

**QUEEN'S PARK CONSERVATION
STUDIOS, HARPURHEY, MANCHESTER**

BAT DAYTIME SURVEY

MARCH 2022

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Author	KM
QA	SW
Revised	-

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EXECUTIVE SUMMARY

- Cheshire Ecological Services (CES), the commercial division of Cheshire Wildlife Trust, was commissioned to conduct a daytime bat survey at the Queen's Park Conservation Studios Building, within Queens Park, Harpurhey, Manchester.
- The daytime bat survey was conducted on 10th February 2022 by Senior Ecologist Suzie Whitnall BSc MSc ACIEEM and Consultant Ecologist Kyle Mellish BSc ACIEEM. Suzie is licensed by Natural England to disturb, take and handle all species of bats in England under licence number 2017-28095-CLS-CLS (level 2) and Kyle is trained and experienced in the assessment of buildings for bats.
- The objective of the survey was to establish the suitability of the building to support roosting bats & nesting birds, and determine whether there is any need for further survey and/or mitigation. The survey was carried out to recognised guidelines, timings and weather conditions, with particular reference to Natural England and Bat Conservation Trust (BCT) publications.
- Proposed plans are to renovate the building, including remedial works to the roof, repointing of external brickwork, replacement of rotten roof battens, refurbishment of the basement and closing up of the decorative external vents.
- The site is located within the centre of an area of suburban parkland, which provides High quality foraging and commuting habitat for bats. Habitats include woodland, rough grassland, scrub and the River Irk to the west.
- The quality of roosting habitat within the building was considered to be Moderate, with a number external features such as gaps under roof and ridge tiles, gaps within stonework and within decorative vents, as well as internal loft voids. Given the excessive height of the lofts and lack of loft hatches, the lofts could not be inspected at the time of the survey.
- No evidence of bats was recorded during the survey. However, given the survey was carried out in the winter months when bats are less active/hibernating and external evidence is less likely to be presence, this does not conclude 'likely' absence.
- Given the suitability for roosting bats within the building, emergence / re-entry bat surveys will be required in the active bat season (mid-May to September, inclusive), comprising at least one dusk emergence and one dawn re-entry survey.
- Historic and possible present use of the building by nesting birds was recorded on the building exterior. To compensate for the loss of nesting habitat, four house sparrow nest boxes should be sited on nearby mature trees.

1.0 INTRODUCTION

- 1.1 Cheshire Ecological Services (CES), the commercial division of Cheshire Wildlife Trust, was commissioned to conduct a daytime bat survey at the Queen's Park Conservation Studios Building, within Queens Park, Harpurhey, Manchester.
- 1.2 The daytime bat survey was conducted on 10th February 2022 by Senior Ecologist Suzie Whitnall BSc MSc ACIEEM and Consultant Ecologist Kyle Mellish BSc ACIEEM. Suzie is licensed by Natural England to disturb, take and handle all species of bats in England under licence number 2017-28095-CLS-CLS (level 2) and Kyle is trained and experienced in the assessment of buildings for bats.
- 1.3 Weather conditions at the time of the survey were cloudy with occasional sunny spells and a temperature of 12°C.

Site Description

- 1.4 The ordnance survey grid reference for the site is SD 85433 00897.
- 1.5 The survey area comprised the Queens Park Conservation Studios building only, the footprint of which totals approximately 200 square meters, and is hereafter referred to as the 'site' (refer to Figure 1). The building was formerly used as an art gallery and museum, but is currently used as a storage repository.
- 1.6 The building is located within the middle of Queen's Park, in Harpurhey, Manchester (refer to Figure 2). The park consists of a variety of associated habitats, including areas of woodland, mature trees, rough grassland, amenity grassland and scrub.
- 1.7 The Park is in turn bounded to the north by a cemetery, to the east by Rochdale road beyond which is Moston Vale Park, to the south by residential housing and areas of woodland, and to the west by the River Irk and its associated riparian corridor, which is predominantly wooded at this point.



Figure 1. Aerial Building Plan



Figure 2. Site Location Plan

Proposed Development

- 1.8 Plans have been proposed to renovate the building, including remedial works to the roof, repointing of external brickwork, replacement of rotten roof battens, refurbishment of the basement and closing up of the decorative external vents, as well as renovation of internal areas.

Aims of the Survey

1.9 The bat and bird daytime survey aimed to:

- Conduct external and internal building inspections to look for bats or field signs of bats within the areas of proposed works
- Assess the suitability of the building for use by roosting bats and determine the actual presence or potential presence of bats
- Assess the suitability of the building to support nesting birds
- Assess whether there is any need for further survey and/or mitigation

Lifespan of Data

1.10 The results and recommendations within this report will remain valid for a period of one year from the date of the survey.

2.0 METHODOLOGY

General

- 2.1 The survey was undertaken to recognised guidelines, timings and weather conditions, with particular reference to Natural England and Bat Conservation Trust (BCT) publications (Refer to 9.0 References).

Building Inspection

- 2.2 The building was searched externally and internally for evidence of bat presence, such as droppings or feeding remains and any potential roosting features (PRFs) including bat access points and roosting places, as detailed in the BCT Good Practice Guidelines (Collins, 2016).
- 2.3 External inspections of the building were carried out from the ground using binoculars, a high-powered hand torch, ladders and a fibre optic endoscope, where necessary.

