



**12 Watergates,
Colerne, Chippenham**

Bat and Nesting Bird Survey Report

September 2024

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DOCUMENT CONTROL

12 Watergates, Colerne, Chippenham Preliminary Bat Roost and Nesting bird Assessment				
Revision	Date	Prepared by	Checked by	Approved by
1.0	15 July 202427 September 2024	Maggie Sykes Assistant Ecologist	Evie Rice Assistant Ecologist	Paul Hudson MCIEEM Principal Ecologist
12 Watergates, Colerne, Chippenham Bat and Nesting Bird Survey Report				
2.0	27 September 2024	Evie Rice Assistant Ecologist	Kat Oliver Assistant Ecologist	Paul Hudson MCIEEM Principal Ecologist

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Summary

Brief and Site Location	This report presents the findings of a bat and nesting bird survey of a cottage and garage at 12 Watergates, Colerne, Chippenham, SN14 8DP (Ordnance Survey Grid Reference: ST 8214 7112).
Proposed Works	The development proposals include altering the cottage roof for a loft conversion. At the time of writing architectural plans had not been finalised.
Survey Methodology	The survey comprised the following: • A preliminary bat roost assessment of the cottage and garage searching for signs of bats and nesting birds; • One dusk emergence survey of the cottage and the garage; and • One dusk emergence survey of the cottage.
Results of Preliminary Bat Roost Inspection	No signs of bats were found during the internal and external inspection of the cottage. The cottage is within a high-quality area for foraging and commuting bats.
Result of Dusk Emergence Surveys	No bats were recorded emerging from or re-entering the buildings during the dusk emergence surveys.
Suitability of the Site to Support Roosting Bats	The site has moderate suitability to support roosting bats. Details of the features that led to this assessment are set out in Section 3.2 of this report and are shown in the corresponding photographs. Justification for this assessment is provided within Section 4.2.
Evidence of Nesting Birds	No evidence of past or current nesting by birds was noted either within or on the exterior of the buildings.
Requirements for Additional Survey	None required.
Predicted Impacts of Development on Bats and Nesting Birds	Based on the conclusion that bats are unlikely to be using the buildings, no negative impacts on bats are anticipated. Based on the conclusion that birds are unlikely to be using the buildings, no negative impacts on birds are anticipated.
Mitigation and Compensation of Proposed Impacts	Mitigation and compensation measures for bats and birds are given in Section 6 of this report.
Licensing Requirements for Bats	None required.
Required Actions	Detailed recommendations are given in Section 6 of this report. These include precautionary methods and guidance for action to take if bats are found during the works.

1. Introduction

1.1. Brief and Site Location

This report presents the findings of a bat and nesting bird survey of a cottage and garage, at 12 Watergates, Colerne, Chippenham, SN14 8DP (Ordnance Survey Grid Reference: ST 8214 7112)¹.

The site is within the boundary of Wiltshire Council.

1.2. Site Description

The three-bed semi-detached cottage with a standalone garage sits in the south-east of Colerne village. The garage sits to the south-east of the cottage, to the east of the cottage's southern garden. The cottage is attached to a neighbouring property on the western elevation. The site is located on a single-track street with houses on either side of the road. A tree-filled graveyard is 0.05 km north. The garden, bordered by hedgerows and trees, extends south into fields. Fields with hedgerows and trees surround the property to the north, east, and south, with a small woodland to the south.

The site's location is shown on Plan 1: Location Plan.

1.3. Proposed Works

The development proposals include altering the cottage roof for a loft conversion.

At the time of writing architectural plans had not been finalised.

1.4. Legislation and Planning Policy

1.4.1. Bats

All UK bats are protected species. Their breeding sites or resting places² (roosts) are fully protected under the Wildlife and Countryside Act 1981³ (as amended) and the Conservation of Habitats and Species Regulations 2017⁴ which continues to apply in UK law through the Conservation of Habitats and Species (Amendment) (EU Exit) [CHSAEU] Regulations 2019⁵. Works affecting bats are subject to licensing procedures by Natural England (NE). The legal protection and licensing procedures are summarised in Appendix 1.

¹ Latitude and Longitude: 51.438754, -2.2583065/ what3words: stuns.movements.newsprint

² Resting places are defined as '*areas that are essential to sustain an animal or group of animals when they are not active*' (European Commission, Directorate-General for Environment, 2022). Resting places that are used regularly, either within or between years, must be protected even when not occupied.

³ <https://www.legislation.gov.uk/ukpga/1981/69>

⁴ <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>

⁵ <https://www.legislation.gov.uk/ukdsi/2019/9780111179512>

1.4.2. Nesting Birds

All wild British birds (when building nests, nesting and sitting on eggs) and their nests and eggs, (with certain limited exceptions⁶) are protected by law under Section 1 of the Wildlife and Countryside Act 1981⁷ (as amended) and the Countryside and Rights of Way Act 2000⁸. Some species, such as barn owls (*Tyto alba*), are listed in Schedule 1 and have additional protection from disturbance during the breeding season, as do their nests, eggs and dependent young.

1.5. Survey Scope

The survey comprised the following:

- A preliminary bat roost assessment which included a survey for nesting birds;
- One dusk emergence survey of the cottage and garage; and
- One dusk emergence survey of the cottage.

1.6. Reporting

This report aims to:

- Outline the survey methodology used;
- Present the results of the survey including determining the actual or potential presence of bats and nesting birds;
- Determine the need for further targeted surveys; and
- Provide suitable recommendations in line with planning policy and wildlife law, including potential licencing requirements, mitigation, compensation and enhancement measures.

⁶ Details of the exceptions are available under licences GL40, GL41 and GL42 at <https://www.gov.uk/government/collections/general-licences-for-wildlife-management#birds>

⁷ <https://www.legislation.gov.uk/ukpga/1981/69>

⁸ <https://www.legislation.gov.uk/ukpga/2000/37>

2. Methods

2.1. Desk Study

Maps and aerial photographs of the site and surrounding area, including existing habitats, were assessed. A search for statutory and non-statutory conservation designated sites for bats within a 10km radius was undertaken using NE Geographic Information System (GIS) data. A 2km search was undertaken for all other statutory and non-statutory conservation designated sites.

A local planning portal search was undertaken. This involved looking for other sites, within the same postcode area, which have previously had bat surveys submitted as a part of their planning applications.

A Magic database search for granted European Protected Species Mitigation Licences (EPSMLs) within a 2km radius of the site was undertaken.

2.2. Field Study

2.2.1. Daytime Internal and External Inspection

A systematic search of the exterior and interior of the cottage and garage was undertaken following the methodology detailed in Section 5.2 of the Bat Survey Guidelines (Collins 2023). The survey looked for features that bats could use as access points and roosts⁹. In addition, a search was made for the presence of bats or evidence of bat use, such as droppings, feeding remains, urine staining, scratch marks, live or the remains of dead bats and/or squeaking noises. A high-powered torch (Clulite), binoculars and a ladder were available for use, as appropriate during the survey.

The survey was undertaken on 26th June 2024 by Maggie Sykes¹⁰.

