Preliminary Roost Assessment for Bats & Birds

Location: Isaac Walton Farm, Cresswell Lane, Cresswell, ST11 9RE

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Date: August 2019

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The flora and fauna detailed within this report are those noted during the field survey and from anecdotal evidence. It should not be viewed as a complete list of flora and fauna species that may frequent or exist on site at other times of the year.

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Executive Summary

Absolute Ecology LLP was commissioned to undertake a Preliminary Roost Assessment for the bat roost potential at a site known as Isaac Walton Farm, Cresswell Lane, Staffordshire, ST11 9RE. Ordnance Survey grid reference: SJ97637 39418.

Proposals will see the out-building barn being converted for residential use.

The preliminary bat roost assessment was carried out on 30th July 2019 by Helen Staton Bsc (Hons), ACIEEM, Natural England bat survey licence registration: 2015-14490-CLS-CLS and Sarah Higginson QCIEEM.

Isaac Walton Farm is located in the hamlet of Cresswell, which is approximately 1 mile south east of Blythe Bridge. The site is immediately bounded by a main road to the west, residential property to the north and south, and agricultural land to the east. A desk study was carried out by Staffordshire Ecological Records (SER) which returned three records of bat roosts within 2km of the site and a number of field observations.

Isaac Walton Farm is no longer an active farm, and consists of a residential dwelling, and an out-building barn. The surveyed barn is solid brick in construction with a pitched tiled roof and is located on the north western side of the main residential dwelling. The barn is two storey and has ventilation slits on the west elevation with single pane windows on the lower floor. A number of tiles were lifted/slipped/damaged creating potential roosting features for bats and access points into the building.

Internally the building was surveyed for evidence of roosting bats (i.e. bats, droppings, feeding remnants, staining) and approx. 40 bat droppings were found. Scattered bat droppings were found near to an access point on the west elevation, and a cluster of droppings was found in the centre of the upper floor. The roof is lined with a black bitumen type felt which would obstruct anymore bat evidence should they be roosting beneath external roof tiles.

Overall the building was assessed to be of high bat roosting potential based on the number of potential bat roosting features identified internally and externally, and due to the bat droppings found internally. Therefore in accordance with current bat guidelines (Bat Conservation Trust Best Practice 3rd Edition 2016) three activity surveys comprising two dusk emergence and one dawn re-entry should be conducted during the optimum bat survey season (which runs May to September inclusive) in order to establish the presence/absence of roosting bats.

If following the completion of the three activity surveys, no bats were recorded emerging or re-entering the building, the proposed conversion works can commence without the need of any further survey effort or mitigation. If during the surveys bats are recorded using the building, a Natural England bat mitigation licence will need to be applied for and granted in order for the works to commence. The licence application will need to include a mitigation strategy which will be drawn up detailing how the bat roost onsite will be protected/replaced.

With regards for nesting birds, no evidence of past nesting was recorded externally or internally within the barn. If during the works a bird's nest is discovered, and it is active, works will need to cease within that area until the young have fledged the nest.

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1. Introduction

1.1. Site Description

Absolute Ecology was commissioned to undertake a Preliminary Roost Assessment for the bat roost potential at a site known as Isaac Walton Farm, Cresswell Lane, Staffordshire, ST11 9RE. Ordnance Survey grid reference: SJ97637 39418.

Figure 1: Location Plan



1.2. Proposed Works

Located to the north west of the residential dwelling is a two-storey barn, with the ground floors being used as a bike garage and tool shed, and the upper floor used for storage. Proposals will see the whole barn converted for residential use.

1.3. Best Practice Guidance

The scope of this appraisal has been determined in line with the proportional approach to ecological survey, assessment and subsequent recommendations for avoidance and mitigation of impacts, which is encouraged in the emerging 'BS 42020: Biodiversity – Code of practice for planning and development'. This report has been prepared with du consideration for various best-practice guidance and methodologies including those of the Chartered Institute of Ecology and Environmental Management (CIEEM (2012), the emerging BS 42020 and the Bat Conservation Trust Best Practice 2016.

1.4. Aims of the Survey

The aims of the Preliminary Roost Assessment is to provide an ecological evaluation of the following species within the proposed application area:

Bats
• Probability of bats and their roost sites being present at the proposed re/development site.
• To assess the roost status.
• To assess suitable food resources and habitat requirements.
• If a roost site is found, to provide an impact assessment.