Areas searched (where present) included:

- | | |
|---------------------|---------------------------------|
| • Windowsills | • Fascias |
| • Window panes | • Lead flashing |
| • Walls | • Gaps in felt |
| • Hanging tiles | • Under tiles |
| • Weather bordering | • Gaps in brickwork / stonework |
| • Eaves | • Boxed soffits |

- 2.4 Internal areas including all accessible rooms and roof voids within the building were searched using a ladder, high-powered hand torch and a fibre optic endoscope (where necessary).

Inspections in the roofs of features (where present) included:

- | | |
|----------------------------|-------------------------------------|
| • Ridge and hip beams | • Behind tiles and roof lining |
| • Mortise and tenon joints | • Top of gable ends or diving walls |
| • Junctions of timbers | • Top of chimney breasts |

Inspections in rooms include:

- | | |
|--------------------------------|---------------------------------|
| • Behind wooden panelling | • Behind items on walls |
| • Behind shutters and curtains | • Inside cupboards and chimneys |

- 2.5 Refer to Appendix A for more information on Bat Ecology and Bats in Buildings.

Assessment Criteria

- 2.6 Based on the number, location and type of any potential roost features, the building was categorised as having **Negligible, Low, Moderate** or **High potential** to support

roosting bats, or confirmed roost, as detailed in Table 4.1 of BCT guidelines (Collin 2016), and summarised in Table 1 below.

- 2.7 The surrounding habitat was assessed for its potential with regards to roosting, foraging and commuting bats. The habitat features were categorised as having **Negligible, Low, Moderate** or **High suitability** for foraging and commuting bats, as detailed in Table 4.1 of BCT guidelines (Collin 2016), and summarised in Table 1 below.

Table 1: Summary of BCT Bat Roost Potential Categories

Suitability	Description – Roosting habitats	Commuting and foraging habitats
Negligible	Buildings with negligible habitat features to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Buildings with one of more potential roost sites that could be used by individual bats opportunistically, although they are unlikely to be suitable for maternity or hibernation roosting. This category also includes buildings of sufficient size and age that elevated inspection may reveal features not previously identified, or features seen that have very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as gappy hedgerows or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Buildings with one or more potential roost sites to support roosting bats but unlikely to support a roost of high conservation status (with respect to roost type only).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Buildings with one of 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.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

- 2.8 During the daytime survey, the building and its associated features were assessed for their suitability for hibernating bats. The following aspects were considered (Middleton 2019):
- The suitability of features to support roosting bats and/or to allow access for roosting bats
 - Suitable conditions including temperature and humidity likely to be present within the building during the winter period for hibernating bats
 - Surrounding habitat for bats to forage and/or commute during the active bat season (i.e. bats are familiar with the area and thus aware of suitable roosting locations within the site)
 - The presence of known roosts within the building, or adjacent buildings, or surrounding area during the active season.

Limitations

- 2.9 This was a daytime survey only. No evening emergence or dawn re-entry surveys were conducted for bats due to the time of year at which the survey was conducted.
- 2.10 During the winter months, bats are less active and/or hibernating, as such the presence of bats within summer roosts is highly unlikely, and external evidence such as droppings are less likely to be present.
- 2.11 Three of the large roof voids within the main galleries (the north, west and south sections) were unable to be entered, due to a lack of loft hatches, delicate artwork nearby and height of the voids (with approximately 30ft ceilings).
- 2.12 The roof was not able to be accessed, as the key to the roof hatch was not available at the time of survey.

3.0 LEGAL PROTECTION FOR BATS

- 3.1 All UK bats and their roosts are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended) and by the Conservation of Habitats and Species Regulations (2017), which gives strong legal protection to all bat species and their roosts. For all countries in the UK the legal protection may be summarised as follows:

You will be committing a criminal offence if you:

1. Deliberately* capture, injure or kill a wild bat
2. Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
3. Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time)
4. Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat
5. Intentionally or recklessly obstruct access to a bat roost even if bats are not present at the time

**In a court, 'deliberately' will probably be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequence his/her action would most likely have).*

Defences include:

1. Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release.
2. Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Penalties on conviction – up to six months' imprisonment and/or unlimited fines. Additionally, any profits made as a consequence of not following lawful process can be confiscated and items used to commit the offences such as vehicles, plant or machinery can be forfeited.

NB. Whilst the protection afforded to bats is virtually the same in all UK countries please refer to the specific legislation for England and Wales, Scotland and Northern Ireland for the precise wording – the above is a brief summary only.

Licensing Procedures

- 3.2 Licences to permit illegal activities relating to bats and their roost sites can be issued for specific purposes by the relevant licensing authorities in each country. These are sometimes called 'derogation licences' or 'European Protected Species' licences, and are issued under the Habitats Regulations. It is an offence not to comply with the

terms and conditions of a derogation licence. If you carry out work affecting bats or roosts without a licence, you will be breaking the law.

3.3 In the case of development works three tests must all be satisfied before the relevant licensing authority can issue a licence:

1. A licence MAY be granted *'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'*.
2. A licence may NOT be granted UNLESS the licensing authority is satisfied *'that there is no satisfactory alternative'*.
3. A licence CANNOT BE ISSUED unless the licensing authority is satisfied that the action proposed *'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'*.

