Bat Emergence and Re-entry Surveys

Wick Bottom Barn, Temple Farm Estate, Marlborough, SN8 1RU

Temple Farming Partnership

Status	Issue	Name	Date
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Industry Guidelines and Standards

This report has been written with due consideration to:

- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.

Proportionality

> The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.
>
> The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.
>
> (BS 42020, 2013)

Executive Summary

Arbtech Consulting Ltd was instructed by Temple Farming Partnership to undertake Bat Emergence and Re-entry Surveys (BERS) at Wick Bottom Barn, Temple Farm Estate, Marlborough, SN8 1RU (hereafter referred to as "the site"). The survey was required to inform a planning application for major repairs and alterations to the existing wedding venue barn, with associated landscaping and vehicle parking/access. (hereafter referred to as "the proposed development").

The following is work you will need to commission to comply with planning policy and legislation. Further information, along with opportunities for biodiversity enhancement, are outlined in Table 5 of this report.

Building	Survey Results Summary	Impact Assessment	Recommendations	Biodiversity Enhancement Opportunities[1]
B1	Roost 1: Species: common pipistrelle Peak count: 34. Due to the late season surveys this is likely to be an under-estimate of numbers, as the roost will have started to split off by the time the surveys began. Roost type: maternity Roost location: south chimney Access points: gaps in flashing where roof meets chimney structure, and multiple access points through rooftiles	Building B1 is proposed to be majorly repaired and altered, including a full roof strip, installation of insulation, an extension, then internal renovations. These works will destroy the bat roosts present. The proposed development may include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	An EPSL application to Natural England will be required to legally permit the proposed works. The EPSL application requires that surveys have been undertaken within the most recent active bat season (optimal May to August, suboptimal September). Planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission, where possible to do so. The survey effort should include at least one survey between May and June when the detection rate of bat roosts is highest. A Material Changes Check will be required within three months of the EPSL submission, if no survey work has been undertaken within that period. If bat droppings were found during the PRA, a sample will need to be sent off for DNA analysis to confirm the bat species present, to inform the EPSL application. Biological records data will also need to be obtained to inform the application. The EPSL will detail any mitigation and compensation measures that will be required for the proposed development to comply with the standing advice and will be designed to reduce any impacts to an acceptably low level so as to maintain (or enhance) the Favourable Conservation Status (FCS) of the local bat population. The EPSL will include the following measures: • Timing of works to avoid the maternity season (May to September)	The installation of 3 bat boxes at the site will provide additional roosting habitat for bats. The bat boxes will be installed on trees around the site or the repaired building. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light. The bat boxes will be a specification suitable for pipistrelle maternity roosts such as the Nestbox Roost Maternity Bat Box or a

[1] The Local Planning Authority has a duty to ask for enhancements under the NPPF (2021).

	on the north and east elevations. This roost is considered to have moderate conservation value, in line with the Bat Mitigation Guidelines (Natural England, 2023). Roost 2: Species: Daubenton's myotis Peak count: 1 Roost type: day Roost location: south chimney Access points: flashing where the lower roof meets chimney. This roost is considered to have low conservation value, in line with the Bat Mitigation Guidelines (Natural England, 2023). Roost 3: Species: serotine Peak count: 1 Roost type: day Roost location: south chimney		• The installation of 3 bat boxes at the site (one bat box per bat species) prior to works commencing to form a receptor site for any bats found during the works. These boxes may be installed on buildings or trees or can be pole mounted but must be in an undisturbed location and will need to be maintained in this location post-development. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light. • The provision of a toolbox talk to contractors, by the Named Ecologist or an Accredited Agent, to inform them of the presence of bat roosts. • A pre-commencement inspection of any roost features by the Named Ecologist or an Accredited Agent using a torch and an endoscope (this may be via ladders, scaffolding or a mobile elevated platform). • The removal of bat roost features by hand under the supervision of the Named Ecologist or an Accredited Agent (where it is not possible conclude absence of bats during the pre-commencement inspection). • Avoiding the use of unnecessary lighting, particularly at night, or implementing a low impact lighting strategy to avoid illumination of retained or newly created roosts or roost features. • Avoiding excessive noise or vibration disturbance e.g. from power tools or radios, within close proximity of retained or newly created roosts or roost features. • Like for like roost replacement features will be required for any roosts that are destroyed. These will need to be confirmed once full details and specifications of the work have been provided. • Post development monitoring will be required on completion of the development to ensure all measures are in place, and then in years 2 and 4 post development to monitor the success of the roost compensation. The EPSL will only include the bat species, numbers and roost types listed above. If bats are found during periods of adverse weather conditions, these must be left undisturbed until weather conditions become more favourable to move bats to the receptor bat box.	similar alternative brand.

	Access points: flashing where the roof meets chimney.		EPSLs do not allow for the disturbance of hibernating bats. Therefore, if any bats are found during the hibernation period November to March or if any unexpected bat species or roost types are identified works must cease and advice must be sought from the Named Ecologist regarding the possible requirement for timing restrictions for works, the completion of further bat surveys or a modification to the EPSL. A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures: • Light spill on to B1 and the trees south and west of B1 should be avoided. • Use narrow spectrum light sources to lower the range of species affected by lighting. • Use light sources that emit minimal ultra-violet light. • Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. • Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. • External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. • Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.	
Nesting birds	During the PRA a jackdaw nest was found on the southwest elevation. This nest	As an old nest was found on B1, the building is clearly suitable for nesting birds. The proposed development could result in the	A precautionary working method will prevent harm to nesting birds. Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building should be undertaken immediately, by qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged.	The installation of one bird box at the site will provide additional nesting habitat for birds.

	was inactive during the BERS.	destruction or the disturbance and subsequent abandonment of active bird nests.		The bird box will be installed on new structures. General purpose bird boxes should be positioned 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Ltd was instructed by Temple Farming Partnership to undertake Bat Emergence and Re-entry Surveys (BERS) at Wick Bottom Barn, Temple Farm Estate, Marlborough, SN8 1RU (hereafter referred to as "the site"). The survey was required to inform a planning application for major repairs and alterations to the existing wedding venue barn, with associated landscaping and vehicle parking/access. (hereafter referred to as "the proposed development"). A plan showing the proposed development is provided in Appendix 1.

