in this location resulting in crevices approx. 100 mm deep. These were however very wet making them less suitable as roosting habitat.	Negligible

Breeding birds

- 3.1.2 No signs of previous bird nesting were recorded and there are no suitable ledges or crevices on which birds could nest.

4 Discussion

4.1 Assessment and Recommendations

- 4.1.1 There is no evidence that the arches are used by roosting bats or nesting birds and they are assessed as having negligible bat roost potential due to a paucity of potential roosting features. As such no further survey work is deemed necessary and no adverse impacts on bats or birds are predicted. However, the identified feature within the central walkthrough arch should be checked for bats prior to repair. In the very unlikely event of a bat being recorded, a licensed bat ecologist should be contacted for advice.
- 4.1.2 In accordance with the NPPF, there is an opportunity to enhance the ecological value of the proposals through the incorporation of integral bat roosting and bird nesting features. This can be achieved through installing several integral roosting and nesting units within the side elevation walls of the structures (e.g. one of each on each elevation). These can be faced with any material to ensure they blend in seamlessly with surrounding brickwork. The units should be positioned at least 4 m above ground level and away from artificial lighting. Additionally, any landscape planting (e.g. planters) should incorporate native species/nectar rich flowers to attract insects such as bees and butterflies.

5 References

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

Collins J (2016). *Bat Surveys Good Practice Guidelines*. Third Edition. BCT, London.

Mitchell-Jones AJ (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

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

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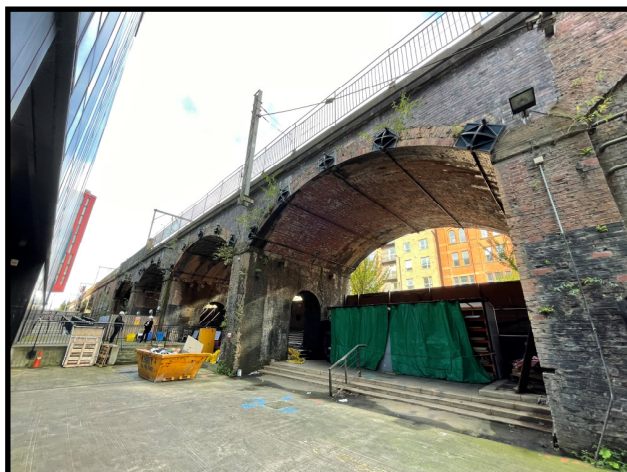


Plate 1 South elevation of arches



**Plate 2 Looking east to west through structure
with smaller central arches visible**



**Plate 3 Potential roosting feature in smaller
central arch**



**Plate 4 The brickwork is generally in good
condition**