2.2.2. Assessment of Bat Roosting Suitability

The value of the site for bats (and any potential roost sites therein) was assessed, in accordance with Table 4.1 of the Bat Surveys for Professional Ecologists (Collins, 2023) (see Appendix 2). The assessment was based on the relative abundance and quality of potential roost sites, and the habitat features within both the site and the surrounding landscape suitable for roosting, foraging and commuting bats.

Assessment of 'classic' and 'non-classic' winter hibernation potential was undertaken with consideration of Section 4.3.7 and Figure 1 of the Bat Surveys for Professional Ecologists (Collins, 2023).

⁹ Bats can utilise gaps approximately 8mmx17mm in size (The Bat Conservation Trust, Cluster-flies leaflet mentions 8mm by 20mm whilst the Bats and Buildings leaflet states 9mm by 17mm).

¹⁰ Maggie graduated with an Integrated Masters in Biological Sciences (with an interest in ecology) from Cardiff University. She works for Acer Ecology Ltd as an Assistant Ecologist, completing survey seasons in 2022 and 2023 (including working on a range of preliminary scoping surveys and species activity surveys). Further details of her qualifications and experience can be found at <https://uk.linkedin.com/in/maggie-finlayson-sykes-2b9a59171>

2.2.3. Dusk Emergence Surveys

Four surveyors carried out the survey on the 20th of August 2024 on the cottage and the garage. Two surveyors carried out the survey on the 16th of September 2024 on the cottage. Both dusk emergence surveys commenced 15 minutes prior to sunset and continued until 90 minutes after sunset. Surveyor details can be found in Appendix 5.

Surveys were undertaken following the methodology detailed in Section 7.2 of the Bat Survey Guidelines (Collins, 2023). The surveyors were all equipped with Elekon Batlogger M bat detectors. The whole of the building was kept in view of the surveyors at all times. Each surveyor was also equipped with a Nightfox Red infrared camera each supplemented with a Nightfox XB5 850nm Infrared LED flashlight. Video footage was subsequently viewed using VLC Media Viewer. Screenshots from the cameras at the darkest point of each survey to illustrate the field of view and visibility are provided in the report.

2.2.4. Nesting Bird Survey

A visual search was undertaken for active bird nests, as well as any signs which might indicate either past or current nesting, such as guano, singing birds, birds carrying nesting material, food items, faecal sacs and calling chicks.

2.2.5. Constraints

Temporal Constraints

An ecological survey can only identify what is present on site at the time the survey is conducted. However, habitat usage by species can change over time.

Evidence of Bats

Often bats leave no visible signs of their presence even on the inside of a building, particularly where there are hidden cracks, crevices and voids. It is not always possible to inspect all locations where bats may be present and therefore an absence of bat evidence does not equate to evidence of bat absence.

Local Records Centre Data Search

A Local Records Centre (LRC) data search was not undertaken due to the low impact and small-scale nature of the development. Current proposals suggest no land will be lost or linear features severed. The overall impact on biodiversity is likely to be localised and of low significance. It is very unlikely that the development will have any impact outside the footprint of the works. The data search results are considered unlikely to impact the decision-making process, and there is limited potential for key information to have been missed.

This approach is consistent with CIEEM's Guidelines for Accessing and Using Biodiversity Data (2020), which states that in low impact/small-scale scenarios, a LRC search may not be required.

3. Baseline Ecological Conditions

3.1. Desk Study

3.1.1. European Protected Species Licences Granted

European Protected Species Licence (EPSL) records¹¹ show that two licences have been granted for projects within 2km of the cottage, the species that were affected are detailed in the table below.

Table 1: Granted EPSLs within 2km of the cottage

Case Reference of Granted Application	Approximate Distance from Site	Species Affected	Licence Start Date	Licence End Date	Impacts Allowed by Licence
2018-38150-EPS-MIT	1.16km	Common pipistrelle (<i>Pipistrellus pipistrellus</i>), lesser horseshoe (<i>Rhinolophus hipposideros</i>) and Natterer's bat (<i>Myotis nattereri</i>)	01/01/2019	01/01/2029	Destruction of a resting place
2015-7580-EPS-MIT	0.82km	Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	20/03/2015	31/12/2020	Destruction of a resting place

3.1.2. Bat Roosts Reported in Planning Applications Within the Same Postcode

The planning portal search¹² returned no bat roost records from a search of sites with the same postcode area as the proposed development.

3.1.3. Protected Sites

The location of protected sites is shown in Plans 2 and 3: Protected Sites Within 2km and 10km respectively.

Special Areas of Conservation (SACs) Notified for Bats Within 10km

The table overleaf details the sites designated for bats within 10km of the site:

¹¹ Accessed via <https://bit.ly/2v6i81e>. The dataset contains granted EPSL applications issued by Natural England. However, the data set is incomplete and only includes granted EPSLs up to May 2019.

¹² [PR Search Results \(wiltshire.gov.uk\)](https://www.wiltshire.gov.uk/pr-search-results)

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Table 2: Statutory Sites Designated for Bats Within 10km

Site Name	Description	Distance and Direction from Development Site
Bath and Bradford upon Avon Bat SAC ¹³	This site comprises extensive networks of caves, mines and man-made tunnels which are used by bats for hibernation, mating and as a staging post prior to dispersal. It also includes areas of calcareous grassland, scrub and woodland which are used as feeding and commuting habitat by the bats. The species it hosts include greater (<i>Rhinolophus ferrumequinum</i>) and lesser horseshoe bats, and Bechstein's bat (<i>Myotis bechsteinii</i>). The component SSSIs are Box Mine SSSI, Brown's Folly SSSI, Combe Down and Bathampton Down Mines SSSI and Winsley Mines SSSI.	2.17km south-east of the site.

Other Protected Sites Within 2km

There is an additional SSSI within 2km of the cottage:

Table 3: Statutory Sites Within 2km

Site Name	Description	Distance and Direction from Development Site
Colerne Park and Monk's Wood SSSI ¹⁴	Colerne Park and Monk's Wood is a southern calcareous ash-wych elm wood on the oolitic limestone of the Wiltshire Cotswolds. The woodland is a mixture of high forest and coppice-with-standards. Ash, wych elm, field maple and hazel occur mainly as former coppice, with ash and pedunculate oak standards. A well developed and diverse shrub layer includes such species as dogwood (<i>Cornus sanguinea</i>), privet (<i>Ligustrum vulgare</i>), spindle (<i>Euonymus europaeus</i>) and blackthorn (<i>Prunus spinosa</i>). The ground flora is dominated by bramble, bluebell (<i>Hyacinthoides non-scripta</i>) and dog's mercury (<i>Mercurialis perennis</i>) with ramsons (<i>Allium ursinum</i>).	1.67km north-east of the site.

¹³ <https://designatedsites.naturalengland.org.uk/TerrestrialAdvicePDFs/UK0012584.pdf>

¹⁴ [1003288 \(naturalengland.org.uk\)](https://designatedsites.naturalengland.org.uk/1003288)

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	occurring more locally. Such largely open areas provide for a diversity of mammals, birds and insects. Dingy skipper (<i>Erynnis tages</i>), grizzled skipper (<i>Pyrgus malvae</i>) and common blue (<i>Polyommatus icarus</i>) are amongst the butterflies present.	
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There is no mention of bats in the SSSI citation, however, the site is likely to be used by several bat species for foraging, commuting and roosting.