4.0 LEGAL PROTECTION FOR BIRDS

- 4.1 All species of wild bird, their nests and eggs are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended) and, amongst other things, it is an offence to, with certain exceptions, intentionally or recklessly:
1. Kill, injure or take any wild bird
 2. Take, damage or destroy the nest of any wild bird while it is in use or being built
 3. Take or destroy the egg of any wild bird
- 4.2 Additionally, Schedule 1 Part 1 of the WCA lists a number of bird species that receive special attention (e.g. barn owl). These birds are protected by special penalties AT ALL TIMES and it is an offence to disturb any wild bird listed on Schedule 1 whilst it is nest building, or at a nest containing eggs or young, or disturb the dependant young of such a bird wherever they are.

5.0 RESULTS

Surrounding Habitat Assessment (refer to Appendix B – Photographic Plates)

- 5.1 The site is located in within Queen's Park, an area of suburban parkland in the north of Manchester. The site itself comprises the Queen's Park Conservation Studios building only, which stands alone in the centre of the parkland.
- 5.2 The immediate surrounding area comprised Queen's Park, with a variety of associated parkland habitats including areas of woodland, mature trees, rough grassland, amenity grassland and scrub (Refer to Plates 1 and 2).
- 5.3 The wider area comprised of the suburban areas of Harpurhey, Smedley and Monsall, though significant areas of greenspace were present in the area, particularly to the east. The Park is in turn bounded to the north by a cemetery, to the east by Rochdale road beyond which is Moston Vale Park, to the south by residential housing and areas of woodland, and to the west by the River Irk and its associated riparian corridor, which is predominantly wooded at this point.
- 5.4 Given suitable immediate surrounding habitats and connectivity to surrounding habitats in the local area, the site is considered to offer **High** quality habitat for foraging bats.

Building Assessment (Refer to Appendix B – Photographic Plates)

- 5.5 The single building on site comprised a large three-storey brick structure (including a basement), built in 1884 as a museum and art gallery (Plates 3-6). The walls were considered likely to be solid brick given the period of construction, with decorative arches and decorative rectangular brick framing throughout all building façades. The brickwork was in good condition throughout the building.
- 5.6 Stonework lintels were present above the timber-framed windows, decorative stonework corning was present in a line below the roofline and stonework corning was present on the top of the roof parapet. Small gaps were observed between the stonework below the parapet on several areas of the building (Plate 7). Coping stones were also present on the corners of the parapet and further decorative stonework was present atop buttressing at ground floor level.
- 5.7 Decorative terracotta vent covers were present throughout the building exterior on all levels, though the majority were present on the basement and ground floor exteriors (Plate 8). Gaps in the vent covers were reasonably large as to allow bats access to the cavity behind the vent cover. A broken vent cover on the western façade was noted to contain an old bird nest (Plate 9), and the absence of the cover revealed a large cavity, which is assumed to be present behind all vent covers.
- 5.8 Iron pipework was present on the exterior of the building, draining away from the roof via holes in the base of the roof parapet. A blue tit (*Cyanistes caeruleus*) was

observed making frequent visits to the top of one of the drainpipes on the south-east corner of the building (Plate 10), suggesting that it was either in use as a nest or was being scouted as a possible nest site.

- 5.9 A porch was present on the eastern building façade which was double height, with assumed solid brickwork walls as per the rest of the building. The porch had decorative stone cornicing around its frontage and a ridged slate tile roof and lead flashing where it adjoined the building. The lead flashing was well-sealed, but gaps were present beneath the roof tiles and between the stone blocks of the cornicing on the frontage (Plate 11).
- 5.10 A clock tower was also present on the western façade above the level of the parapet, which was also brick-built, with a decorative stonework arch and stonework pediment, with decorative stonework scrolls to the base. Small gaps were observed between the stonework blocks of the pediment during the inspection (Plate 12). The clock face remained present, but the mechanism was not in current operation.
- 5.11 The roof structure of the building was multifaceted and divided into four main sections and an additional smaller section above the clock tower. The section above the main hallway (the central section) comprised of a 'floating' ridge and hipped tiled section, with sloping glass skylights to the base, supported by metal beams. Though the majority of this roof section did not possess a roof cavity, a small internal loft void was present above eastern side of the hallway, adjacent to the clock tower.
- 5.12 A similar roof structure was present in the north, west and south wings – with a 'floating' ridged and hipped tiled roof and glass skylights around the base. The roof also possessed decorative brickwork ridge and end tiles (which may have also been present on the central section, but could not be observed due to the limited viewpoints available). Though generally in a good state of repair, small gaps were occasionally visible underneath shifted roof tiles, under ridge tiles and beneath hip tiles on several roof sections (Plate 13). While these gaps form small features by themselves, there is a possibility that they may also allow access to internal roof voids. Unlike the central section, the skylights in the north, west and south sections were covered with what appeared to be plastic and metal sheeting on the roof exterior, so natural light was not available to these areas. These sections also possessed a loft void below the 'floating' tilework section, but the voids could not be accessed due to a lack of access hatches, their height and presence of shelves of densely stored valuable artwork within the rooms below (Plates 14 and 15).
- 5.13 The clock tower possessed a different roof structure to the rest of the building, comprising of a ridged structure that connected to the central section, with slate roof tiles and decorative brickwork ridge tiles. The roof was lined with bitumen felt, and supported by timber beams (Plates 16 and 17). The bitumen felt was in good condition and well-sealed against the roof tiles. Two skylights in the north and south rooflines and the semi-translucent clock face meant that the space was well-lit. The southern skylight also allowed access to the roof (Plate 18), but this could not be accessed during the survey as the key was unavailable. The clock tower also allowed access to the roof void above part of the central section via a ladder. This section

was well sealed, with a bitumen felt roof lining and a timber internal structure that had been coated with what appeared to be pitch or other wood preserver (Plate 19). A single chimney was present on the western edge of the building adjacent to the clock tower, which was of brickwork construction with a stonework crown, and was in good condition.