The aim of the BERS was to determine the presence or likely absence of roosting bats and to characterise any roosts present. This has been undertaken with due consideration to the "Bat Surveys for Professional Ecologists —Good Practice Guidelines" publication (Collins, 2016) and Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment (Bat Conservation Trust, 2022).

The BERS have been informed by a Preliminary Roost Assessment which was completed by Seasons Ecology on 18th April 2023 (Seasons Ecology Ltd, 2023). The results of the PRA are summarised in the table below.

Table 1. The results of the PRA

Feature	Survey Results Summary	Impact Assessment	Recommendations
Roosting bats	The barn is assessed as High suitability to roosting bats. It is of suitable construction for roosting bats with a mixture of timber-cladding and stone walls, and slate roof tiles present. There are a number of access points into the internal area of the barn provided by the gaps beneath and above doors, holes within the timber-cladding, raised timber-cladding panels and the open chimney flute. Access points were also identified into the enclosed roof space (inaccessible at the time of survey) provided by gaps in the stonework at the roofline, and the metal grate within the floating door. There are also a moderate number of roosting features across all areas of the barn including raised and misplaced roof tiles and both internal and external gaps within the stonework and gaps beneath lead flashing.	The proposed alterations to the building will destroy an active bat roost if present and could cause death or injury to bats.	Three bat emergence and re-entry surveys are required during the active bat season (optimal May to August, suboptimal September) to confirm presence or likely absence of a bat roost in the building. At least two of the surveys should be completed during the optimal survey period mid-May to August inclusive.

Foraging and commuting bats	The interior of the site offers a small area of low-quality foraging habitat for bats, being dominated by modified grassland, with an area of ruderal vegetation. The lines of mature trees and woodland block on site provides high-quality commuting and foraging habitat for bats, as they are connected to the wider network of linear features such as hedgerows and further tree lines.	The proposed development will not result in the removal of any habitats which could be used by foraging or commuting bats. Care should be taken to ensure no significant changes to lighting or other aspects of the proposed works impact upon the trees on site.	The site lies in a rural location; therefore, a sensitive lighting scheme should be implemented. Lighting should not spill onto surrounding habitats and should avoid illuminating the mature tree lines and woodland block on site.
Nesting birds	The barn is a confirmed nesting bird location, with an active jackdaw nest observed within the timber-clad extension attached to the south-west elevation of the barn at the time of survey. The other areas within the barn, notably the open-fronted north-east compartment, offer high suitability to nesting birds with numerous access points and wooden beams present providing optimal nest-building habitat.	The alterations to the building and landscaping could result in the destruction or the disturbance and subsequent abandonment of active bird nests.	Works to the barn should commence outside of the nesting bird season (March 1st to August 31st). Vegetation clearance of shrubs and trees, where required, should occur outside of the nesting bird season. If the nesting bird season cannot be avoided, then a pre-works nesting bird check should be carried out of the barn and any vegetation to be cleared by an experienced Ecological Clerk of Works.

1.2 Site Location and Landscape Context

The site is located at National Grid Reference SU 14701 73189 and has an area of approximately 1.2ha, which comprises the barn (hereafter referred to as "B1"), modified grassland, ruderal vegetation, broadleaved woodland, lines of mature trees, scattered rubble and log piles, and developed surfaces. The site is surrounded by other farm buildings of the estate, grasslands and lines of mature trees. The lines of mature trees and woodland block on site provides high-quality commuting and foraging habitat for bats, as they are connected to the adjacent network of linear features such as hedgerows and further tree lines. The wider landscape contains large arable and pasture fields with scattered, small patches of linear features. Overall, the site is assessed to have high suitability for commuting and foraging bat populations. A site location plan is provided in Appendix 2.

1.3 Scope of the Report

This report provides a description of the bat activity observed and recorded during BERS. The aim of the surveys was to determine the presence or likely absence of bats and to characterise any roosts present including species, number of individuals, number, and location of roost access points, and to gain an understanding of how bats use

the site. The report provides information on possible constraints to the proposed development as a result of bats and summarises the requirements for any mitigation proposals, including a European Protected Species Licence (EPSL), where appropriate, to achieve planning or other statutory consent and to comply with wildlife legislation. To achieve this, the following steps have been taken:

- BERS of built structures has been undertaken to determine the presence or likely absence of bat roosts.
- An outline of potential impacts on any confirmed or unidentified roosts has been provided, based on the proposed development.
- Recommendations for mitigation have been made, along with advice on the requirements for a European Protected Species Licence (EPSL) application if appropriate.
- Opportunities for the enhancement of the site for roosting, foraging and commuting bats have been set out.

2.0 Methodology

2.1 BERS

Three BERS, comprising three dusk emergence surveys, were undertaken of the B1, as per the recommendations from the Preliminary Roost Assessment. The surveys involved surveyors positioned around the building ensuring that all elevations and roof sections with suitable roosting features could be clearly observed. Particular attention was paid to the areas of the building identified as providing suitable access points to bat roosts. Each surveyor was assigned an area of the building/tree/structure to observe for the duration of the survey.

Surveyors used heterodyne and frequency division bat detectors, and Echo Meter Touch detectors connected to iPads or Android tablets. Bat echolocation calls recorded during the surveys were analysed using Wildlife Acoustics sound analysis software Kaleidoscope V3.1.7 when required. The Echo Meter Touch includes an auto ID function for bat species, however this is not 100% accurate and further post-survey sound analysis is often required to confirm species that could not be identified by the auto ID software during the survey. Surveyors also used head torches, survey record sheets and pens/pencils for recording all activity observed during the surveys. Each surveyor was also provided with a handheld radio for communication between surveyors to assist with confirming ambiguous bat activity e.g. a bat emergence or a bat passing over the building.

Two infrared recording kits were set up to monitor the building during the first BERS, three on the second, and four on the final BERS. This comprised Nightfox Red Goggles set up on a tripod with two separate infrared lamps on a second tripod to provide additional illumination. Analysis of the footage was subsequently undertaken to detect roosting activity.

