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Tyrer Ecological Consultants Ltd, Formby Business Centre, 42 Duke Street, Formby, L37 4AT

Dusk Survey Results

September 2022

Coach Road Farm

Cut Lane

Kirkby

Knowsley

L33 3AJ

National Grid Ref: SJ45559739



Coach Road Farm, Cut Lane, Kirkby, Knowsley, L33 3AJ
Dusk Survey Results in Relation to Bats

Document Title	Dusk Survey Results
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Appendix I: *Preliminary Roost Assessment* (ADAS, April 2022)

N.B. Bat emergence/re-entry surveys are typically valid for a period of 12-18 months, at the discretion of the Local Planning Authority and/or Natural England. Should your planning application not achieve consent, or a licence application (where required) not be applied for within this time period, updated surveys may be required.

1.0 Background and Introduction

- 1.1 As part of an ongoing application with Knowsley Council (Ref: 22/00299/FUL) at Coach Road Farm, Kirkby (see Figures 5.1-5.2 for building layout), ADAS conducted a daytime inspection and assessment in relation to bats and breeding birds in April 2022. As part of this survey a Preliminary Roost Assessment (PRA) was carried out, which concluded the following:

“Stone Barns A and B and the Piggery were each considered to have ‘moderate’ bat roost potential, and the Main Barn was considered to have ‘negligible’ bat roost potential. This was due to the good quality habitat surrounding the site, the occasional bat droppings within the Stone barns and piggery, the number of features available for crevice-dwelling bats within the stone barns and the piggery, and the structure of and lack of suitable roosting features within the Main barn. To confirm the presence of likely absence of bat roosts within Stone Barn A, Stone Barn B and the Piggery, further surveys are recommended prior to commencement of the application. In line with best practice guidelines (Collins, J (ed) 2016), two emergence / re-entry bat surveys are recommended for Stone Barns A, Stone Barn B and the Piggery to confirm presence or a likely absence of bat roosts within the structures. As structures are located adjacent to each other, all buildings can be surveyed at the same time to reduce survey effort, using five surveyors to cover all aspects and potential roost features identified during this assessment.”

- 1.2 Development proposals for the site involve the conversion of two agricultural buildings into two dwellings with detached garages and associated access.
- 1.3 Tyrer Ecological Consultants Ltd were therefore commissioned by Mr. B. Leonard to undertake the further bat surveys recommended in the Preliminary Survey; the surveys (two dusk emergence surveys) were carried out in August-September 2022 in accordance with current Bat Conservation Trust (BCT) Guidelines during the active season of bats (see Figure 1.1).

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).		
Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey ^a (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. ^b

Figure 1.1 - Extract from Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016)

- 1.4 The results, conclusions and recommendations following the survey, including any indicative mitigation to inform an application to Natural England for a European protected species mitigation licence (EPSML), where necessary, will be supplied within this report.
- 1.5 This report should be read, understood and presented to the local authority as an additional document to Appendix I (see Contents page).
- 1.6 In accordance with *Biodiversity Net Gain: Good practice principles for development* (CIEEM et al, 2019), measures have been recommended proportionate to anticipated impacts to ensure that the proposed development results in a biodiversity net gain.

2.0 Bats - Legislation & Policy

2.1 All British bats and their ****roosts**¹ are afforded protection under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and are listed in Schedule 2 of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579). When dealing with cases where a European Protected Species (EPS) (all UK bats) may be affected, a planning authority is a competent authority within the meaning of the Regulation 7 of the Regulations, that has a statutory duty as the local authority to have due regard to the provisions of the Regulations in the exercise of its functions.

2.2 Use of Buildings by Bats

- a) Summer breeding roost (May-August)
- b) Hibernation roost (October-March)
- c) Transitional or temporary roost (Mainly spring/summer months)

Roost selection is often closely correlated to suitable foraging habitat within a reasonable commuting distance from the roost and different sites are used depending upon insect densities and abundance, climatic conditions can also affect their ability to successfully forage. All British bats are insectivorous.