- 5.14 The roof possessed a brickwork parapet which encircled the building, with stonework corning atop the parapet. Security floodlights were present on all building façades, which were fixed to the parapet (Plate 20). The client informed us that the lights were not in use at present, as they promoted antisocial behaviour by drawing attention to the building, and therefore the building remains dark at night, which is conducive to occupation by roosting bats.
- 5.15 The interior of the building was set over three floors, with double-height ceilings on the ground and first floor and a normal-height ceiling within the basement level. The central section of the building comprised the porch and entrance hall on the ground floor, with stone staircases providing access to the second floor, which was predominantly open with walkways around the edges to maximise the feeling of space and grandeur within the hallway (Plates 21-23). The ground floor of the hallway was in use as a storage repository. The north and south first floor sections were accessed from the walkways in the central section, and the western section through these sections. All were in fairly frequent use as storage repositories.
- 5.16 The basement of the building was only partially underground; the building sloping down to the west where the full three storeys were visible (Plates 24 to 28). It possessed a maze of rooms, most of which were in use for storage, with the exception of a plant room in the north-east corner of the building. All rooms were in frequent use, with fluorescent strip lights in all rooms and windows in external facing rooms. Three external doors were present on the north, west and south façades, all of which were well-sealed and close-fitting to the frame. The walls of the rooms were well sealed, with close fitting windows where applicable and no gaps in the internal structure that would allow bats entry. The windows of the plant room were covered with fine grade mesh and metal plates (Plate 25), and were well-sealed around their edges, with no other visible means on entry into the plant room.
- 5.17 The building offers suitable Potential Roost Features (PRF's) for bats within external decorative vents on all façades, beneath roof and ridge tiles and in gaps between stonework coping, corning and decorations. Additionally, gaps under roof and ridge tiles may provide access to internal roof voids, several of which could not be inspected due to lack of access during the survey.
- 5.18 **No evidence of bats was recorded within or on the building during the survey. The building is considered to be of Moderate suitability for roosting bats.**

6.0 DISCUSSION

- 6.1 The building is situated within the centre of an area of parkland, which presents **High** quality foraging habitat for bats. Additionally, the park is situated within a sub-urban area, with further parkland areas to the east and good quality habitat connections to further suitable habitats, including the River Irk riparian corridor to the west.
- 6.2 The building was found to contain multiple suitable features for roosting bats within the exterior of the building including within external decorative vents on all façades, beneath roof and ridge tiles and in gaps between stonework coping, cornicing and decorations. Additionally, gaps under roof and ridge tiles may provide access to internal roof voids, several of which could not be inspected due to lack of access during the survey.
- 6.3 The building was therefore considered to be of **Moderate** suitability for roosting bats in the summer months.
- 6.4 The building is not considered to be a 'typical' bat hibernation site, as the basement/cellars are heated, regularly used as storage and well-sealed, and the roosting features identified (i.e. lofts, vent cavities) are unlikely to provide sufficiently stable microclimates during the winter months for hibernating bats. However, it is not uncommon to find low numbers of common species (such as *Pipistrelle sp*) hibernating in these features, and as such the building is considered to be of **Low** suitability for hibernating bats.
- 6.5 Evidence of historical bird nesting was found with a broken decorative vent cover on the western building façade, and another broken vent on the same façade may present a suitable nesting location for birds. Additionally, a blue tit was observed to be frequenting an area at the top of a drainpipe on the south-east corner of the building, indicating possible scouting of a suitable nesting location. The broken vent cover and drainpipe tops are therefore likely to present suitable opportunities for nesting birds, along with the roof which may present nesting opportunities for bird species such as feral pigeon.

7.0 IMPLICATIONS AND RECOMMENDATIONS

- 7.1 The building was found to have **Moderate** suitability for roosting bats during the summer months, and the majority of features identified are to either be disturbed, blocked or destroyed during the proposed renovation works, which would have the potential to impact on bats, if present.
- 7.2 Therefore, in accordance with The Bat Conservation Trust Good Practice Guidelines (2016) for buildings with Moderate bat roost potential; at least one dusk emergence and one dawn re-entry survey are recommended, in order to confirm presence or likely absence of roosting bats.
- 7.3 Emergence and re-entry surveys must be conducted during the 'active' bat season, which encompasses May to September, and at least one survey must been conducted between Mid-May and August (peak season).
- 7.4 Should bats be observed to be roosting within the building during the surveys, further surveys are likely to be required to further categorise the roost. A mitigation strategy must then be produced to avoid harm to bats during the works, and a license sought from Natural England to allow the works to proceed.
- 7.5 Given the building is considered to have Low suitability for hibernating bats, no further surveys are required.
- 7.6 No works should proceed to the building until the results of the bat surveys are known, as an offence could be committed.
- 7.7 The building also has the potential to be used by nesting birds, particularly within broken decorative vents, at the top of drainpipes and on the roof.
- 7.8 It is therefore recommended that the renovation works to the roof and exterior of the building be conducted between September and February (i.e. outside of the 'core' nesting bird season, which generally encompasses March to August inclusive). If this is not possible and works are required to be conducted during the 'core' bird nesting season, CES should be contacted and a nesting bird survey be conducted prior to any potentially disturbing works taking place. In the event that nesting birds are found to be present, an appropriate mitigation strategy should be formulated and implemented.
- 7.9 It is also acknowledged that birds may nest outside the 'core' nesting bird season, and as such, due diligence must be shown by contractors when undertaking works to buildings outside this time. Should a nest be suspected, works should cease and CES contacted for advice.
- 7.10 In order to compensate for the loss of nesting features within the building, it is recommended that four house sparrow nest boxes be incorporated into the scheme; house sparrow being a Red list species of Conservation Concern (Stanbury et al, 2021), that tolerate nesting within close proximity to humans. Given that the building