Dusk emergence surveys commenced 15 minutes before sunset and continued for 1½ - 2 hours after sunset – depending upon bat activity and surveyor visibility.

Surveys were completed during optimal weather conditions i.e., when temperatures were above 10ºC, with no rain or strong winds (greater than 5m/s), as these adverse weather conditions can impact upon bat emergence and foraging behaviour. Periods of high moon illuminance (>80%) were also avoided insofar as possible as this can reduce bat activity.

2.2 Surveyors

The surveys were overseen by Nicole Gullan, Consultant, Natural England Bat Licence Number 2022-10752_CL17_BAT. A total of 4 surveyors were used during each survey to cover B1. The name, bat licence details or level of bat survey experience and the designated position of each surveyor during each survey is detailed in the tables in Section 3.1 below and shown on the plan in Appendix 3.

2.3 Internal Inspection

An internal inspection of the building was also made, including the living areas and any accessible roof spaces, using a torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space. This was carried out by Nicole Gullan on 23rd August 2023.

2.4 Bat Roost Characterisation

When bat roosts are present, the bat surveys undertaken at a site facilitate the characterisation of the roost type. This allows for appropriate mitigation and compensation to be designed to inform a European Protected Species Licence (EPSL) application to Natural England.

The definitions of bat roost types are provided below, taken from the *Bat Mitigation Guidelines* (English Nature, 2004) and the Bat Conservation Trust (BCT) publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, 2016).

Day roost: a place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.

Night roost: a place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.

Feeding roost: a place where individual bats or a few individuals rest or feed during the night but are rarely present by day.

Transitional / occasional roost: used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.

Swarming site: where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites

Mating sites: sites where mating takes place from later summer and can continue through winter.

Maternity roost: where female bats give birth and raise their young to independence.

Hibernation roost: where bats may be found individually or together during winter. They have a constant cool temperature and high humidity. Sites where hibernating bats have been confirmed by appropriate survey effort should be classed as 'hibernation confirmed'.

Satellite roost: an alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

Other: roost types are interchangeable and not always easy to classify according to the nuances of certain species.

2.5 Limitations

These surveys follow best practice guidance to confirm presence or likely absence of roosting bats and where present, characterise the roost. However, this information is collected at finite dates and times, and provides an indication of the conditions on site only. The use of the building, and the site as a whole by bats, at all times cannot be established based on this information. Bats are highly mobile creatures that switch roosts regularly and therefore the usage of a site by bats can change over a short period of time.

- Trees on the north corner restricted view, so surveyors could not be positioned on this corner. However, surveyor positions were carefully chosen and angled so that all elevations were covered.
- The roof space above the southwest compartment could not be accessed due to safety constraints.
- There were bright lights on around the east elevations of B1, and lights on inside of B1 during the first and second surveys, which is likely to constrain bat activity. However, this will reflect typical activity of the building, which is in frequent use as a wedding venue.

These limitations have been fully considered in the findings of this report and the recommendations for further survey effort, mitigation, and compensation.

3.0 Results and Evaluation

3.1 Internal Inspection

The internal inspection of B1 concluded that the interior of the building remains materially unchanged. The building had been recently cleared in preparation for the next wedding event.

The building is one storey, detached, and separated into three attached compartments, the north-east compartment, central compartment, and south-west compartment. No bat evidence was found (feeding remains, bat droppings etc). A single common pipistrelle bat flew out from a crevice above the middle barn door when the building was opened to facilitate the internal inspection; it quickly then landed and crawled into a crevice under the wooden bargeboards on the south-east elevation.

The north-east compartment is open to the elements on the south-western side and may offer some value as a feeding roost for bats during evenings when it is not in use at night time. Gaps exist under wooden bargeboards, slate tiles, and lead flashing along the ridge line, and may provide roosting value for crevice dwellers. The jackdaw nest identified during the PEA did not appear to be active at the time of the internal inspection and no other active birds' nests were identified.

The central compartment has a Jirkinhead roof. Gaps exist under slate roof tiles, under lead flashing along the ridge line, wooden bargeboards, around the north-eastern gable end, under the eaves, under wooden doors on the south-east elevation, and under loose lead flashing around the chimney on the south-western elevation. The chimney itself also has no mesh or grate and would provide access directly into the interior of the barn. Internally, the central roof section is lined with wooden sarking, which is mostly intact but with a small number of gaps. The interior of the building is frequently used at night and windows illuminate the internal space; the central will therefore likely be unsuitable for light-sensitive void-dwelling bats.

The south-west compartment has a hipped roof. Gaps exist in the stonework on the south-east elevation, under loose slate tiles, under lead flashing along the ridge line, and around a floating timber-framed door on the north-east elevation. Two single-storey timber-clad extensions offer negligible habitat value for bats or birds due to a lack of suitable roosting or nesting features. Internally, the south-west compartment is lined with wooden sarking, which appears intact.

A roof space above the south-west compartment could not be accessed due to safety constraints.



South-western section (left), central section (middle), north-eastern section (right)



Interior of north-eastern section



South-western section (right), central section (left)



Interior of central section



The crevice which the common pipistrelle bat crawled back into on the east eelvation.

3.2 Survey Results

The results of each survey are provided in the tables below and shown on the plan in Appendix 3.