Table 1. Aims of survey in relation to bats.

A bat roost is interpreted as 'any structure or place, which any wild bat uses for shelter or protection'. Bats tend to show a high fidelity to roosts. Subsequently, legal opinion regards a roost to be protected whether or not the bats are present at the time. There are many types of roost used by temperate bats during their annual cycle: Any structures found having evidence of bats will be further evaluated to assess which of the following roost categories may be present onsite (if any):

Status	Description
Maternity / Nursery Roost	*used by breeding bats, where pups are born and raised to independence (Anecdotal evidence may support this prospect despite sub-optimal survey period).*

Hibernation Site	*where bats may be found during the winter. (This is assessed within the context of this report).*
Daytime Summer Roost	*used by males and/or non-breeding females (Seasonal limitations prevent robust analysis of this).*
Night Roost	*where bats rest between feeding bouts during the night but are rarely present during the day.*
Feeding Roost	*where bats temporarily utilize feeding perches and stations to eat an item of prey.*
Transitional (or Swarming) Site	*where bats may be present during the spring or autumn (This can not be assessed within the context of this report).*

Table 2. Bat roost status definitions

Birds
• Establish if birds are using the site.
• Locate nest sites, if present.
• Assess what types of activities were shown within the redevelopment site.
• Assess suitable food resources and habitat requirements.
• Provide an impact assessment, if nests are found.

Table 3. Aims of survey in relation to birds.

Barn Owl (*Tyto alba)*
• Establish presence onsite.
• Establish potential nest sites (PNS).
• Locate any active roost sites (ARS).
• Locate any temporary roost sites (TRS)
• Assess potential feeding and dispersal habitats (PFH)
• Provide an impact assessment, should barn owl(s) be present

Table 4. Aims of survey in relation to Barn Owl.

Assessment also considers potential effects on valued ecological receptors (VERs) and zones of influence (ZoI) during pre and post development, both onsite and off- site. The term Zone of Influence is used to describe the geographic extent of potential impacts of a proposed development. Should a likely significance of negative impacts be identified, further surveys, mitigation and enhancement measures will then be determined accordingly; to prevent, offset or reduce the degree of impact that may occur should development commence.

Should bats be present or evidence of bats identified onsite or that constraints are identified during the Preliminary Roost Assessment, then further survey would be required, if bat are identified then a European Protected Species (EPS) development license issued by Natural England (NE) may be required prior to any works taking place. If required, further presence/absence survey should be undertaken and a mitigation strategy be implemented with Natural England and the Local Planning Authority. Should no further surveying effort be considered, then the PEA report will include full justification and evaluation.

2. Methods

2.1. Summary of Survey Methods

All bat species resident in the UK have been recorded using trees, buildings and built structures, e.g. bridges, at some time during the year (Bat Conservation Trust, 2016 3rd Edition). The buildings were inspected externally and internally, where access was available, for signs of bat activity. These typically include bat presence, droppings, feeding remains, urine stains and grease marks. Notes were made on the following in accordance with the guidelines published by the BCT (Bat Conservation Trust, 2016 3rd Edition) for the surveying of buildings and built structures:

- Type and age of building
- Type of construction
- Presence of potential roost features, e.g. hanging tiles, raised tiles, roof voids
- Information or evidence of work having been undertaken that could affect use of the structure by bats
- Amount and location of evidence of bats such as presence of live or dead bats, droppings, grease marks, urine stains, characteristic smell of bats.

In the absence of any evidence, trees and structures have been assigned a rating of suitability from negligible to high potential for supporting bats. The rating is based on the location of the structure in the surrounding landscape, the number and type of features suitable for use by bats and the surveyor's experience. For example, a structure with a high level of regular disturbance and few opportunities for access by bats that is in a highly urbanised area with few or no mature trees, parkland, woodland or wetland would have negligible potential. Conversely, a pre-20th-century or early 20th-century building with many features suitable for use by bats close to good foraging habitat would have high potential.

Survey methodology also utilized a number of passive monitoring techniques including an infra-red night-vision camera (XLT Bushnell Trophy CamTM: USA) to qualitatively record any evidence of bat activity inside the building during surveying periods. Further equipment included a NVMT-12x24 night vision scope (Yukon: USA), a SeeSnake 2 video endoscope, a GPS eTrex Venture HC, a hand net and a CB2 Clubman Deluxe high-power lamp with filter.