is listed on the National Heritage List (under the Queen's Park listing), it is likely that nest boxes would not be allowed on the building itself. Nest boxes should therefore be situated on nearby mature trees within the park. Siting nest boxes on the south side of trees should be avoided, which are generally warmer than others aspects, which can cause heat stress in nesting birds.

- 7.11 Boxes should be sited at least 2.5m off the ground and have a 32mm entrance hole. The boxes should be made of a durable and thermally material such as woodstone or woodcrete.

8.0 CONCLUSIONS

- 8.1 Proposed plans are to renovate the building, including remedial works to the roof and closing up of external decorative external vents. Bat roosts, if present, are therefore likely to be disturbed, damaged, blocked or destroyed within the building.
- 8.2 No evidence of bats was recorded during the daytime survey. However, given the time of the survey this does not confirm likely absence.
- 8.3 The building was considered to be of **Moderate** suitability for roosting bats. As such, two further survey visits are required, which must be undertaken within the active bat season (May – September).
- 8.4 If bats are recorded to be roosting in these buildings, then a Bat Mitigation Licence will be required prior to any potentially disturbing work taking place.
- 8.5 The building also has the potential to be used by nesting birds. Works to the roof and building exterior should therefore be conducted between September and February (i.e. outside of the 'core' nesting bird season, which generally encompasses March to August inclusive). If this is not possible, nesting bird surveys will be required.
- 8.6 Compensation for the loss of nest sites is recommended in the form of house sparrow nest boxes on nearby mature trees.

9.0 REFERENCES

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Appendices

Appendix A: Bat Ecology

Bat Ecology

General

- 1.1 There are 18 species of bats in the UK, 17 of which are known to be breeding in the UK. Bat populations have declined considerably over the last century.
- 1.2 Bats are under threat from development and building work that affects roosts, loss of habitat, the severing of commuting routes by roads and threats in the home including cat attacks, flypaper and some chemical treatments of building material. Other potential treats can include lighting sited on key bat habitat on near roosts.

Bats in Buildings

- 1.3 Buildings provide a choice of safe, dry places made from materials like timbers, bricks, stone, tiles and slates.
- 1.4 Buildings present a whole range of potential roost sites for bats e.g.: -
In walls:
 - Behind external hanging tiles or weatherboarding
 - In cavity spaces
 - At top of solid wallsIn eaves:
 - Above soffit, or behind fascia and barge boardingIn roofs:
 - In tunnel under ridge tiles
 - Between underfelt and tiles or slates
 - In roof space along ridge beam and at timber joints, at gable end or around chimneybreast.
- 1.5 The most obvious use of buildings by bats is between May and August, when the pregnant females gather in maternity roosts to give birth and raise their young.
- 1.6 Females and young often remain in one site all summer or move about using several roosts.
- 1.7 Most summer colonies will have dispersed by the autumn, though brown long-eared *Plecotus auritus* bats often appear early in the year (early April) and leave later (October or later). These bats occasionally use the roost throughout the entire year.
- 1.8 Buildings may also be used as temporary or “transitional roosts” by small numbers of adult and immature bats of both sexes, particularly in spring and autumn.
- 1.9 Many outbuildings are attractive to bats for temporary night-time roosts or as sheltered feeding perches. The latter are indicated by the presence of a lot of insect remains, particularly of moths or large beetles and some droppings.
- 1.10 Cool, undisturbed, humid places are important as hibernation sites. Most species will tuck themselves into small crevices e.g. between bricks/stonework, and can easily pass the winter there unnoticed.