Policy

2.3 Paragraph 180 of the National Policy Planning Framework (as revised in July 2021) states:

180. When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶³ and a suitable compensation strategy exists; and,*
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.*

¹ ******The term roost is generically referred to as a place that bat/s use for the any of the above reasons, however it should be noted that under the Conservation of Habitats and Species Regulations (2019) (EU Exit) (Regulation 43 (d) the term roost is not used but refers to “a *breeding site or resting place of such an animal*” and is afforded legal protection. The roost, breeding site or resting place of bats, which ever terminology is used is legally protected whether or not bats are in occupation.

- 2.4 Policy CS8 of the Adopted Knowsley Local Plan, titled Green Infrastructure, echoes this national focus on preservation of biodiversity, stating:

1) Knowsley's existing Green Infrastructure and its beneficial functions will be protected, managed and/or enhanced, primarily to:

- a) Ensure more attractive and cleaner residential neighbourhoods;*
- b) Sustain and promote biodiversity (including designated sites, priority habitats and protected and endangered species) in accordance with importance and contribution to ecological networks;*
- c) Preserve the character and function of historic environments and valued landscapes;*
- d) Mitigate the effects of climate change and flood risk;*
- e) Mitigate air, water and noise pollution;*
- f) Provide local opportunities for sport, recreation and allotments; and*
- g) Provide sustainable transport linkages between residential neighbourhoods and easy access to employment and services.*

Point 5.87 delves further into the priorities of the council, and states:

The key priorities for natural assets and geology in the Liverpool City Region are:

- To manage the natural assets better – to protect the integrity of nature sites of international importance, and to protect the city region's nature and geodiversity assets; and*
- To make sure there is no net loss of these natural assets and to extend and enhance the city region's Ecological Network and natural assets.*

3.0 Protected Species in Merseyside

- 3.1 Up to nine bat species have been recorded in Merseyside, many of which use built structures and trees for roosting. A variety of building types and features are utilised by bat species at different times of year ranging from occupied residential dwellings to disused barns and bridges. The most frequently encountered species is the common pipistrelle bat (*Pipistrellus pipistrellus*); its abundant status in Merseyside is mirrored throughout the UK.

4.0 Survey Methods

- 4.1 Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) edition states:-

"The guidelines do not aim to either override or replace knowledge and experience. It is accepted that departures from the guidelines (e.g. either decreasing or increasing the number of surveys carried out or using alternative methods) are often appropriate. The guidance should be interpreted and adapted on a case-by-case basis according to site-specific factors and the professional judgement of an experienced ecologist. Where examples are used in the guidelines, they are descriptive rather than prescriptive."

Relative to the above the survey protocol has been determined using the collective and long standing experience of Tyrer Ecological Consultants Ltd and knowledge of the specific nature of the site.

Survey Protocol

- 4.2 The timing of the surveys was in August -September; thus, the second survey was just outside of the typical breeding season of bats and the typically recommended survey window for structures categorised as 'Moderate' (see Figure 1.1).

In accordance with Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016), it is specified that:

"The bat active period is generally considered to be between April and October inclusive", though the period of May - August is the optimal most productive period that Natural England accept bat surveys and grant European Protected Species Mitigation licences (EPSML).

In general surveys during August to October may detect mating bats, and surveys during September and October may detect transitional roosts used after bats have dispersed from maternity colonies but prior to hibernation. In the case of the bat roost potential that exists at Coach Road Farm, the survey effort was considered sufficient considering the suitability of the site recorded during the Preliminary Roost Assessment conducted by ADAS, who established that the buildings were unlikely to provide enough space, shelter, protection, or appropriate conditions to be of any potential for a maternity/breeding site or for loft dwelling species such as Brown Long Eared bats, and thus is confined to occasional or transitional use by singular or small numbers of bats. It is therefore considered that completion of the surveys during September could be of greater benefit and could provide a better understanding of the structures value in respect to bats, notably for transition roosts prior to hibernation. BCT guidelines also state the following:

"September and October surveys may detect transitional roosts used after bats have dispersed from maternity colonies but before they go into hibernacula (although October may be less suitable for surveys in more northerly latitudes)."