Table 2: Survey results (first visit)

Date		03/08/2023	
Start and end times		20:37 – 22:22 Sunset: 20:52	
Weather conditions		**Start:** Temp: 15°C Relative Humidity: 79% Cloud Cover: 90% Wind: 6mph Rain: None	**End**: Temp: 14°C Relative Humidity: 84% Cloud Cover: 40% Wind: 5mph Rain: None
Surveyor (position) **As shown in Appendix 3**		**Alexie Jenkins**–1 years bat survey experience - Position 1 – observing the southeast elevations and roof structure of B1 **Dale Blackburn** – 2 years bat survey experience - Position 2 – observing the southwest and southeast elevations and roof structure of B1 **Ross Allen** – 5 years bat survey experience – Position 3 – observing the northwest and southeast elevations and roof structure of B1 **David Brookes** – 3 years bat survey experience – Position 3 – observing the northeast and southeast elevations and roof structure of B1	
IR position **As shown in Appendix 3**		Position 1 - observing the observing the southeast elevations and roof structure of B1 Position 2 – observing the observing the northwest and southwest elevations and roof structure of B1	
Building reference	**Surveyor position**	**Notes/observations:**	

B1	1	Little activity seen throughout the survey from this elevation. First call heard was a common pipistrelle at 20:52, heard and not seen. Pipistrelle, serotine and noctule calls were heard but not seen throughout the survey. A serotine was heard and not seen at 21:33. At 21:37 and 21:58 a noctule came from the trees in the south and engaged in foraging activity in the driveway adjacent to the east elevation before returning to the trees. A pipistrelle flew north over B1 at 21:52. Last call heard was a common pipistrelle, heard and not seen at 22:04.	
B1	2	Activity started at 20:42, with a common pipistrelle heard and not seen**. At 20:48 the first of 17 of common pipistrelle emergences from under the flashing between the brick and the roof tiles on the southeast side of the chimney**. A brown long eared bat was observed feeding south of B1 at 21:27. A serotine was observed feeding near the treeline south of B1 at 21:32. **At 22:02, two common pipistrelles re-entered B1 via the flashing near the southeast side of the chimney**. From then until the end of the survey there was lots of common pipistrelle swarming activity around the chimney until the end of the survey.	

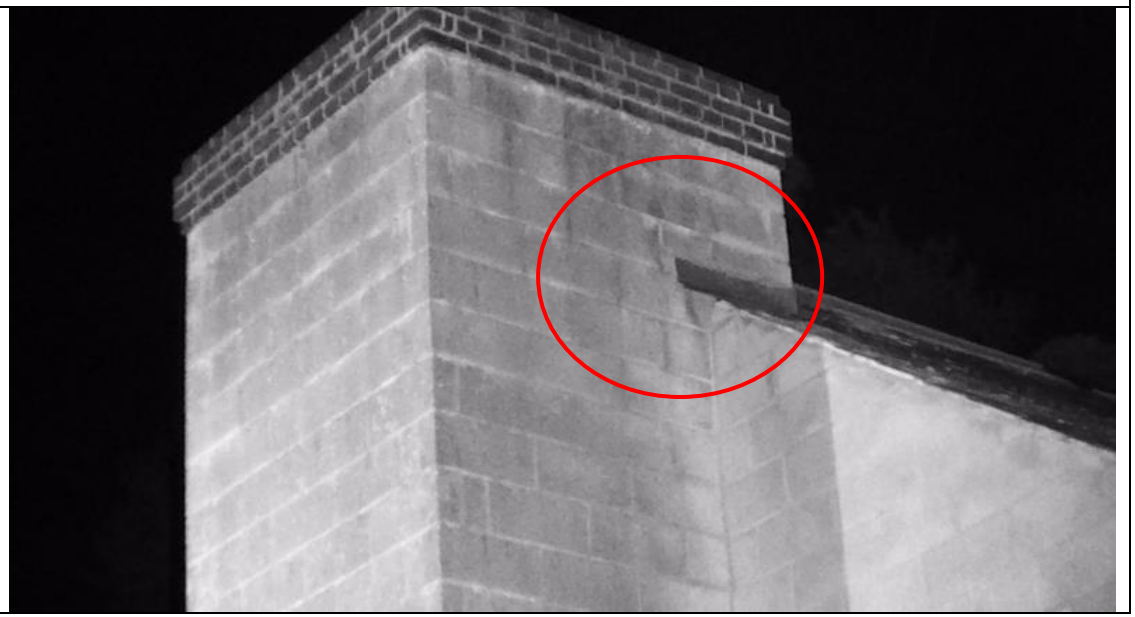
B1	3	First call heard at 20:42, a common pipistrelle heard and not seen. From 20:53, **17 common pipistrelles emerged from the northeast side of the chimney (same bats that surveyor 2 observed), and 16 common pipistrelles emerged from under the flashing on the northwest side of the chimney**. Serotine and noctules passed along the treeline south of B1 infrequently throughout the survey. **A total of 10 re-entries were observed from 21:08 – 22:21.**	
B1	4	Constant common pipistrelle passes were heard during the survey, but not seen. Between 21:45 and 22:10, two common pipistrelles passed from the north engaged in foraging activity between the treelines north and west of B1.	
Building reference	**IR position**	**Notes/observations:**	

B1	1	**No emergences or roosting activity recorded.**	
B1	2	**A total of 34 common pipistrelle emergences and 10 re-entries were observed, 17 from the lead flashing between the brick chimney and roof tiles on the northwest side of the chimney and 17 from the other side of the chimney.**	
Total count		Common pipistrelle – x34 emerge, x10 re-entered	
Other observations		Little owl observed passing from north to tree line west of B1.	

Table 3: Survey results (second visit)

<table>
<tr><td colspan="2">Date</td><td colspan="2">17/08/2023</td></tr>
<tr><td colspan="2">Start and end times</td><td colspan="2">20:11-22:26
Sunset 20:26</td></tr>
<tr><td colspan="2">Weather conditions</td><td>Start:
Temp: 19°C
Relative Humidity: 66%
Cloud Cover: 95%
Wind: 3mph
Rain: None</td><td>End:
Temp: 17°C
Relative Humidity: 60%
Cloud Cover: 100%
Wind: 2mph
Rain: None</td></tr>
<tr><td colspan="2">Surveyor (position)
As shown in Appendix 3</td><td colspan="2">Jayden Dawn–1 years bat survey experience - Position 1 – observing the southeast elevations and roof structure of B1
Kriz Wood – 2 years bat survey experience - Position 2 – observing the southwest and southeast elevations and roof structure of B1
David Brooks – 3 years bat survey experience – Position 3 – observing the northwest and southeast elevations and roof structure of B1
Emily Hill – 1 years bat survey experience – Position 3 – observing the northeast and southeast elevations and roof structure of B1</td></tr>
<tr><td colspan="2">IR position
As shown in Appendix 3</td><td colspan="2">Position 1 - observing the southwest elevations and roof structure of B1
Position 2 –observing the southwest elevations and roof structure of B1</td></tr>
<tr><td>Building reference</td><td>Surveyor position</td><td colspan="2">Notes/observations:</td></tr>
<tr><td>B1</td><td>1</td><td>First activity was a common pipistrelle, heard and not seen at 20:17. At 20:31, two common pipistrelles emerged from the roof tiles on the southeast hip roof (precise location not identified). Infrequent serotine, pipistrelle and noctule calls were heard and not seen throughout the survey.</td><td></td></tr>
</table>