- 1.11 Bats are usually concealed in crevices, behind roofing felt, in cavity walls, behind soffits and barge boards, in old timber joints or under ridge tiles and are only occasionally seen out in the open in lofts. Consequently, the key identification feature is the presence of droppings. Sometimes droppings may be found on the outside of buildings e.g. on windows, walls or windowsills. On other occasions droppings found in loft spaces beneath ridge-boards and around chimneys or gable ends is also typical of bats. Hibernating bats leave little or no field signs.
- 1.12 Other evidence to the presence of bats is a characteristic odour. A polished or clean surface near a place where light enters may also indicate habitual usage by bats. Sometimes bats can be heard “chittering” but this is usually in warm summer weather or when they are about to leave the roost to forage at dusk.
- 1.13 The species most commonly occurring in buildings (usually modern houses in summer) are two of the pipistrelle species, (*Pipistrellus pipistrellus*, *Pipistrellus pygmaeus*). These highly gregarious small bats use buildings for breeding during the summer and, in general, the bats disperse during the autumn. They often roost behind soffits, in cavity walls or behind external cladding. In such cases droppings are often found on external surfaces below the roost entrance/exit. The most likely place to find droppings in the roof void are at the gable end wall and along the eaves. In some cases, the bats may roost beneath ridge tiles, on top of the ridge beam or under insulation close to the eaves. Pipistrelles are frequently found overwintering deep in the cracks, crevices and cavities of usually uninhabited buildings (e.g. barns) and in such cases they leave little or no field signs.
- 1.14 The brown long-eared bat is one of the most common species in Britain and is the one most likely to be encountered in roof voids and may occasionally be seen clinging on to timbers near the apex of the roof. Like the pipistrelle, highest numbers may be seen on hot days between June and September when breeding colonies may be present. During the autumn and in cool weather, bats remain concealed in crevices or hollow walls but may appear on mild days or if disturbed. Brown long-eared bats tend to fly around in the open roof void and cling from the ridge during the night, so droppings are usually found scattered over the floor or concentrated in piles beneath favoured roosting areas, typically beneath the ridge beam. In hipped roofs, piles of droppings may also be found in the junction between two hips.
- 1.15 A number of other species - serotine *Eptesicus serotinus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe *Rhinolophus hipposideros* are dependent on roofs but are not found locally in the area, though there has been the occasional record of serotine in the North West.
- 1.16 Whiskered *Myotis mystacinus*, Brandt’s *Myotis brandtii*, Natterer’s *Myotis nattereri* and Daubenton’s *Myotis daubentonii* bats may be present in the area and may be found in roofs but they are not particularly common in such sites. Roosting position is variable but they will be found in the same sorts of places as other species.
- 1.17 There are nine different types of bat roost (Table 3.1 BCT Bat Survey Guideline 2016)
- I. Day roost
 - II. Night roost
 - III. Feeding roost
 - IV. Transitional / occasional roost
 - V. Swarming roost
 - VI. Mating roost
 - VII. Maternity roost
 - VIII. Hibernation roost

IX. Satellite roost

Bats regularly move from site to site even within the above categories.

Appendix B: Photographic Plates



Plate 1: Panoramic view to the north of the building, showing parkland setting with woodland and areas of rough grassland.



Plate 2: Panoramic view to the south of the building, with areas of woodland and scrub visible.



Plate 3: East façade of building.



Plate 4: South façade of building.



Plate 5: West façade of building, showing loading entrance into the cellar.



Plate 6: Northern façade of building, showing semi-sunken basement level and sloping footprint.



Plate 7: Example of gap in stonework above drainpipe, located on the southern façade.



Plate 8: Example of decorative air vent, which were located throughout the building on multiple levels. Gaps in the vent cover were large enough for entry by bats, and a sizeable cavity was present behind each vent.



Plate 9: Decorative air vent with broken spokes. An old birds nest is observable within the hole.



Plate 10: Location of possible bird nest in a gap by the top of a drainpipe, on the south-east elevation.



Plate 11: Gaps beneath slate tiles, present on the eastern porch of the building.



Plate 12: Lifted slate tiles on a hip, forming the section of roof above the clock tower. Small gaps in the lower stonework layer are also visible.



Plate 13: Zoomed view of slate roof showing small gaps beneath slate tiles and beneath ridge tiles.



Plate 14: Example of Internal roof structure, showing the south wing, with an inaccessible internal roof void, with metal shuttered skylights around the edges.



Plate 15: Example of internal roof structure, with inaccessible roof void and metal shuttered skylights, within the west wing.



Plate 16: Interior of the clock tower, showing intact bitumen roofing felt beneath tiles, and multiple windows and the clock face creating a well-lit space.



Plate 17: Alternative view of interior of the clock tower, showing wooden access stairs to the roof void above the main hall to the right, and metal stairs to the roof access straight ahead.



Plate 18: View through the roof access hatch, showing metal covered skylights with lead flashing on the interior of the southern ridge line. The roof could not be accessed during the survey.



Plate 19: Interior of the central internal loft void, above the main hall, which was lined with plywood and well-sealed.



Plate 20: Example of security floodlight, located on the roof parapet.