National Landscapes

The proposed development site lies within the Cotswold National Landscape. National Landscapes are designated for their aesthetic and recreational value as opposed to wildlife value. However, they also often contain habitats of high ecological value. The small scale of the development proposals mean that works are not anticipated to adversely affect the character of the National Landscape. It is, therefore, not mentioned any further in this report. However, consideration will need to be given to the overriding character, building detail and associated lighting of the proposed development.

Ancient Woodland Sites

The following table shows the ancient woodland sites within 2km of the site:

Table 4: Ancient Woodland Sites Within 2km

Ancient Woodland Site	Number within 2km of Site
Ancient Semi-Natural Woodland (ASNW) ¹⁵	Eight
Plantations on Ancient Woodland Sites (PAWS) ¹⁶	Three
Nearest Area of Ancient Woodland	An unnamed area of ASNW located 1.10km south-west of the site.

Protected Sites Summary

The site lies within Cotswolds National Landscape, and so consideration will need to be given to the overriding character, building detail and associated lighting of the proposed development.

Given the small scale and localised nature of the proposed development, the distance between the proposed development and any designated or non-designated sites, as well as the limited scope for impacts outside of the footprint of the proposed works, no adverse impacts to the SAC or SSSI or ancient woodland sites are likely to occur. These sites are not mentioned further in this report.

¹⁵ Ancient Semi-Natural Woodland (ASNW) – broadleaf woodlands comprising mainly native tree and shrub species which are believed to have been in existence for over 400 years.

¹⁶ Plantation on Ancient Woodland Sites (PAWS) – sites which are believed to have been continuously wooded for over 400 years and currently have a canopy cover of more than 50 percent non-native conifer tree species.

3.2. Field Study

3.2.1. Lighting and Ecological Context

Lighting

The site is within an E3: Suburban lighting zone, with medium district brightness (Institute of Lighting Professionals, 2012).

The site is situated on the edge of a village. Whilst fields and woodland are present directly to the south, the site is within a residential area and will experience moderate levels of artificial lighting from the streetlighting and properties to the north, east and west. This will decrease the quality of foraging and commuting bat habitat¹⁷.

Ecological Context

The habitats surrounding the street include a tree-filled graveyard 0.05km north, a garden bordered by hedgerows and trees extending south into fields, and fields with hedgerows and trees to the north, east, and south. A small woodland lies to the south. These features create ecological corridors for bats to commute and forage, connecting the cottage to the wider landscape. This network offers high-quality habitat for foraging, commuting, and roosting bats, making the site ecologically well-connected (see Appendix 3).

3.2.2. Building Description from the Perspective of Bat Habitat

The tables below summarise the key features of the cottage and garage.

Table 5: Key Features of the Cottage

Building Type	The cottage is a two-storey three-bed semi-detached cottage constructed of brick, stone and mortar (Photos 1-3). The cottage adjoins a neighbouring building on the western elevation.
Roof	The roof is pitched on an east-west axis and has an open gable structure on the eastern elevation. The roof is divided into two clear sections (the western section being the original cottage roof and the eastern portion having been constructed more recently as part of an extension to the cottage). The original roof is constructed from slates with clay ridge tiles, whilst the newer extension roof is constructed of clay tiles and clay ridge tiles (Photo 4). The roof tiles are generally poorly aligned and provide numerous crevices on the northern and southern roof pitches that could be utilised by roosting bats (Photos 5 and 6). Edge tiles at the eaves are impeded by close-fitting guttering on the northern and southern elevations (Photos 7 and 8). Edge tiles at the eastern gable end are capped with lead flashing and stone slates which appears well-sealed (Photo 9). Similar lead flashing and stone slates adjoin the original roof to the extension roof (Photo 4).

¹⁷ Lighting can impact on bats' roosting sites, commuting routes and foraging areas.

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Chimneys	Three chimneys are present upon the roof of the cottage, one at each end of the roof pitch (eastern and western elevations) and one where the original cottage adjoins the extension (Photo 1). The chimneys are all constructed of stone and are in good condition.
Lead Flashing	There is lead flashing adjoining the bases of the chimneys to the roof, where the old and new roofs adjoin and at the eastern gable end– this is generally well sealed, however, some lifted areas suitable for roosting bats are present at the western most chimney and at the eastern gable end (Photos 10 and 11).
External Walls	The external walls are constructed of stone and mortar and are in good condition on all elevations (Photos 1-3).
Windows	The windows and doors have wooden frames and are in good condition, well-sealed in their apertures (Photos 1-3).
Roof Void	There are two roof voids in the cottage - one above the original cottage and one above the new extension. The wall between the two voids is constructed of brick and mortar and appears to be the original external wall of the cottage (Photo 12). The original cottage void is 2m high, 3m wide by 5m long. Light ingress was visible towards the top of the southern pitch at the eastern end of the void (where the two voids meet) (Photo 13). Light ingress was also visible at the base of the southern pitch at the western end of the void (where the void meets the neighbouring property) (Photo 14).
Roof Lining	The original cottage void is lined with synthetic, high resistance plastic underlay which is in good condition (Photo 15). The new extension void is lined with bitumen felt and supported with wire hex netting. The roof lining is largely in good condition with only few small tears, none of which expose the roof slates (Photo 16).
Roof Construction	The timbers making up the A-frame roof support structures in both voids appear in good condition (Photo 12).
Insulation of Void	Fibreglass insulation covers the floors of both of the roof voids (Photos 12 and 16), extending to the eaves, limiting the potential for bats to access the voids. The insulation was lifted in places and the void floor inspected underneath (Photo 17). Mice droppings were identified on top of and within the insulation (Photo 17).
Water Tank	There is a water tank within the internal roof void above the new extension. The tank is uncovered and disused. Detritus and clutter fills the tank (Photos 18 and 19).

Table 6: Key Features of the Garage

Building Type	The garage is a single-storey detached structure constructed of brick, stone and mortar (Photos 20-22).
Roof	The roof is constructed of clay tiles and clay ridge tiles (Photo 20) and pitched on a north-south axis, with open gables at each end (Photos 21 and 22). The roof tiles are generally well aligned do not provide crevices of large enough size for use by roosting bats (Photos 20). Edge tiles at the eaves are impeded by close-fitting guttering on the eastern and western elevations (Photos 23 and 24). Eroded mortar underneath the tiles at the eaves provide some crevices of sufficient size for use by roosting bats (Photo 23). Edge tiles at the northern gable end are capped with wooden cladding which appears well-sealed (Photo 25). Edge tiles at the southern gable end are uncapped and eroded mortar under clay tiles provides crevices of sufficient size to be used by roosting bats (Photo 26).
External Walls	The external walls are constructed of stone and mortar and are in good condition on all elevations (Photos 20-22).
Windows	The window and doors have wooden frames and are in good condition, well-sealed in their apertures (Photos 20 and 21).

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Roof Void	There are no roof voids in the garage- it is open to the apex internally (Photo 27).
Roof Lining	The garage roof is internally lined with synthetic, high-resistance plastic underlay which is in good condition (Photo 27).
Roof Construction	The timbers making up the A-frame roof support structures in both voids appear in good condition (Photo 27).
Security Lighting	A security light is present on the northern gable end of the garage (Photo 25).