B1	2	From 21:14 – 20:35, **2 common pipistrelles emerged from the under the flashing between the brick and the roof tiles on the southeast side of the chimney.** There frequent passes from noctules, pipistrelles and brown long eared bats were seen along the tree lines south and west of B1throughout the survey.	
B1	3	**Six common pipistrelles emerged from under the lead flashing on the northwest side of the chimney 20:16 and 22:05. Five common pipistrelle bats entered the building through this same place.** For the last 30 minutes of the survey, there was almost constant common pipistrelle swarming activity around the same feature, and towards the end of the survey common pipistrelle, brown long eared, serotine and noctule bats were feeding around the west side of the site.	

B1	4	First activity seen at 20:41 with foraging behavior from a common pipistrelle in the tree line on the west side of the building. At 21:05 a common pipistrelle passed behind me around the northeast tree line. Constant activity frequently heard and not seen from common and soprano pipistrelles, serotines and noctules throughout the survey. **No emergences seen.**	
Building reference	**IR position**	**Notes/observations:**	
B1	1	**At 20:14 two common pipistrelles emerged from under the flashing between the brick and the roof tiles on the southeast side of the chimney.**	

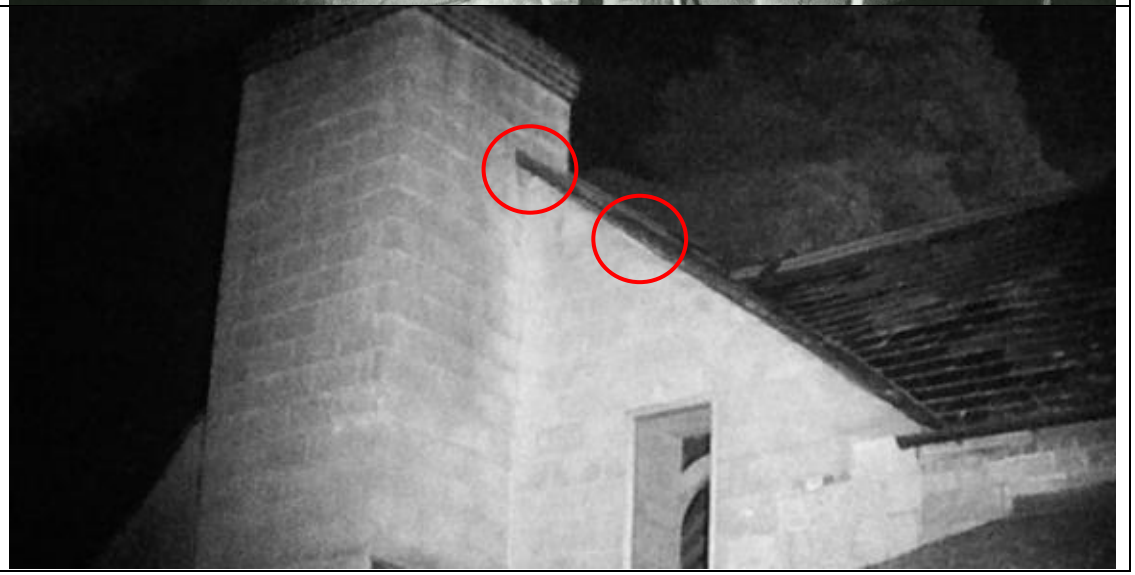
B1	2	**Two common pipistrelles emerged from the southeast side of the chimney at 20:14, exact location out of view (seen by position 2). Six common pipistrelles emerged from under the lead flashing connected to the northwest side of the chimney between 20:16 and 22:05. 5 common pipistrelle bats entered the building through this same place during the survey.**	
Total count		Common pipistrelle – x10 emerge, 5 re-entered,	
Other observations		N/A	

Table 4: Survey results (third visit)

Date		11/09/2023	
Start and end times		19:24 – 21:09 Sunset: 19:39	
Weather conditions		**Start:** Temp: 23°C Relative Humidity: 63% Cloud Cover: 75% Wind: 1mph Rain: None	**End**: Temp: 18°C Relative Humidity: 87% Cloud Cover: 50% Wind: 1mph Rain: None
Surveyor (position) **As shown in Appendix 3**		**Emily Hill**–1 years bat survey experience - Position 1 – observing the southeast elevations and roof structure of B1 **Georgia Knight** – 2 years bat survey experience - Position 2 – observing the southwest and southeast elevations and roof structure of B1 **Ross Allen** – 5 years bat survey experience – Position 3 – observing the northwest and southeast elevations and roof structure of B1 **Adora Thabah** – 3 years bat survey experience – Position 3 – observing the northeast and southeast elevations and roof structure of B1	
IR position **As shown in Appendix 3**		Position 1 - observing the southeast elevations and roof structure of B1 Position 2 – observing the southwest elevations and roof structure of B1 Position 3 – observing the south elevation and roof structure of B1 Position 4 - northeast and southeast elevations and roof structure of B1	
Building reference	**Surveyor position**	**Notes/observations:**	

B1	1	Activity began at 19:41 with a common pipistrelle heard and not seen. A Noctule passed along the northwest treeline at 19:44. There was a common pipistrelle pass from northeast to southwest over the building at 20:00. A brown long-eared bat passed over the building from the northwest to southwest at 20:18. There was common pipistrelle foraging activity in the northeast treeline between 20:47-20:56. There was frequent common pipistrelle and noctule activity heard not seen throughout the entirety of the survey. **No emergences were observed.**	
B1	2	**First emergence from common pipistrelle at 19:44 from the gable end roof tiles. Three further emergences from common pipistrelle at 19:46 from under the flashing where the roof meets the southeast side of the chimney. There were four further common pipistrelle emergences from the same spot at 19:48. One serotine emergeed from the same location at 19:47. One myotis bat (daubenton's) emerged from a gap in the flashing the flashing on the lower section of the roof at 19:54.** There was frequent foraging acitivty from common pipistrelles, myotis and serotine species throughout the duratinon of the survey.	