All bat species resident in the UK have been recorded using trees, buildings and built structures, e.g. bridges, at some time during the year (Bat Conservation Trust, 3rd Edition 2016). Bats roost in natural holes, crevices and sheltered places. These features particularly tend to occur in mature trees. The most utilised types of tree are Oak spp., Ash, Beech and Scots Pine. Trees,

especially when forming a linear feature, are also of value for navigation, foraging and as flight lines.

The trees were first visually inspected from the ground using binoculars and high-powered torches, where appropriate. Features were then inspected with an endoscope using a ladder for aerial tree climbing, when required.

The trees were assessed for their potential to support bat roosts. Signs of bat roosts in trees, according to the Bat Conservation Trust (BCT) (3rd Edition 2016), are as follows, these typically include bat presence, droppings, feeding remains, urine stains and grease marks. Notes were made on the following in accordance with the guidelines published by the BCT (2016 3rd Edition 2016) for the surveying of buildings and built structures: The trees present on site have been evaluated to assess which of the following

Categories they fall into (BCT 3rd edition):

Low roost suitability	Moderate roost suitability	High roost suitability
May to August (structures) No further surveys required (trees)	May to September with at least one of surveys between May and August	May to September with at least two of surveys between May and August

2.2. Pre-Survey Data Search

Ecological data searches supplied by Staffordshire Ecological Records (SER) were acquired to establish whether any notable protected bat species have been recorded within a 2-km radius of the proposed re/development area. Furthermore, a desktop study of the area using online resources was undertaken independently to corroborate the current overview of the site and its importance in the landscape. A number of electronic sources were consulted, including www.magic.gov.uk, www.naturalengland.org.uk and Google Earth.

2.3. Surveyor Information

Helen Staton – BSc (Hons) ACIEEM, Natural England Bat Survey Class Licence CL18, Registration Number: 2015-14490-CLS-CLS. Helen has been working for ecological consultancies for over nine years and has held a Level 1 bat licence for 7 years. Helen is an experienced bat surveyor with competency in activity surveys, dawn and dusk bat roost assessments, daytime surveys for bat field signs, assessments of trees as potential bat roosts and the production of reports providing advice on best practice, mitigation and compensation works relating to bats as may be required.

Sarah Higginson – QCIEEM, Sarah is a Qualifying Member of the Chartered Institute of Ecology & Environmental Management. Sarah has been working as an Assistant Ecologist for Absolute Ecology since January 2019 and has been carrying out bat surveys since August 2018. Sarah is competent with activity surveys, dawn and dusk bat roost assessments, daytime surveys for bat field signs, assessments of trees as potential bat roosts and the production of reports providing advice on best practice.

2.4 Field Surveys

Equipment used to aid the survey included low and high-powered torches, ladders, binoculars and an endoscope.

A scoping survey was undertaken on 30/07/2019 such scoping exercises can be undertaken throughout the year. Other than when assessing trees, environmental factors such as the weather do not have an impact upon the overall assessment survey results (see Table 5).

Table 5. Annual survey optimality for bats.