Photos Showing the Buildings and their Features

Photo 1: Cottage Southern Elevation



Photo 2: Cottage Eastern Elevation



Photo 3: Cottage Northern Elevation



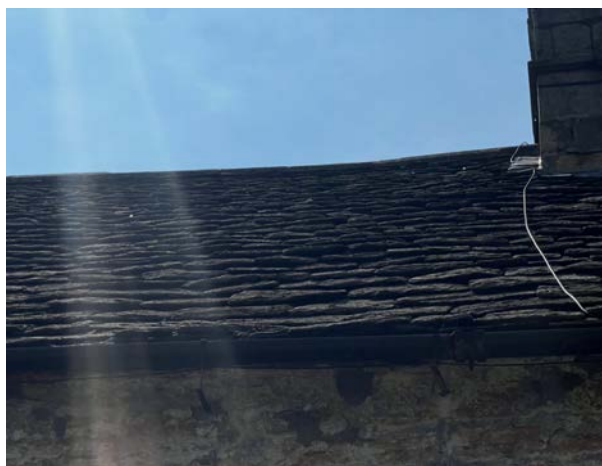
Photo 4: Cottage Clay Ridge Tiles



Photo 5: Cottage Southern Roof Tiles



Photo 6: Cottage Northern Roof Tiles



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Photo 7: Cottage Southern Gutters



Photo 8: Cottage Northern Gutters



Photo 9: Cottage Gable End Tile Seal



Photo 10: Gap Under Lead Flashing Western Chimney of Cottage



Photo 11: Gap Under Lead Flashing at Eastern Gable End of Cottage



Photo 12: Wall Dividing the Voids



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Photo 13: Cottage Void Eastern Light Ingress



Photo 14: Cottage Void Western Light Ingress



Photo 15: Original Cottage Void Lining



Photo 16: Extension to Cottage Void Lining



Photo 17: Mice Droppings On and Under Insulation



Photo 18: Disused Void Water Tank



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Photo 19: Disused Void Water Tank



Photo 20: Garage Western Elevation



Photo 21: Garage Northern Elevation



Photo 22: Garage Southern Elevation



Photo 23: Garage Western Guttering



Photo 24: Garage Eastern Guttering



Photo 25: Northern Gable End Tiles



Photo 26: Garage Southern Gable End Tiles



Photo 27: Internal View of Garage



3.2.3. Potential Bat Access Points and Bat Roosting Locations

Potential Access Points for Bats in the Cottage

Few potential access points for bats were recorded during the survey. The external walls are in good condition and do not provide any access into the interior of the cottage. The roof is generally well-sealed to the walls below at the eaves and gable ends. Some light ingress was visible from within the roof void of the original cottage where the roof met the western neighbouring property (Photo 14) and where the original roof meets the new extension roof (Photo 13). Gaps under poorly aligned tiles may provide access into the interior, however, the interior roof lining was in good condition, suggesting that this is unlikely.

Potential Access Points for Bats in the Garage

No potential access points for bats were recorded during the survey.

Potential Roosting Features for Bats in the Cottage

The following potential roost features were recorded:

- PRF 1 – Numerous raised roof slates on both roof pitches (see Photos 4-6, 10);

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- PRF 2 – Raised lead flashing at the base of the westernmost chimney (see Photo 10); and
- PRF 3 – Raised lead flashing at the eastern gable end (see Photo 11).

Potential Roosting Features for Bats in the Garage

The following potential roost features were recorded:

- PRF 4 – Crevices underneath roof tiles created by eroded mortar at the southern gable end (see Photo 26)

3.2.4. Nesting Bird Survey

No signs of recent nests were found within or on the exterior of the cottage or garage.

3.2.5. Dusk Emergence Surveys

The results of the dusk emergence surveys are summarised below.

Table 7: Summary of Conditions During Dusk Emergence Surveys

	Survey 1	Survey 2
Date	20/08/2024	16/09/2024
Sunset Time	20:19	19:20
Start Time	20:04	19:05
Finish Time	21:49	20:50
Start Temperature (°C)	14	12
Sunset Temperature (°C)	14	12
Rain	0	0
Wind (Beaufort scale)	2	2
Cloud Cover (Oktas)	0	2

Table 8: Summary of Dusk Emergence Surveys Results

	Survey 1: Dusk Emergence (20/08/24)	Survey 2: Dusk Emergence (16/09/2024)
Emergences	No bats emerged from or interacted closely with the buildings during this survey.	No bats emerged from or interacted closely with the buildings during this survey.
Important/Commuting /Foraging Routes	Common pipistrelles and unidentified myotis species were found foraging and commuting from north to south towards surrounding trees throughout the survey.	Noctules (<i>Nyctalus noctule</i>) a Leisler's bat (<i>Nyctalus leisleri</i>) were found commuting and foraging north to south towards surrounding trees.
Bat Activity ¹⁸	There were moderate levels of common pipistrelle activity recorded during the survey. There were low levels of soprano pipistrelle and greater horseshoe bat activity recorded during the survey.	There were moderate levels of noctule and common pipistrelle activity recorded during the survey. There were low levels of Leisler's bat and lesser horseshoe activity recorded during the survey.

¹⁸ Activity thresholds have been quantified using personal judgement according to past experience of surveying similar sites.

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	There were also recordings of unidentified myotis species recorded throughout the survey.	
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4. Evaluation

4.1. Summary of Survey Results

The preliminary roost assessment and dusk emergence surveys found no evidence of bats roosting within or on the external parts of the cottage or garage.

4.2. Suitability of Summer Roosts

During the preliminary roost assessment, the cottage was assessed as having moderate suitability for use by bats and the garage was assessed as having low suitability for use by bats. Full justification of the assessment can be found in Appendix 2.

4.3. Potential Winter Roosts

'Classic' Hibernation Potential

The site does not contain any classic hibernation sites such as underground features such as cellars or basements.

'Non-classic' Hibernation Potential

The site does not contain any non-classic hibernation sites such as deep, thermally stable crevices that could support large numbers of bats. There is some potential for bats to hibernate under gaps in the roof tiles. However, the presence of such use is unlikely¹⁹ given the likely absence of bats recorded during the summer emergence surveys.

4.4. Important Bat Commuting Routes and Foraging Areas

The trees to the south of the cottage serve as an important commuting and foraging route. Unidentified *Myotis* species, noctules and Leisler's bats were observed throughout the survey commuting from the Cemetery on the north side of Vicarage Lane to the trees on the south of the cottage.

4.5. Birds – Interpretation of Nesting Bird Survey

No evidence of past or current nesting by birds was observed during the preliminary roost assessment and dusk emergence surveys.

¹⁹ There is limited research on where pipistrelle bats hibernate, but current evidence suggests that they may hibernate adjacent to their breeding roosts in secure locations such as wall cavities that have relatively stable temperatures. Other individuals disperse to roost in small numbers in more exposed locations such as around window frames. In exposed locations pipistrelle bats typically hibernate as one or two individuals. Often there are often no obvious external signs of their presence (JNCC, 2004). Because of the highly exposed location of hibernation sites used by some individuals, it is therefore very difficult to completely rule out hibernation use by this species in almost any building that has some very shallow crevices, openings or gaps.