B1	3	First call at 19:43, which was a noctule not seen. **At 19:44, a common pipistrelle emerged from the other side of the chimney from my location. Another seven common pipistrelles emerged from behind the chimney space between 19:45 and 19:50. At 19:47 a serotine also emerged from this location.** All the bats that emerged headed east towards the tree line. For the rest of the survey there was continuous foraging activity from multiple species; common pipistrelles, serotines, brown long-eared and myotis species (whiskered and daubenton's).	
B1	4	**At 20:01, a common pipistrelle emerged from under a roof tile on the southeast roof. Between 20:02 and 20:17, a total of 14 common pipistrelles emerged from under the guttering along the east elevation. There were three common pipistrelle emergences from gaps between the roof and brickwork on the northern gable end.** Throughout the survey there was constant foraging activity by pipistrelles, noctules and brown long-eared.	
Building reference	**IR position**	**Notes/observations:**	

B1	1	**No emergences or roosting activity observed.**	
B1	2	**There was a common pipistrelle emergence from under the roof tiles on the gable end at 19:44. There were seven common pipistrelle emergences from the flashing where the roof meets the southeast side of the chimney structure between 19:97 and 19:51. A serotine emerged from the flashing meets the chimney structure at 19:49.** From 20:00 to 20:11 there is a bat seen through the window flying around inside the building (unidentified).	

B1	3	**A total of eight common pipistrelles emerged from the southeast of the chimney between 19:44 and 19:51. A serotine emerged from the same location at 19:47.**	
B1	4	**At 20:02, a common pipistrelle emerged from under a roof tile on the southeast roof. Between 20:02 and 20:17, a total of 16 common pipistrelles emerged from under the guttering along the east elevation. There were three common pipistrelle emergences from gaps between the roof and brickwork on the northern gable end.**	
Total Count		Common pipistrelle -x24 emerged, Serotine – x1 emerged, Daubenton's x1 emerged	
Other observations		N/A	

4.0 Conclusions, Impacts and Recommendations

Taking the field survey results into account, Table 5 presents an evaluation of the value of the buildings for roosting bats in relation to the proposed development which will comprise major repairs and alterations to the existing barn, with associated landscaping and vehicle parking/access.

Table 5: Evaluation of the building on site for roosting bats

Building	Survey Results Summary	Impact Assessment	Recommendations	Biodiversity Enhancement Opportunities[2]
B1	Roost 1: Species: common pipistrelle Peak count: 34. Due to the late season surveys this is likely to be an under-estimate of numbers, as the roost will have started to split off by the time the surveys began. Roost type: maternity Roost location: south chimney Access points: gaps in flashing where roof meets chimney structure, and multiple access points through rooftiles on the north and east elevations.	Building B1 is proposed to be majorly repaired and altered, including a full roof strip, installation of insulation, and extension, then internal renovations. These works will destroy the bat roosts present. The proposed development may include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	An EPSL application to Natural England will be required to legally permit the proposed works. The EPSL application requires that surveys have been undertaken within the most recent active bat season (optimal May to August, suboptimal September). Planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission, where possible to do so. The survey effort should include at least one survey between May and June when the detection rate of bat roosts is highest. A Material Changes Check will be required within three months of the EPSL submission, if no survey work has been undertaken within that period. If bat droppings were found during the PRA, a sample will need to be sent off for DNA analysis to confirm the bat species present, to inform the EPSL application. Biological records data will also need to be obtained to inform the application. The EPSL will detail any mitigation and compensation measures that will be required for the proposed development to comply with the standing advice and will be designed to reduce any impacts to an acceptably low level so as to maintain (or enhance) the Favourable Conservation Status (FCS) of the local bat population. The EPSL will include the following measures: • Timing of works to avoid the maternity season (May to September) • The installation of 3 bat boxes at the site (one bat box per bat species) prior to works commencing to form a receptor site for any bats found during the works. These boxes may be installed on buildings or trees or can be pole mounted but must be in an	The installation of 3 bat boxes at the site will provide additional roosting habitat for bats. The bat boxes will be installed on trees around the site or the repaired building. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light. The bat boxes will be a specification suitable for pipistrelle maternity roosts such as the Nestbox Roost Maternity Bat Box or a similar alternative brand.

[2] The Local Planning Authority has a duty to ask for enhancements under the NPPF (2021).

	This roost is considered to have moderate conservation value, in line with the Bat Mitigation Guidelines (Natural England, 2023). Roost 2: Species: Daubenton's myotis Peak count: 1 Roost type: day Roost location: south chimney Access points: flashing where the lower roof meets chimney. This roost is considered to have low conservation value, in line with the Bat Mitigation Guidelines (Natural England, 2023). Roost 3: Species: serotine Peak count: 1 Roost type: day Roost location: south chimney Access points: flashing where the		undisturbed location and will need to be maintained in this location post-development. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light. • The provision of a toolbox talk to contractors, by the Named Ecologist or an Accredited Agent, to inform them of the presence of bat roosts. • A pre-commencement inspection of any roost features by the Named Ecologist or an Accredited Agent using a torch and an endoscope (this may be via ladders, scaffolding or a mobile elevated platform). • The removal of bat roost features by hand under the supervision of the Named Ecologist or an Accredited Agent (where it is not possible conclude absence of bats during the pre-commencement inspection). • Avoiding the use of unnecessary lighting, particularly at night, or implementing a low impact lighting strategy to avoid illumination of retained or newly created roosts or roost features. • Avoiding excessive noise or vibration disturbance e.g. from power tools or radios, within close proximity of retained or newly created roosts or roost features. • Like for like roost replacement features will be required for any roosts that are destroyed. These will need to be confirmed once full details and specifications of the work have been provided. • Post development monitoring will be required on completion of the development to ensure all measures are in place, and then in years 2 and 4 post development to monitor the success of the roost compensation. The EPSL will only include the bat species, numbers and roost types listed above. If bats are found during periods of adverse weather conditions, these must be left undisturbed until weather conditions become more favourable to move bats to the receptor bat box. EPSLs do not allow for the disturbance of hibernating bats. Therefore, if any bats are found during the hibernation period November to March or if any unexpected bat species or roost types are identified works must cease and advice must be sought from the Named Ecologist regarding the possible	