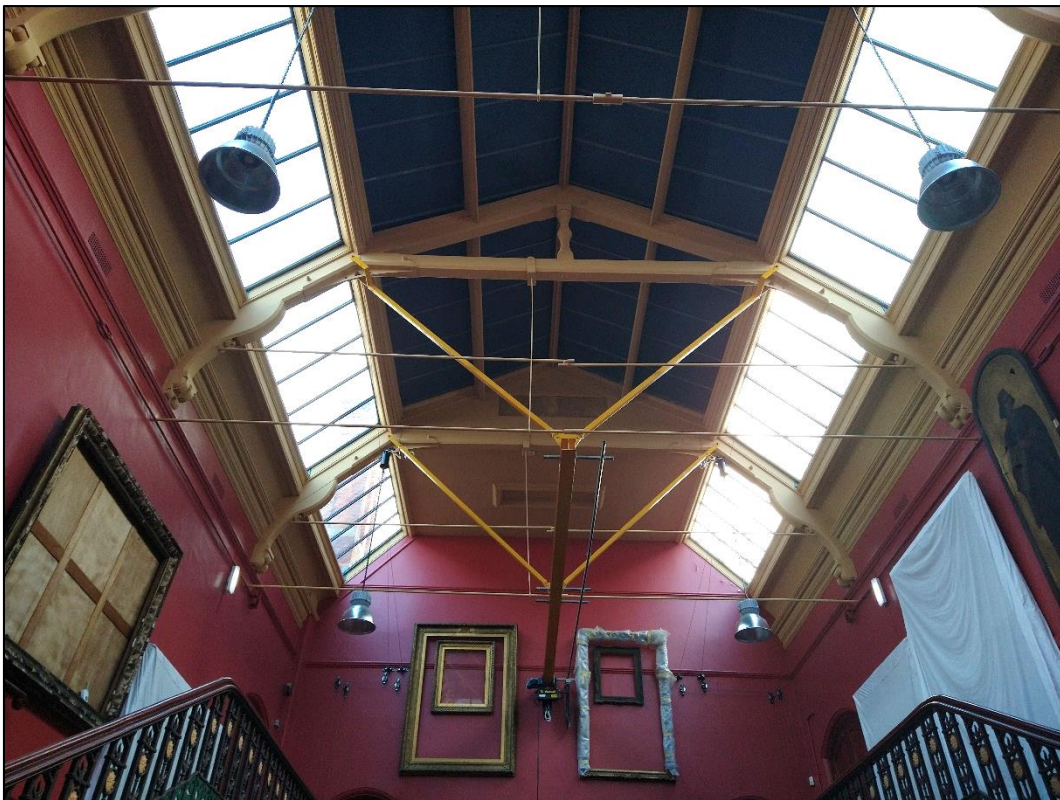


Plate 21: Main hallway within the building, showing glass and metal roof structure above which were slate tiles, with internal roof cavity observable at the furthest point of the roof away from the photo point.



Plate 22: Main hallway within the building, with internal roof ridges visible through the glass roof.



Plate 23: View through internal glass roof structure, toward internal ridgeline, with tiles well-fitting and in generally good condition.



Plate 24: Example of internal basement space, below the main hall of the building, which was well-lit, well-sealed and in frequent use.



Plate 25: View of shutters present within the plant roof, which were well sealed and in good condition, with no gaps large enough for bats to gain entry.



Plate 26: Example of internal basement space, showing the large loading bay doors on the western side of the building, which were well sealed around the frame.



Plate 27: Example of internal basement space, which was well-lit by windows, well-sealed, and appeared to be in frequent use.

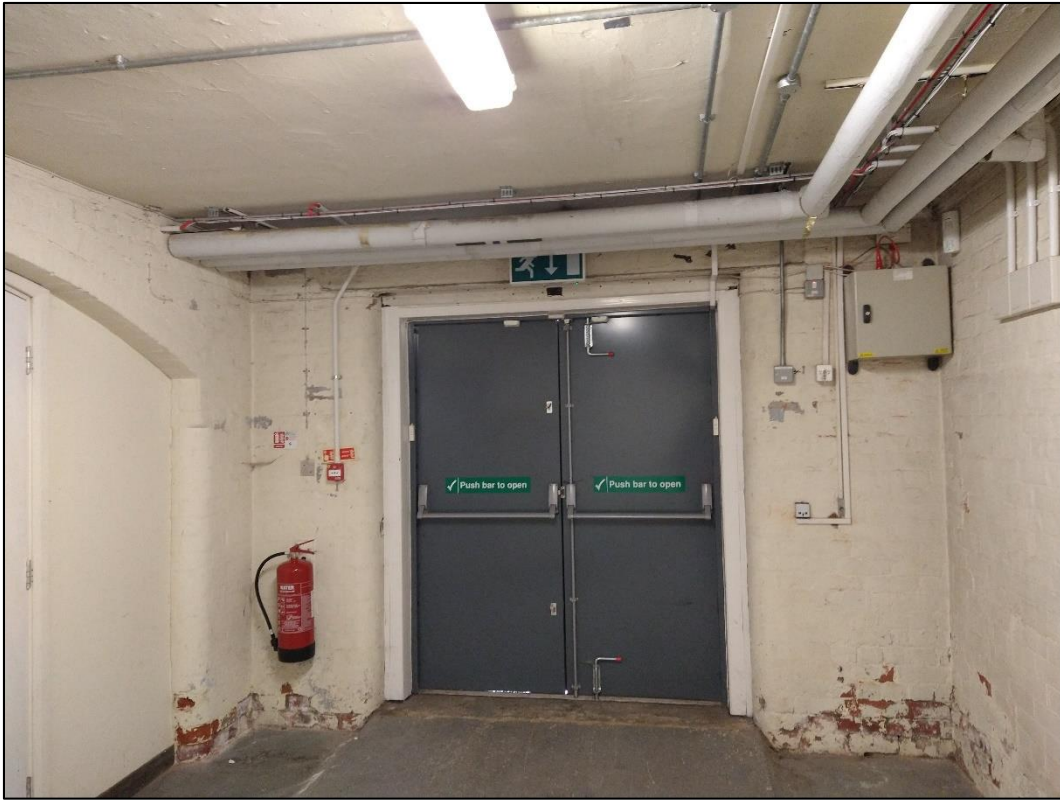


Plate 28: Emergency doors present within the basement, located on the northern side of the building, which were well-sealed.