5. Impact Assessment

5.1. Potential Impacts to Bats

Based on the conclusion that bats are unlikely to be using the cottage or garage as a roost site, no negative direct impacts on bats are anticipated.

5.1.1. Loss of Foraging/Commuting on Bats

No natural features i.e. trees or hedgerow are proposed to be cleared and therefore no loss of foraging or feeding ground will occur. The trees at the south of the cottage provide an important an important foraging and commuting feature. Any artificial lighting within the new development has some potential to spill into this habitat. A sensitive lighting strategy is set out in Section 6 to ensure bats can continue to forage and commute undisturbed over the trees.

5.2. Potential Impacts to Nesting Birds

Based on the conclusion that birds are unlikely to be using the cottage and garage for nesting, no negative impacts on birds are anticipated.

6. Required Actions

6.1. Licencing Requirements for Bats

A bat development licence is not required as the survey indicates a likely absence of roosting bats in the buildings.

6.2. Avoidance, Mitigation, Compensation and Enhancement Measures for Bats

The following measures have been recommended in the absence of detailed development proposals. The recommendations in Section 6 should therefore be reviewed and updated once detailed development proposals are available.

6.2.1. Sensitive Lighting Strategy

It is currently unknown whether additional external lighting is to be provided post-development. Nevertheless, external lighting will be absent from the western side of the site, thus maintaining a 'dark corridor' to ensure that bats can continue to commute and forage undisturbed over the trees to the south of the cottage (see Plan 6). The exact models of lighting are yet to be finalised²⁰. However, the lighting design for the site will be of a 'bat-friendly' specification, complying with the Institute for Lighting Professionals and Bat Conservation Trust's guidance (2023) and kept to the minimum level which meets the needs of security and health and safety. The unnecessary lighting of habitats which could potentially be used by foraging bats such as nearby trees, hedgerows etc. will be avoided.

Any security lights used will operate on a passive infrared (PIR) motion sensor sensitive to large objects only, to avoid constant triggers by bat passes and with timers set on a short duration (i.e. a maximum 'on' time of one minute) to reduce the amount of 'lit time'. The lights will either have an integrated LED light source, or use LED bulbs. They will be low intensity (i.e. circa 11 watts) and have a warm white colour temperature of 3000K or less (ideally 2700K if commercially available). White, blue and green² lighting sources including mercury or metal halide, CPO and CDO (ceramic discharge metal-halide) bulbs which have a significant effect on bats will be avoided. Examples of suitable light fittings are provided within Appendix 3.

Internal Lighting

Ideally, internal lights installed in proximity to windows will be recessed (as opposed to pendant fittings) to reduce glare and light spill. Lights should be installed above the window head height where possible and luminaires should be set back further into the room.

²⁰ It is likely that if planning consent is granted a condition will be applied requiring the submission of a lighting strategy which will include: a) lighting type, positioning and specification; b) measures to minimise light spill from glazed areas; and c) drawings setting out light spillage in key areas for bats based on technical specifications.

6.3. Precautionary Measures for Bats and Birds

No evidence of any use by roosting bats was recorded on site and it is therefore highly unlikely that bats or their roosts will be affected by the works. No precautionary timing conditions on works are required regarding bats. However, it is not possible to rule out bat use entirely, and there is also a risk of an offence being committed if active birds' nests are present. The following recommendations are made to minimise risks to bats and birds:

- It will be clearly understood, and contractors made aware that in the event of any bats being found, the contractor must halt works. Appropriate advice will be obtained from a suitably qualified bat consultant or NE and, if necessary, a bat development licence obtained before work can resume;
- Contractors will check for the possible presence of bats on the undersides of roofing sheets and fascias as they are lifted off. This is especially important at the outset of the works, since once the works have started, the disturbance is likely to drive any bats which are present away voluntarily; and
- The services of an appropriately qualified and licensed ecological consultant will be available on an 'on-call' basis at all stages of the works to deal with any unexpected encounters with bats or nesting birds. Contact details of such will be held on site. Acer Ecology Ltd. could be retained to provide this support.

6.4. Ecological Enhancement for Bats

The National Planning Framework (2023) stipulates that development projects minimise ecological damage and contain elements of ecological enhancement²¹.

Ecological enhancements measures could be provided within the proposal and could include the retention of any unused areas of roof void for use by roosting bats with suitable access points. Alternatively, fascias, soffits and gutter-plates etc. could be left with small gaps beneath to allow access by crevice-dwelling bats behind them²², and/or purpose-built bat roosting boxes could be installed, either on the exterior of the building or incorporated directly into the structure of the walls (Appendix 6).

6.5. Avoidance, Mitigation, Compensation and Enhancement Measures for Birds

Bird nesting opportunities on and adjacent to the site could be enhanced by the installation of one standard hole nest boxes and one open-fronted nest box (see Appendix 7) on the house.

6.6. Longevity of Report

²¹ https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf

²² This approach will only be acceptable if breathable membrane will not be installed within the building or the fascia, soffits etc. or the fascias, soffits etc. will be installed in a way where there is no potential for bats to gain access to the breathable membrane.

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If development works do not begin within twelve to eighteen months of the date of this report, an updated survey may be required to determine if conditions and bat usage has changed since described in the current report.