	roof meets chimney.		requirement for timing restrictions for works, the completion of further bat surveys or a modification to the EPSL. A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures: • Light spill on to B1 and the trees south and west of B1 should be avoided. • Use narrow spectrum light sources to lower the range of species affected by lighting. • Use light sources that emit minimal ultra-violet light. • Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. • Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. • External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. • Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.	
Nesting birds	During the PRA a jackdaw nest was found on the southwest elevation. This nest was inactive during the BERS.	As an old nest was found on B1, the building is clearly suitable for nesting birds. The proposed development could result in the destruction or the disturbance and subsequent	A precautionary working method will prevent harm to nesting birds. Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building should be undertaken immediately, by qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged.	The installation of one bird box at the site will provide additional nesting habitat for birds. The bird box will be installed on new structures. General purpose bird boxes should be

		abandonment of active bird nests.		positioned 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight.

5.0 Bibliography

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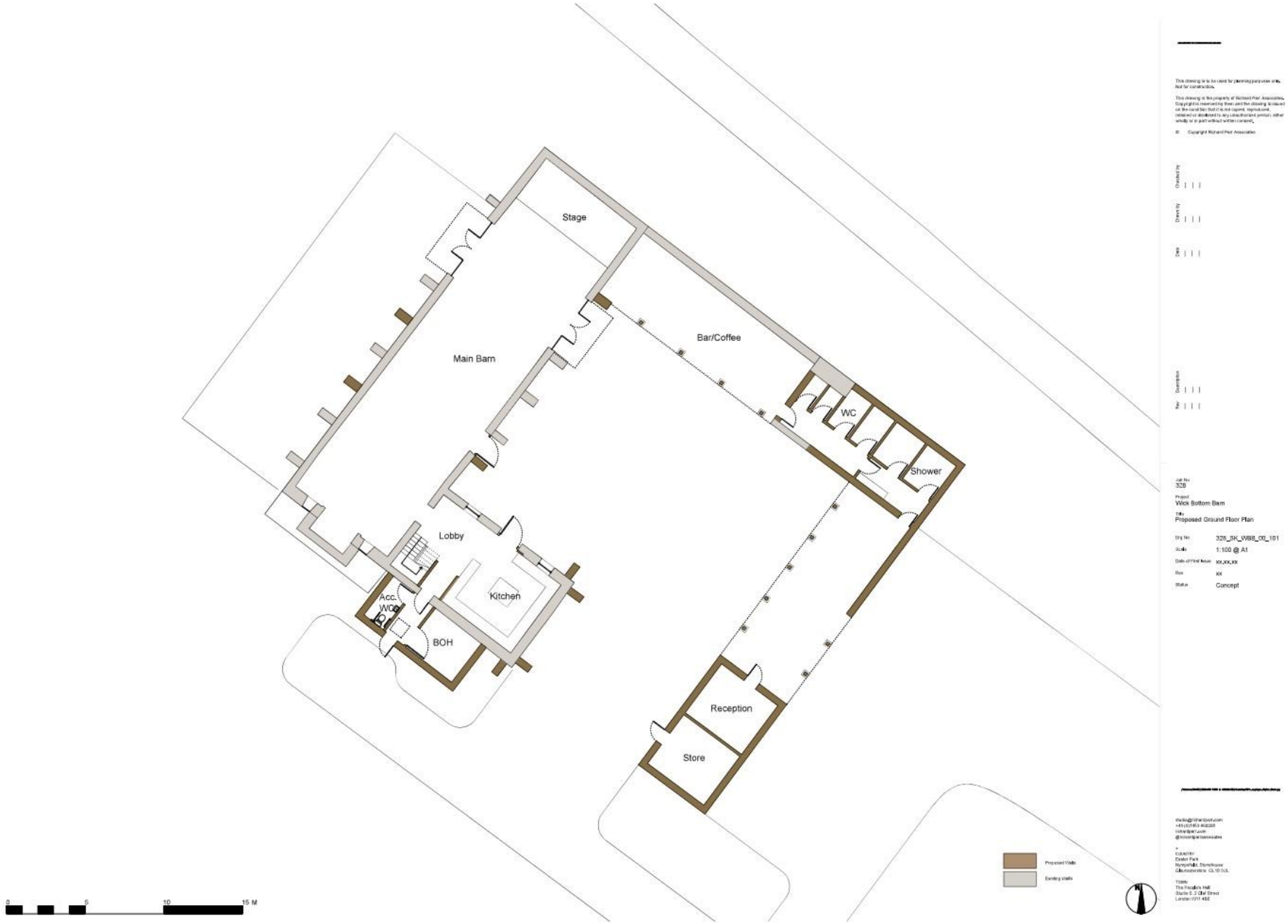
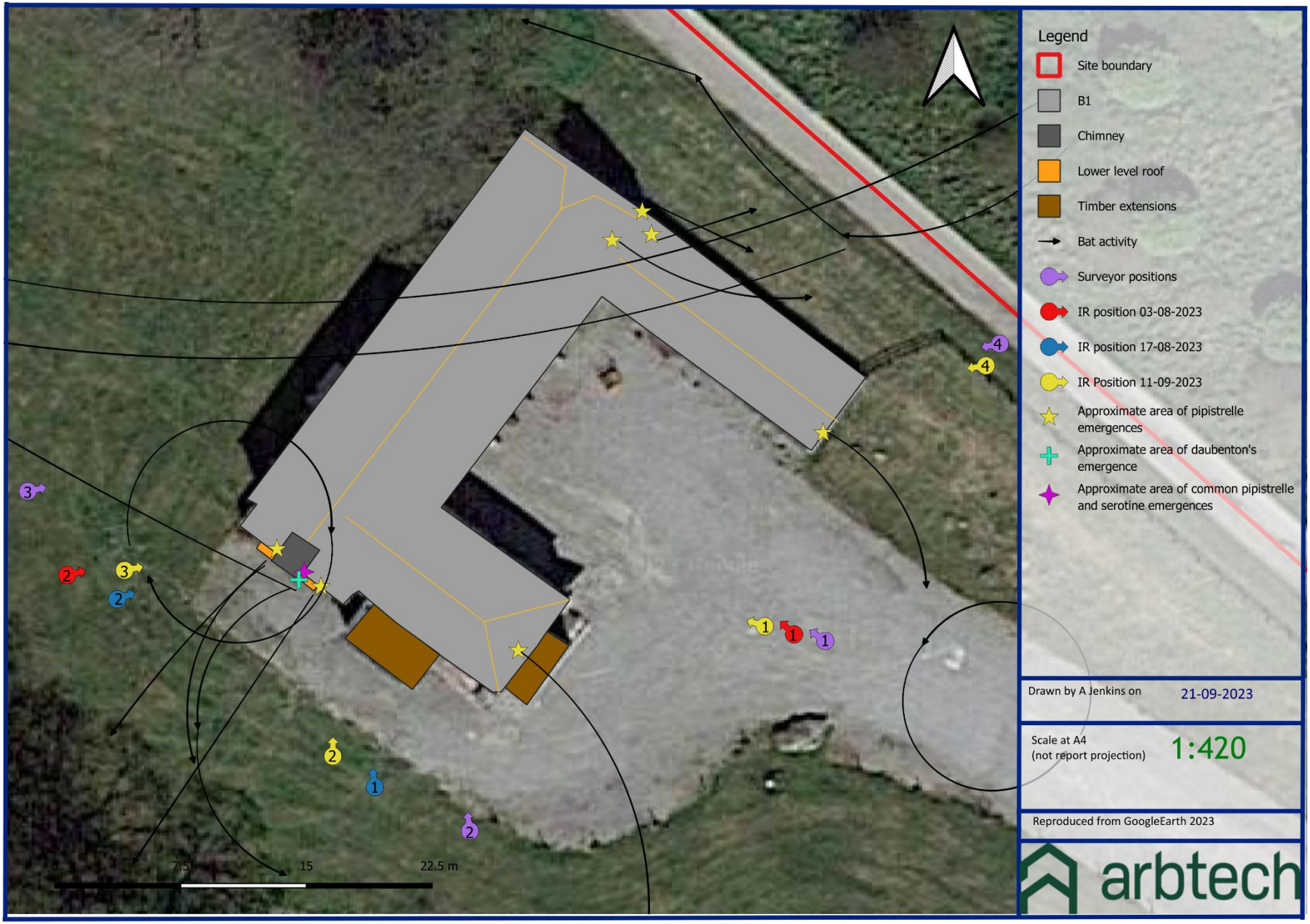
Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan