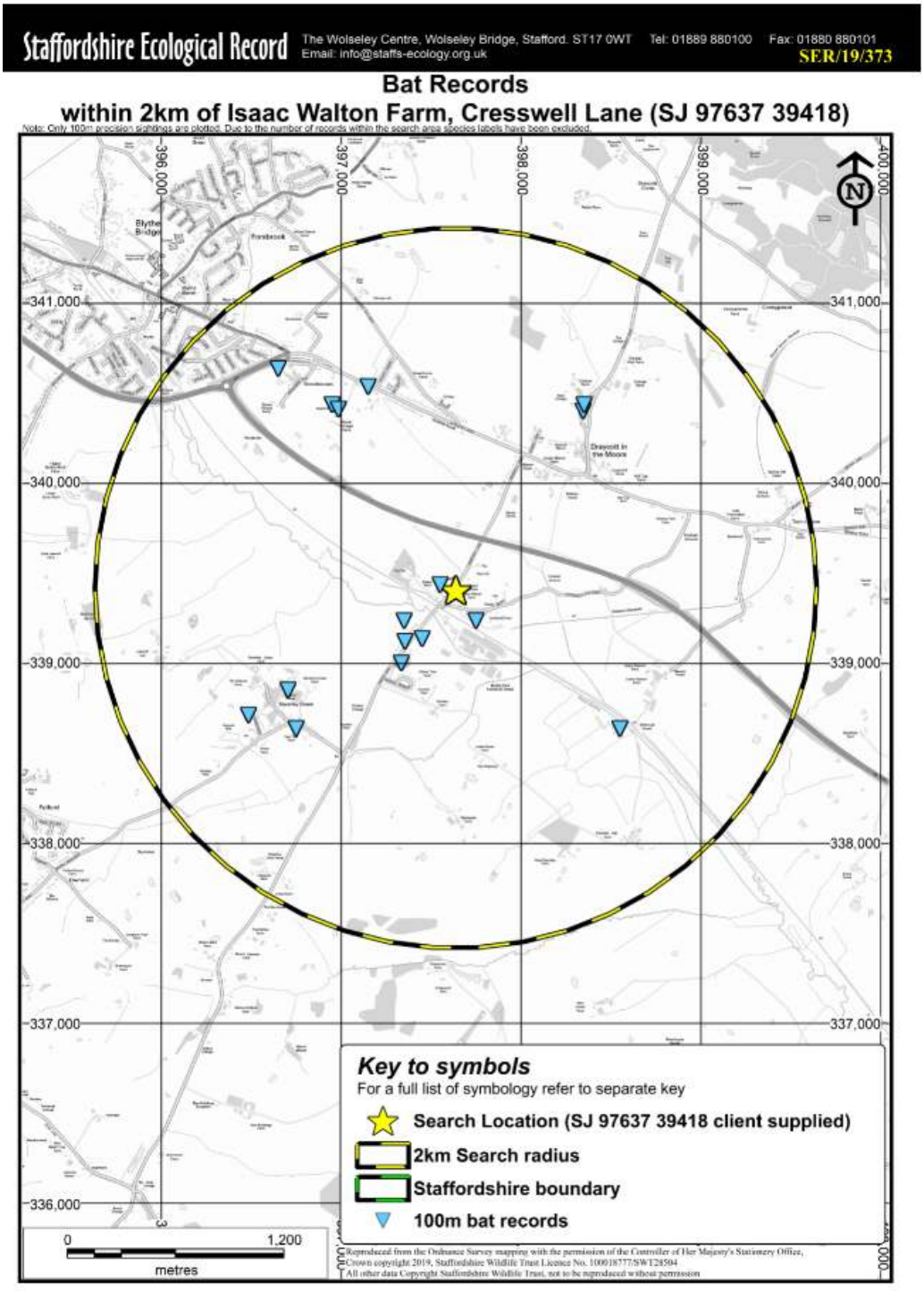
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Inspection of hibernation roosts – semi-optimal survey period			Limited activity – sub-optimal for surveys	Summer roost emergence & re-entry surveys – optimal survey period					Limited activity – sub-optimal survey period	Inspection of hibernation roosts – semi-optimal survey period	
Internal roost surveys are possible/trees are best surveyed during winter											

The external inspection incorporated visual assessment with the use of binoculars, torch, endoscope and ladders in full daylight to ascertain the following:

- Potential ingression points cracks, raised roof tiles
- Any anecdotal evidence of bats, i.e. droppings, grease marks, feeding remains.
- Any evidence of birds, i.e. nest material, droppings.
- To locate potential bat roost/ bird nest sites.
- To listen for any bats and birds.
- To examine floors, walls and structural elements for anecdotal evidence, i.e. droppings, urine stains, corpses and feeding remains.

3. Results

3.1. Pre-Survey Data Search



Protected Species.

SER returned 38 records of bats within 2km of the site. Five species of bat were identified; common pipistrelle *(Pipistrellus pipistrellus),* soprano pipistrelle *(Pipistrellus pygmaeus),* brown long eared *(Plecotus auritus),* daubenton's bat *(Myotis daubentoniii),* and brandt's bat *(Myotis brandtii).* Of the thirty-eight records, thirty-one are considered to be historic (recorded over ten years ago). Of the remaining seven records, three were recorded less than 500 meters away.

3.2. Field Surveys

Habitat Description

Isaac Walton Farm is located within a rural location of the Hamlet of Cresswell, which is approx. 1 mile south west of Blythe Bridge. It is immediately bounded by a main road to the west, residential property to the north and south, and agricultural farmland to the east.