7. References

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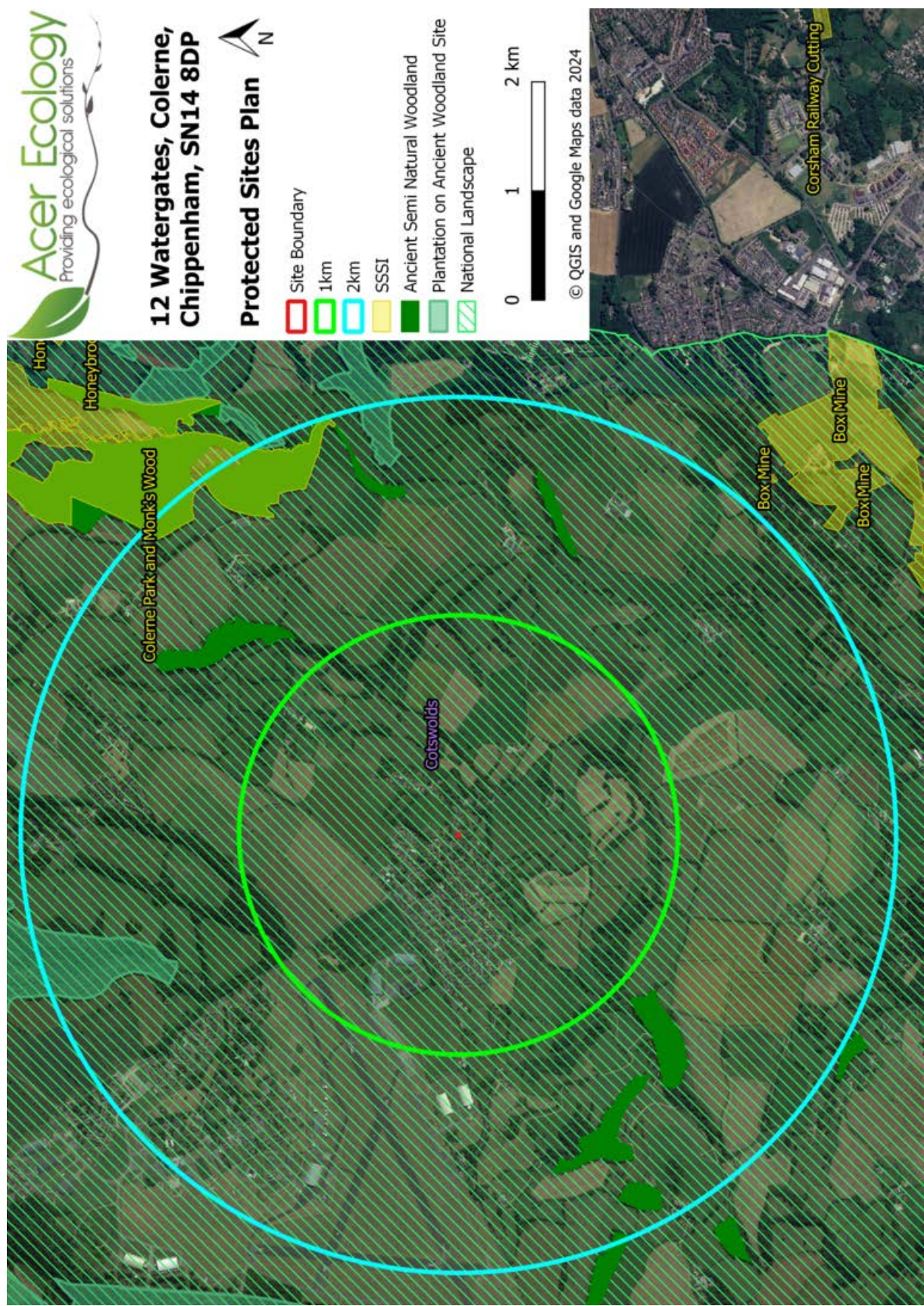
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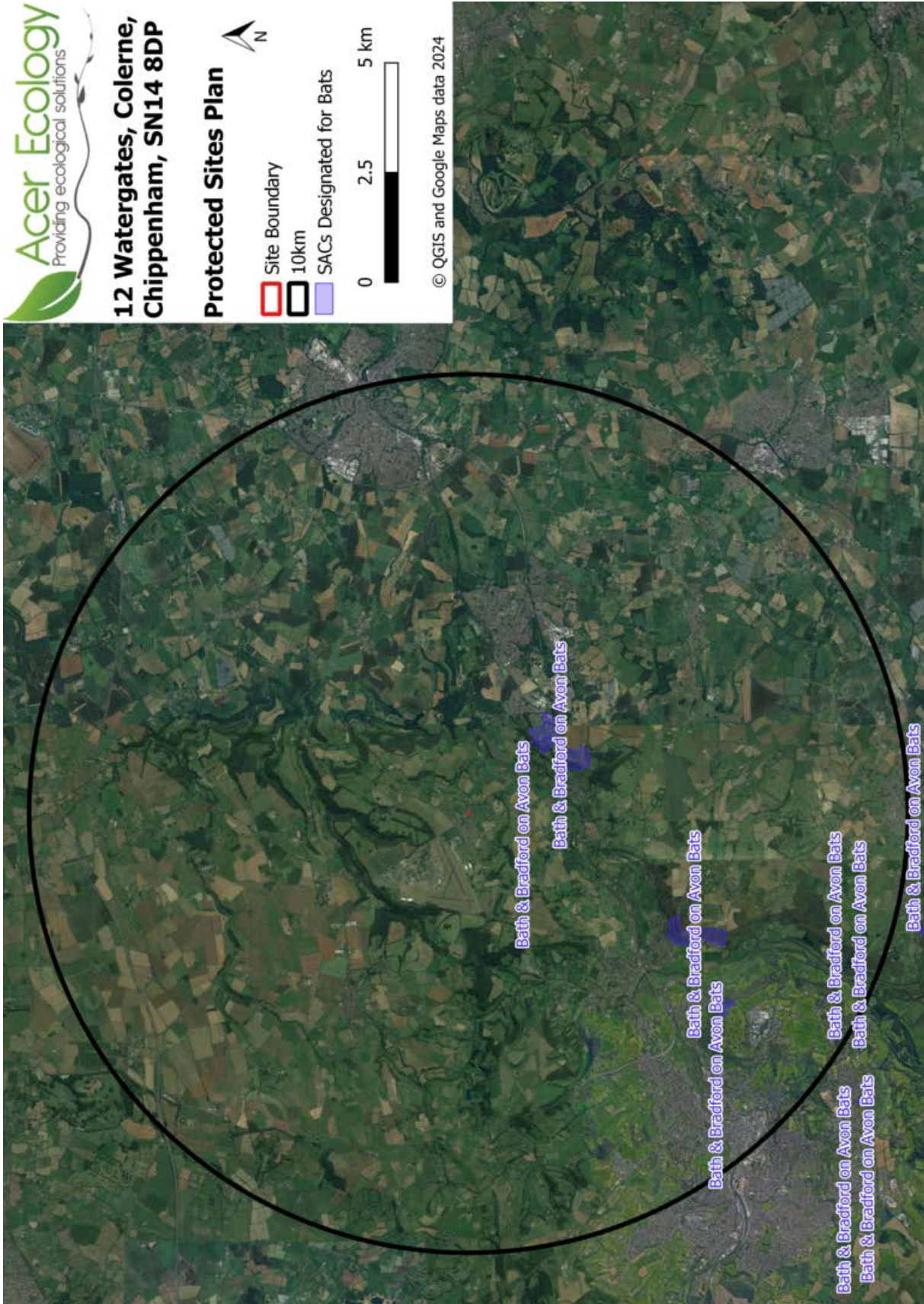
Plan 1: Location Plan