Appendix 3: BERS Plan



Appendix 4: Legislation and Planning Policy Related to Bats

LEGAL PROTECTION

All species of bat are fully protected under ***The Conservation of Habitats and Species Regulations 2017*** (as amended) through their inclusion on Schedule 2.

Regulation 43: Protection of certain wild animals - offences

(1) A person is guilty of an offence if they:

(a) Deliberately captures, injures or kills any wild animal of a European protected species,

(b) Deliberately disturbs wild animals of any such species,

(c) Deliberately takes or destroys the eggs of such an animal, or

(d) Damages or destroys a breeding site or resting place of such an animal,

(2) For the purposes of paragraph (1) (b), disturbance of animals includes in particular any disturbance which is likely—

(a) To impair their ability:

(i) To survive, to breed or reproduce, or to rear or nurture their young; or

(ii) In the case of animals of a hibernating or migratory species, to hibernate or migrate; or

(b) To affect significantly the local distribution or abundance of the species to which they belong.

Bats are also protected under the ***Wildlife and Countryside Act 1981*** (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

NATIONAL PLANNING POLICY

National Planning Policy Framework 2021

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; measurable gains in biodiversity in and around developments are incorporated; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

LOCAL PLANNING POLICY

Wiltshire Local Development Scheme (September 2017)

The Wiltshire Local Development Scheme can be viewed here: www.wiltshire.gov.uk/media/738/Wiltshire-Local-Development-Scheme/pdf/spp-wiltshire-local-development-scheme-sep-2017.pdf?m=637103779663100000

Wiltshire Biodiversity Action Plan

The Wiltshire Biodiversity Action Plan can be viewed here: https://www.wiltshirewildlife.org/sites/default/files/2022-08/wiltshirebap2008%281%29.pdf

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) issued by Natural England will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored. The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

There are 17 species of bat breeding in England and Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law. Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

- include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
- scientific and educational purposes;
- ringing or marking; and,
- conserving wild animals.

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.

EUROPEAN PROTECTED SPECIES POLICIES

In December 2016 Natural England officially introduced the four licensing policies throughout England. The four policies seek to achieve better outcomes for European Protected Species (EPS) and reduce unnecessary costs, delays and uncertainty that can be inherent in the current standard EPS licensing system. The policies are summarised as follows:

- Policy 1; provides greater flexibility in exclusion and relocation activities, where there is investment in habitat provision;
- Policy 2; provides greater flexibility in the location of compensatory habitat;
- Policy 3; provides greater flexibility on exclusion measures where this will allow EPS to use temporary habitat; and,
- Policy 4; provides a reduced survey effort in circumstances where the impacts of development can be confidently predicted.

The four policies have been designed to have a net benefit for EPS by improving populations overall and not just protecting individuals within development sites. Most notably Natural England now recognises that the Habitats Regulations legal framework now applies to ‘local populations’ of EPS and not individuals/site populations.