Within the wider area are habitats of high value for bats including waterbodies, water courses, woodland, hedgerows and treelines. Using aerial imagery, the site is well connected to areas of high value habitat. The site and surrounding area are considered to be of high value for foraging/ roosting/ commuting bats, offering a high value of habitats type which would attract a range of bat species to the area.

Roost Survey

External Inspection

The surveyed barn is solid brick in construction, with a pitched tiled roof (photographic plate 1). On the lower floor are three doors, all of which remain closed and well-sealed. Located on the upper floor on the north west elevation are ventilation slits running across from north to south providing potential access points to bats into the building (photographic plate 2). A wooden window is located in the middle of the north west elevation which remains closed and well sealed. A wooden door is located on the south east gable end which also remains closed however small gaps are present at the bottom, providing potential access to bats into the building (photographic plate 3). The brickwork appears in overall reasonable condition, with some gaps in between bricks where mortar has come away on the south eastern elevation. Ivy species cover the south west elevation, creating potential roosting features for bats (photographic plate 1). A lean two on

the south east elevation has a corrugated sheeting, gaps are present where the roof meets the brick allowing access for bats, and potential roosting features are present between the wooden boards and the roofing (photographic plate 4). An extension at the north west of the barn has a flat concrete roof and is single storey (photographic plate 5).

Internal Inspection

On the lower floor from west to east, the first room, is used as a bicycle workshop. There are no windows and the door remains shut. No bat droppings were found here. The second room along is a larger garage used to store electrical items and tools. There were no windows, and no bat droppings were found here. The final room is currently being used for storage and an outhouse kitchen (photographic plates 6 & 7). There is one single pane wooden window, which remains closed and is well sealed. From this room, access via the loft hatch is provided to the upper floor. The upper floor is one open planned space, with a carpet floor, largely empty but being used to store some items (photographic plate 3). Wooden beams support the roof throughout. Cracks and crevices in the wood, and where the wooden beams meet the brickwork and roof, provide potential roosting features for bats (photographic plates 8 & 9). The roof is lined with bitumen felt, creating potential roosting features for bats between this and the tiles (photographic plate 10). Scattered bat droppings were recorded underneath the air vents on the west elevation and a cluster of bat droppings (approx. 40) were found at the centre of the loft beneath the ridge of the roof (photographic plates 11 & 12). 8 droppings were collected for analysis. The brickwork is exposed, and gaps in the brickwork throughout the interior provide potential roosting features for bats.

Photographic plate 1: Photograph showing the south west elevation



Photographic plate 2: Photograph showing vents along the north west elevation.



Photographic plate 3: Photograph of the upper floor taken from south east looking north west.



Photographic plate 4: Photograph of the lean 2 on the south east elevation.



Photographic plate 5: Photograph of extension on the north west of the barn.



Plate 6 & 7: Photographs showing the outhouse kitchen on the lower floor.





Plate 8 & 9: Photographs showing the wooden beams with cracks and crevices on the upper floor





Plate 10: Photograph showing roof of upper floor lined with felt.



Plate 11 & 12: Photographs showing bat droppings found on upper floor.





4. Assessment

4.1. Constraints on Survey Information

No constraints identified during the survey.

4.2. Constraints on Equipment Used

No constraints identified during the survey.

4.3. Potential Impacts of Development

Roosts

The building was assessed to be of high value for supporting roosting bats. Should bats be roosting within the barn and it is converted for residential use, the roost would likely be destroyed, and individual bats killed/harmed.

Foraging and Commuting Habitat

Any lighting design around the new redevelopment should be considered at an early stage. Light spill can affect the foraging and commuting strategy of many species and should be avoided onto nearby trees and hedges/shrubs, and should not exceed 200 lumens (150 watts). Any security lighting should be on a timer setting and faced down to prevent spillage onto nearby habitats. The height of any lighting columns around the development should not exceed eight metres to further reduce any ecological impact of light pollution. Low-pressure sodium lamps (SOX) fitted with hoods are recommended to direct light below the horizontal plane to minimise upward light spill.

Birds

No evidence of bird nesting was recorded during the external or internal inspection of the building. Therefore, no impacts are anticipated.