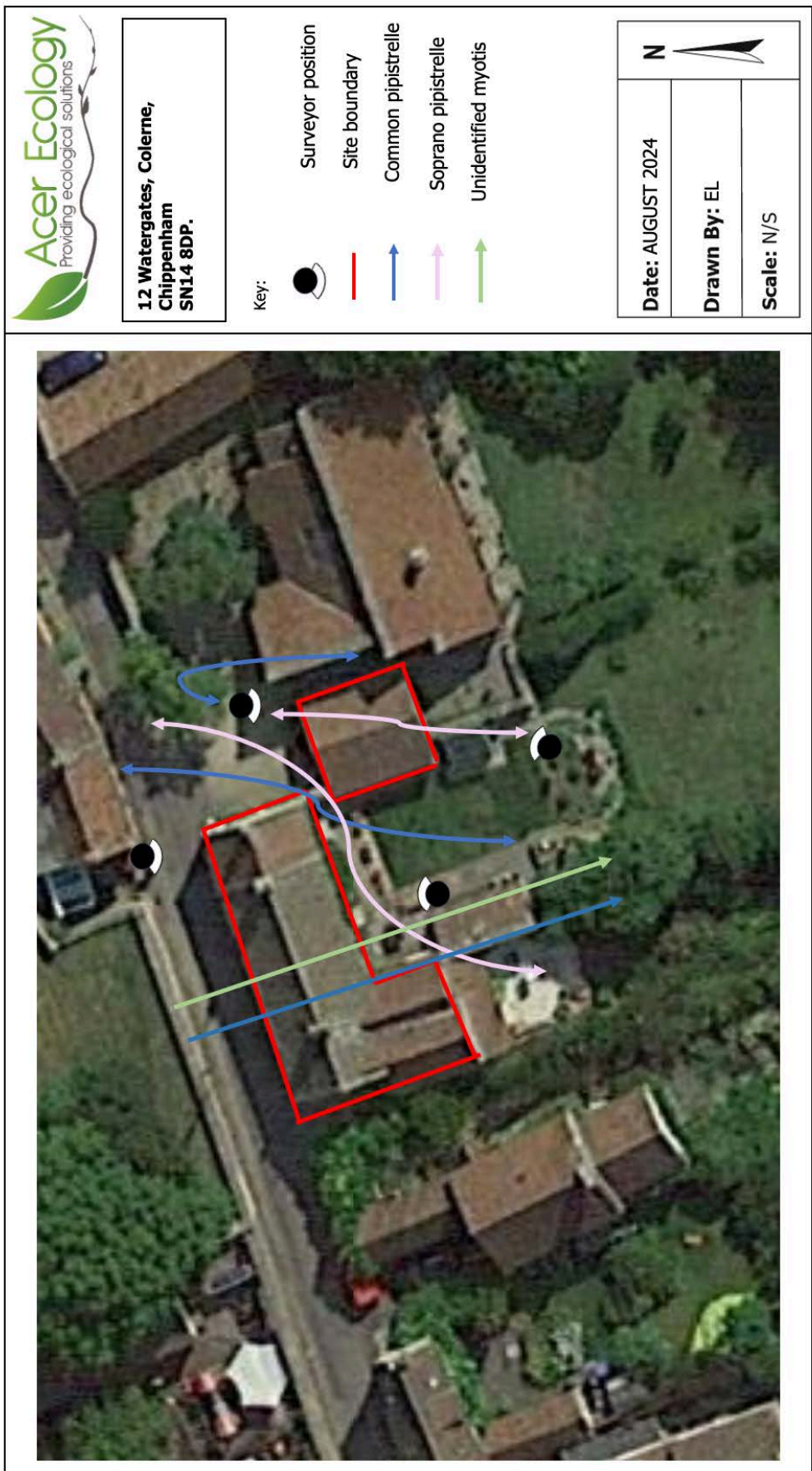
Plan 2: Protected Sites Within 2km



Plan 3: Protected Sites Within 10km



Plan 4: Dusk Emergence Survey Results (20/08/2024)



Plan 5: Dusk Emergence Survey Results (16/09/2024)



Plan 6: Lighting Plan



Appendix 1: Bat Ecology and Legislation Protecting Bats and Their Roosts

Bat Ecology

There are 17 known breeding species of bat found in the UK, with additional species recorded as migrants or vagrants. They are all small, nocturnal, flying, insectivorous mammals that are under conservation threat with many having undergone massive population declines over the last century. Some species, such as common pipistrelle and soprano pipistrelle (*Pipistrellus pygmaeus*) are relatively common and widespread in the UK, while others, such as greater horseshoe (*Rhinolophus ferrumequinum*) bats, have an extremely restricted distribution.

Most bats will use a variety of roosts of different types throughout the year. The winter hibernation sites typically have cool, humid conditions with a stable microclimate and low levels of disturbance. Most British bats hibernate in caves or artificial structures that fulfil such requirements, such as mines, tunnels and cellars. Bats emerge from hibernation around late March or early April and move into transition or intermediary roosts. Around early May, female bats gather in colonies to form summer or maternity roosts, and it is here where they will give birth between late May and early July. A colony may consist of many individuals (sometimes hundreds of bats) of mixed age and sex. Roosts occur in a variety of habitat types, including tree-holes, caves, buildings and other secure crevices or internal spaces with appropriate stable temperatures and humidity. Bats may change roost locations many times during a year, and colonies may split up and reform during this period. Males occupy solitary roosts in autumn, to which they attract females for mating.

Legislation

All British bat species and any place used for shelter or protection, or as a breeding site or resting place (their roosts) are fully protected under the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019. The roosts are protected irrespective of whether bats are present at the time. The aforementioned legislation make it illegal to deliberately or recklessly:

- kill, injure or capture bats;
- disturb bats;
- damage, destroy, or obstruct access to bat roosts (including sites that are currently unoccupied);
- possess or transport a bat or any part of a bat unless acquired legally; or
- sell, barter or exchange bats or parts of bats.

Disturbance is defined as any activity that is likely to impair bats ability:

- to survive, to breed or reproduce, or to rear or nurture their young;
- to hibernate or migrate; or
- to affect significantly the local distribution or abundance of the species to which they belong.

Habitats Regulations Licensing

If a European Protected Species will be affected by a development, Natural England (NE) can issue licences under the Habitats Regulations to permit otherwise prohibited acts. Licences for certain activities can be granted providing “three tests” are satisfied, that is:

1. the purposes of “preserving public health or safety, or for reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment”;
2. there must be “no satisfactory alternative”; and,
3. the action is “not detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”.

Where planning regulations apply, NE will only issue a licence after planning consent has been granted.

The licence application will require the production of a detailed method statement, which sets out the activities to be carried out under the licence to minimise the risk of bats being harmed during construction works and ensure that bats will be conserved during the development of the site. This will need to detail the mitigation proposed (such as the replacement or compensation roost); the timescale and schedule of works; the number, size and locations of bat access points to be provided; the type of materials to be used (roofing material, roof lining, fascias, soffits and bargeboards etc.); lighting proposals; action to be taken in the event bats are found during works; and a post-development monitoring programme. The method statement will need to be accompanied by scaled plans and maps detailing the bat mitigation features. A cross-section of the access points and roost space is often required. The method statement must ensure that provision is made for new or continued roosting opportunities after the completion of development works. In some instances, a method statement is requested by the Local Planning Authority before the planning application is determined.

Natural Environment and Rural Communities (NERC) Act 2006 Under Section 40 of the Natural Environment and Rural Communities Act (2006), Local Authorities have a duty to have regard to the conservation of biodiversity in exercising their functions. The duty affects all public authorities and aims to raise the profile and visibility of biodiversity, to clarify existing commitments regarding biodiversity, and to make it a natural and integral part of policy and decision making. Seven of the UK species of bat (soprano pipistrelle, barbastelle (*Barbastella barbastellus*), Bechstein’s, noctule (*Nyctalus noctule*), brown long-eared, lesser horseshoe and greater horseshoe bats have been listed on the UK Biodiversity Action Plans (2007) as conservation priorities.

National Planning Policy Framework (2021) and Biodiversity and Geological Conservation Circular 06/2005

The National Planning Policy Framework (2021) and Biodiversity and Geological Conservation–Statutory Obligations and Their Impact within the Planning System Circular (06/2005) state that the presence (or otherwise) of a protected species is a material planning consideration and the extent that they may be affected by the proposed development must be established before planning permission is granted. Otherwise, all relevant considerations may not have been addressed in making the decision.

Appendix 2: Guidelines for Assessing Potential Bat Roosting Suitability²³

Protentional Suitability	Roosting Habitats in Structures
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 ²⁴	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 (Garage)	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ²⁵ 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 ²⁶).
Moderate (Cottage)	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (see footnote from low suitability) and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described 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 (see footnote from low suitability) and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.
Confirmed Roost	Evidence of bats or use of bats found.