Singular/low numbers of common pipistrelle bats can be very opportunistic when selecting roosts but generally have a number of roost opportunities within a given range and will alternate between them. The highest proportion of maternity roosts of this species is found in warm, dry residential properties, including modern dwellings. As previously described, the building does not meet these requirements and there is no evidence to suggest that post breeding dispersal of a maternity roost is taking place at the structure or that it is used for instance as a "satellite" roost in conjunction with any other roost in the locality.

When considering survey protocol the decisions about whether dusk or dawn surveys are selected are based on the extensive experience of the Tyrer Ecological Consultants Ltd, the nature of the building and species that can be anticipated as being present either at the property or in the locality and how complex a building is relative to observations.

In this case the bat roost potential that exists at Coach House Farm presents no problems for dusk observations; if a building is complex, or observations were restricted, or species that are difficult to detect at dusk are suspected then dawn surveys would be conducted. At Coach House Farm there are no visual constraints and to date there is no evidence to suggest the presence of such species.

It should also be noted that at dawn temperatures are usually lower than at dusk as a result bat activity can, in some locations, be less frequent. Additionally, where singular/small numbers of bats are present and there are no survey constraints then dawn surveys are of no more value than dusk surveys; singular bats can and do return to a roost before dawn and as a result a dawn

survey would not record them anyway. Dawn surveys are more productive when “back tracking” bat to a roost from foraging grounds.

Survey protocol should not be determined by parties who are 1) not familiar with the site 2) do not have a sufficient level or experience in relation to the undertaking of dusk/dawn bat surveys.

- 4.3 The number of surveys and surveyors was adequate relative to the roost potential that was identified on attendance of the site i.e. ‘Moderate’ and requiring five surveyors to accurately monitor potential roost features (PRF’s) on the buildings at any one time.
- 4.4 Surveyors were strategically positioned so that all elevations with bat roost potential, as described in the daytime report, could be observed without limitations. The surveyors were aided with Anabat or equivalent electronic bat detectors that enable the locating and recording of the high frequency calls that are emitted by bats; echolocation calls were analysed the next day using Analook or equivalent computer software to verify field observations.

5.0 Results

Two dusk emergence surveys were undertaken on 25th August and 8th September 2022 by five surveyors at a time; surveyor credentials have been given within Table 5.1. Tables 5.2-5.3 alongside Figures 5.1-5.2 document the results of the dusk surveys.

Table 5.1 - Surveyor Credentials

Surveyor(s)	Experience	Surveyor Credentials
Mrs. K. Wilding CEnv MIEMA ACIEEM	15 years	Principal level Ecologist and Director of Tyrer Ecological Consultants Ltd who holds a Natural England Class 2 License (CLS-14227). Has a large portfolio of successful granted mitigation licences in England and Wales. Natural Resources Wales License = S086297/1
Mr. D. Ney	5 years	A seasonal ecological consultant with experience of undertaking professional bat surveys
Miss. T. Hesketh	3 years	An experienced Junior ecologist with 3 years professional training and experience; holding a BSc in Biology and MSc in Conservation Management a course accredited by CIEEM. Accredited agent on the Class 2 Natural England bat license of Mrs K Wilding (CLS-14227)
Ms. E. Thomas	2 years	A seasonal ecological consultant with experience of undertaking professional bat surveys
Mr. B. Richards	1 year	Junior Ecologist with a range of training and experience. MBiolSci in Biological Sciences (Zoology), QualCIEEM
Dr. R. King MCIEEM	15 years	Seasonal Consultant at Tyrer Ecological Consultants Ltd.
Ms. I. Spall	5 years	A seasonal ecological consultant with experience of undertaking professional bat surveys