4.4. Legislation and Policy Guidance

Unlike many smaller mammals, bats have low fecundity with a long and complex life cycle, which is played out over a large spatial landscape. Bats show a strong fidelity to different types of roosts throughout their annual cycle i.e. hibernacula, maternity, bachelor, satellite roosts and feeding perches. Linear features within the landscape such as hedgerows and tree lines are often used by bats for commuting, predator avoidance and foraging. Bats are highly social animals and loss of a single habitat alone can have a serious impact on populations. The status of many bat populations is tentative, being based on relatively few records and are highly susceptible to habitat loss and fragmentation. As such bats are given protected consideration within the following legislation and policy guidelines:

Policy guidelines

PAS 2010	The published 'PAS 2010' 'Planning to halt the loss of biodiversity' which is the government's new policy aimed at all authorities and developers involved in the planning process in the UK to halt biodiversity decline by 2010 and deliver net biodiversity gains as part of the green infrastructure provisions.
National Planning Policy Framework, Section 11:	The recently published framework in 2012, replaces the previous Planning Policy Statement 9. Section 11: Conserving and enhancing the natural environment, reaffirms the Governments commitment to maintaining green belt protections and preventing urban sprawl, retains the protection of designated sites and preserves wildlife, aims to improve the quality of the natural environment, and halt declines in species and habitats, protects and enhances biodiversity and promotes wildlife corridors.
Article 10 of the EC Habitats Directive:	The published Article requires government to develop features such as 'stepping stones' on the landscape, such as clusters of ponds, tracts of rough grassland or scrubland and vegetated railway line embankments.
Wildlife and Countryside Act 1981:	All species of bat are fully protected under the Wildlife and Countryside Act 1981, the European Conservation (Natural Habitats etc.) Regulations 1994, and the Countryside and Rights of Way Act 2000. This legislation makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.
Conservation of Habitats and Species Regulations (2010)	The Conservation of Habitats and Species Regulations 2010 consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994, in respect of England and Wales. It is an offence to possess, sell or offer, or transport for sale any European species of bat or any part derived from such a species. These Regulations also remove the 'incidental result defence'. In other words, it is no longer a defence to show that the killing, capture or disturbance of a species covered by the Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of a lawful activity. Natural England can grant European Protected Species (EPS) licences in respect of development to permit activities that would otherwise be unlawful.

Natural Environment and Rural Communities Act (2006)	Under Section 40 of the Natural Environment and Rural Communities Act (2006), public bodies, including Local and Regional Planning Authorities, have a duty to 'have regard' to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act, the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England. This is known as The England Biodiversity List, all of which make up the UK BAP Priority Species. Regional Planning Bodies and Local Planning Authorities will use it to identify the species that should be afforded priority to maintain, restore and enhance species and habitats.
Bird legislation	Most resident nesting birds are protected under the Wildlife and Countryside Act 1981, which protects birds, nests, eggs and nestling's. Some rarer species, such as barn owls, are afforded extra protection.

Please note: If bat species are present at the site, the purpose of this report will only summarize the potential requirements for a bat mitigation package or project. A separate mitigation report or project will include the necessary compensation measures to maintain the conservation status of a European Protected Species.

5. Recommendations and Mitigation

5.1. Further Surveys

The building has been assessed to be of high value for supporting roosting bats. This assessment has been based on the number of potential external roosting features present which are located across the roof and due to the presence of bat droppings located internally.

As the building was assessed to be of high value for supporting roosting bats, further surveys are required to confirm the presence/absence.

Buildings of high potential are subject to three activity surveys, two dusk and one pre-dawn. Activity surveys should be undertaken during the optimum survey period which runs from May-September and during suitable weather conditions. The surveys should be spaced at least two weeks apart.

With regards for birds, as no current or recent bird nesting evidence was recorded, no constraints relating to nesting birds are envisaged and therefore no further measures are required.

If at any point during the works a bird nest is discovered and it is active, works will need to cease in that area until the young have fledged the nest.

5.2. Mitigation Measures

Should no bats be recorded during the activity surveys, their current absence can be assumed and the proposed conversion into a residential usage can proceed without any mitigation requirements.

If during the activity surveys, bats are recorded to be roosting within the building, and once the roost has been characterised (e.g occasional, summer, maternity roost), a European Protected Species Licence (EPSL) will need to be applied for and granted to allow for the destruction of the roost(s). As part of this licence a mitigation strategy will need to be devised detailing the preservation of the roost or construction of a replacement roost. This is to maintain the onsite bat population(s). Likely mitigation would involve the retention of existing features, creation of a bat loft, and/or the installation of bat boxes/ additional roosting features. The level and type of mitigation requirements are dependent on the species and the number of bats roosting.

7. References

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