²³ Taken from Table 4.1 of the Bat Survey Guidelines (2023) 4th edition.

²⁴ Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

²⁵ For example, in terms of temperature, humidity, height above ground levels, light levels or levels of disturbance.

²⁶ Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2016 and Jansen *et al.*, 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

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Appendix 3: Guidelines for Assessing Bat Habitat Suitability²⁷

Suitability	Commuting and Foraging Habitat
Negligible	Negligible habitat features on-site likely to be used by commuting and foraging bats.
Low	<u>Commuting Habitat</u> Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape. <u>Foraging Habitat</u> 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	<u>Commuting Habitat</u> 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. <u>Foraging Habitat</u> Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	<u>Commuting Habitat</u> 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. <u>Foraging Habitat</u> 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. <u>Proximity to Known Bat Roosts</u> The site is close to and connected to known roosts.

²⁷ Taken from Table 4.1 of the Bat Survey Guidelines (2023) 4th edition.

Appendix 4: Guidelines for Determining Required Number of Dusk Surveys

Roost Suitability	Minimum Number of Dusk Surveys Required ²⁸
Negligible	None.
None.	None.
Low (Garage)	One survey visit comprising of a dusk emergence survey ²⁹ between May and August for structures.
Moderate (Cottage)	Two separate dusk emergence survey visits ³⁰ . Surveys must occur between May and September ³¹ , with at least one survey between May and August ³² .
High	Three separate dusk emergence survey visits. Surveys must occur between May to September, with at least two surveys between May and August.

²⁸ Adapted from Tables 7.1 and 7.2 of the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023).

²⁹ Structures that have been categorised as low potential can be problematic, and the number of surveys required should be judged on a case-by-case basis (see para 5.2.44). In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

³⁰ Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least three weeks apart, preferably more.

³¹ September surveys are both weather- and location-dependant. Conditions may become more unsuitable in these months, particularly in more northerly latitudes, which may reduce the length of the survey season. September surveys are likely to miss maternity roosts due to dispersal before this time but may still pick up mating roosts.

³² Multiple survey visits should be spread out to sample as much of the recommended survey period as possible; it is recommended that surveys are spaced at least three weeks apart, preferably more. Survey timings should consider the prevailing conditions in the year of survey, which will vary geographically. In years with a cold spring, the surveys should not be started in early May or all be completed in May. The surveys should maximise the possibility of detecting maternity roosts, which can switch roosts between pregnancy and lactation, and the optimum coverage includes the pre-parturition, post-parturition, and mating periods.

Appendix 5: Surveyor Experience

20th August 2024

Jasmine Blakeley - Jasmine graduated with an undergrad degree in Geography from Swansea University and a postgraduate degree in GIS and climate change. She is currently working for and receiving training from Acer Ecology and is in her first season of bat surveying. Full details of Jasmine's qualifications and experience can be found at: <https://uk.linkedin.com/in/jasmine-blakeley-57b6841a0>

Rachel Haynes - Rachel is currently undertaking an MRes in Behavioural Ecology and Evolution at Swansea University and has a BSc in Zoology from University of Exeter. She has recently started volunteering with Acer Ecology, having completed two seasons of bat surveying, including volunteering with Vincent Wildlife Trust's horseshoe bat monitoring.

Maddy Morgan – Maddy recently graduated from the University of the West of England, with a first class degree in Wildlife Ecology and Conservation Science. She is currently working as an ecological subcontractor, conducting bat emergence and activity surveys in south-west England. She has been conducting surveys both independently and under supervision over the last two years.

Utkarsh Saksena – Utkarsh has an MSc in Global Wildlife Health and Conservation from Bristol University and a BSc in Zoology from India. This is his first season bat surveying with Acer Ecology and he is undergoing training.

16th September 2024

Sonia – Sonia has a Bachelor of Science (Honours) degree in Natural Sciences, with specialisation in Environmental Science. She has written multiple scientific reports on vulnerable/endangered species, whilst studying at university. She is in her first surveying season and has a certificate in Bat Ecology and Surveying.

Lorretta Lemon - Loretta has a Bachelor of Science (Honours) in Psychology, she researched the impacts of nature and environment on people's mental and physical wellbeing. She is in her first bat season and regularly volunteers with various ecological organisations.

Appendix 6: Schwegler 2F Bat Box

Schwegler 2F General Bat Box



The Schwegler 2F General Bat Box is the standard and most popular bat box. Ideal for summer roosts and is constructed of woodcrete, providing a breathable, stable temperature within and is suitable for long-term mitigation projects.

Position: Ideal for trees, should be mounted on tree trunks at a height of 3m – 6m. Can be positioned in clusters of three, with each box facing west through a south-eastern aspect to provide a variety of micro habitats.

Height: 33cm.

Diameter: 16cm.

Weight: 4kg.

Selection of Trees

Selected trees should ideally be a minimum of 500mm diameter at the height of fixing. Trees should not be obviously unstable or badly rotted. The timber and bark at the point of fixing should be sound.

Position of Boxes on Trees

Boxes should be mounted on tree trunks, rather than on boughs or branches. The mounting location should not be heavily shaded. Boxes should be mounted vertically on the tree.

Bat boxes should be mounted a minimum of 3m from the ground, and ideally placed in clusters of three.

The entrance to the box should be clear of obstructions and obstacles in the flight-path towards it. An 'open airspace' of about 3m square should be preserved in front of and below the entrance, and elsewhere any overhanging branches should be at least 1m away.

The mounting location should be readily and safely accessible by ladder, but not accessible by someone climbing up the trunk or onto an adjacent tree or wall etc.

Some lower branches may need to be trimmed below the box to remove ready handholds or footholds for would-be tree-climbers (as well as any small branches crowding the entrance).

As far as possible, boxes should be placed in locations which are not conspicuous from the ground, so as not to attract unwanted attention from passers-by. This objective is assisted by selecting locations which are not visible/accessible from public footpaths, byways etc.

Double Roost Panel

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An internal double front panel creates roosting opportunities for crevice-inhabiting bats such as common and soprano pipistrelles.



Bat Box Availability

The 2F bat box is available from a number of suppliers including Jacobi Jayne (www.jacobijayne.com), NHBS (www.nhbs.com) where it retails at approximately £35.95+VAT.

Appendix 7: Examples of Closed and Open Fronted Nest Boxes



This nest box is for installation on external walls of buildings (including sheds and garages) and is suitable for a range of bird species. With a 32mm hole it allows entry to species such as coal tit, blue tit, great tit, redstart, nuthatch, house sparrow, tree sparrow and other species.

The recommended height is between 1.5m and 5m above ground with a south-east to south-west orientation.

Cleaning after the breeding season (wait until October) is advised to provide a clean nest for the following year, or utilisation by non-migratory birds for winter roosting.



These should never be hung on trees or bushes as this could allow small predators to access the interior and predate nesting birds.

This nest box should always be installed on the external walls of houses, barns, garden sheds etc. It is designed to be hung so that the entrance is to one side (90° angle to wall).

Correctly positioned it can attract species such as black redstart, pied wagtail, grey spotted flycatcher, and occasionally robins and wrens.