Appendix C: Legislation

Species/Habitat	Protected by:	UK BAP	Local BAP
Bats	Regulation 41 of <i>The Conservation of Habitats and Species Regulations</i> , 2017 Section 9 of the <i>Wildlife and Countryside Act</i> , 1981 (as amended) Section 40 of the <i>Natural Environment and Rural Communities (NERC) Act</i> , 2006	Dependent on species	Dependent on species
Nesting birds	Section 1 of the <i>Wildlife and Countryside Act</i> , 1981	Dependent on species	Dependent on species

The Conservation of Habitats and Species Regulations, 2017 (as amended)

European protected species are listed on Schedule 2 of the *Conservation of Habitats and Species Regulations* 2017. Those species listed on Schedule 2 are protected under Regulation 41, which refers to the protection of wild animals of a European Protected Species. The following is a summary of the offences listed under Regulation 41, however, the *Conservation Regulations* should always be referred to for the exact and current wording:

Under Regulation 41 of the *Conservation of Habitats and Species Regulations*, 2017 it is an offence to –

- deliberately capture or kill a wild animal of a European protected species;
- deliberately disturb wild animals, in particular any disturbance which is likely:
 - to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or
 - to impair their ability, in the case of animals of a hibernating or migratory species, to hibernate or migrate;
 - to affect significantly the local distribution or abundance of the species to which they belong
- deliberately take or destroy the eggs of such an animal; or
- damage or destroy a breeding site or resting place of such an animal.
- keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European protected species, or any part of, or anything derived from, such an animal.

Wildlife and Countryside Act, 1981 (as amended)

British protected species of animal are listed on Schedule 5 of the *Wildlife and Countryside Act*, 1981 (as amended). Those species listed on Schedule 5 are protected under Part 1, Section 9, which refers to the protection of certain wild animals. The following is a summary of the offences listed under Section 9; however, the Act should always be referred to for the exact and current wording:

Under Section 9 of the *Wildlife and Countryside Act*, 1981 (as amended) a person will be guilty of an offence if they:

- intentionally kill, injure or take any wild animal included in Schedule 5;
- has in his possession or control any live or dead wild animal included in Schedule 5 or any part of, or anything derived from such an animal;

- intentionally or recklessly damage or destroy, or obstruct access to, any structure or place which any wild animal included in Schedule 5 uses for shelter or protection;
- disturb any such animal included in Schedule 5 while it is occupying a structure or place which it uses for that purpose;
- sell, offer or expose for sale, or has in his possession or transports for the purpose of sale, any live or dead wild animal included in Schedule 5, or any part of, or anything derived from, such an animal; or,
- publishes or causes to be published any advertisement likely to be understood as conveying that he buy or sell, or intend to buy or sell, any of those things.

Wildlife and Countryside Act, 1981 (as amended) - Birds

All species of wild bird, their nests and eggs are protected under Section 1 of the *Wildlife and Countryside Act, 1981 (as amended)*; therefore, surveys are required to check for their presence where they are likely to be disturbed for any reason.

The following is a summary of the offences listed under Section 1; however, the Act should always be referred to for the exact and current wording:

Under Section 1 of the *Wildlife and Countryside Act, 1981 (as amended)*, a person will be guilty of an offence if they:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built;
- intentionally take or destroy an egg or any wild bird, he shall be guilty of an offence;
- have in his possession or control any live or dead wild bird or any part of, or anything derived from, such a bird; or
- has in his possession or control an egg of any wild bird or any part of such an egg.

Schedule 1 (Part 1 and Part 2) of the *Wildlife and Countryside Act, 1981 (as amended)* lists bird species that receive special attention under Section 1. Any person convicted of an offence listed above, in respect of a bird included in Schedule 1 or any part of, or anything derived from, such a bird; the nest of such a bird; or an egg of such a bird or any part of such an egg, shall be liable to a special penalty.

Also, if any person intentionally or recklessly disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or disturbs dependent young of such a bird, he shall be guilty of an offence and liable to a special penalty.

Schedules 1, 2, 3 and 4 of the *Wildlife and Countryside Act, 1981 (as amended)* list different species of bird and different Parts of Section 1 of the Act refer to different offences which may be committed in relation to the varying Schedules. The following is a summary of the type of protection offered to species of wild bird listed on each of the Schedules, however the Act itself should always be referred to for the exact and current wording and full species lists:

Schedule 1: Birds which are protected by special penalties:

Part 1: At all times.

Part 2: During the close season.

Schedule 2: Birds which may be killed or taken:

Part 1: Outside the close season.

Part 2: By authorised persons at all times.

Schedule 3: Birds which may be sold:

Part 1: Alive at all times if ringed and bred in captivity.

Part 2: Dead at all times.

Part 3: Dead from 1st September to 28th February.

Schedule 4: Birds which must be registered and ringed if kept in captivity.

The Natural Environment and Rural Communities (NERC) Act, 2006 (as amended)

The following is a summary of the *Natural Environment and Rural Communities (NERC)*, Act, 2006 (as amended), the *NERC Act* itself should be referred to for the exact and current wording:

- Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity;
- In complying with the above, a Minister of the Crown, government department or the National Assembly for Wales must in particular have regard to the United Nations Environmental Programme Convention on Biological Diversity of 1992;
- Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.



Bickley Hall Farm
Bickley
Malpas
Cheshire
SY14 8EF

Tel: 01948 820728