Table 5.2 – Survey dates, times and weather conditions

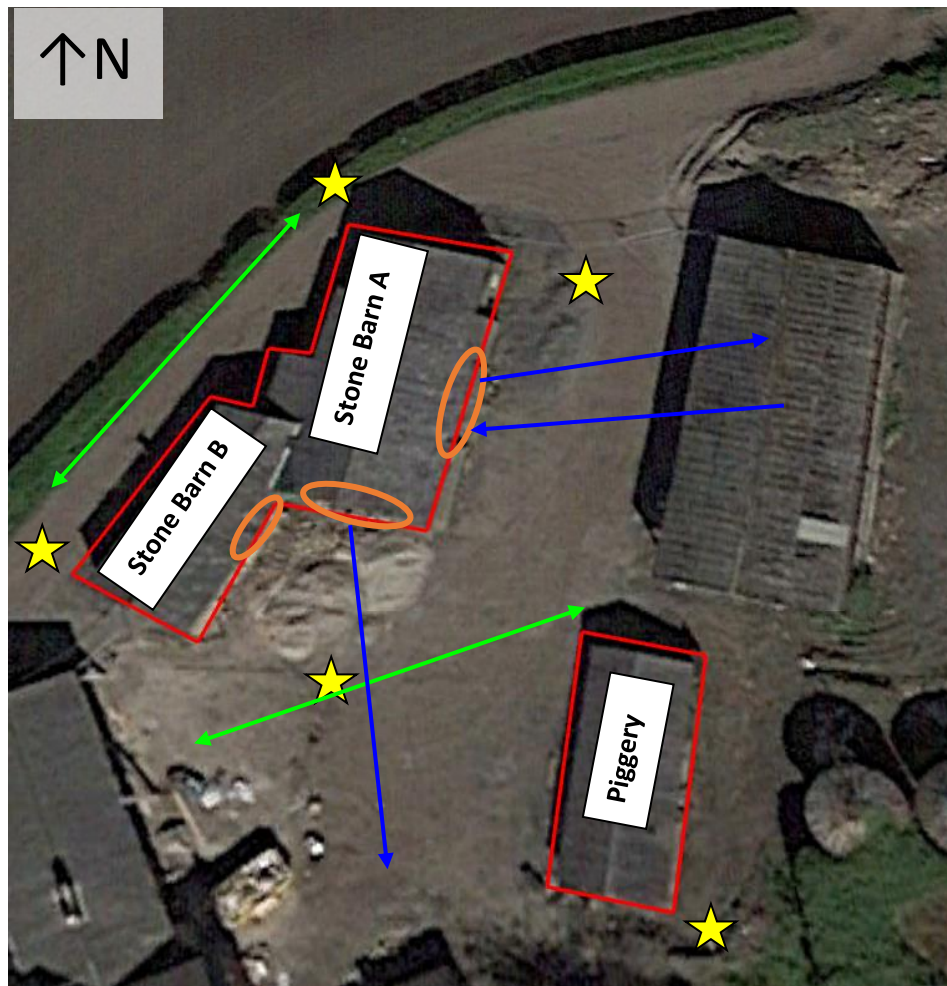
Times of Survey	Date	Weather Conditions
Dusk survey 1 1958 – 2150	25 th August 2022	Sunset: 2018: Dry, Light air, 5% cloud cover Start temp: 17 °C End temp: 17 °C
Dusk survey 2 1926 – 2115	8 th September 2022	Sunset: 1946: Dry, Calm, 98% cloud cover Start temp: 15 °C End temp: 15 °C

Table 5.3 – Dusk Survey Results

Dusk Survey	Time	Activity
25/08/2022	1958 – 2150	Summary: Emergence of three separate Common Pipistrelle from eastern door of Stone Barn A and one Brown Long-eared from southern door of Stone Barn A. 2042 hrs: Common Pipistrelle (CP) entering eastern door of Stone Barn A 2048 hrs: CP emergence from eastern door of Stone Barn A and heading east 2049 hrs: CP re-entering Stone Barn A briefly before leaving again 2058 hrs: Two CP emerged from eastern door of Stone Barn A 2059 hrs: One CP re-entered Stone Barn A after foraging in yard 2105 hrs: Emergence of Barn Owl from hay loft on eastern elevation of Stone Barn B 2106 hrs: CP emergence from eastern door of Stone Barn A 2108 – 2118 hrs: Constant foraging along road at north-west of the site by CP 2110 hrs: CP emergence from eastern door of Stone Barn A 2111 hrs: Brown Long-eared (BLE) emergence from southern door of Stone Barn A Activity consisted of frequent foraging activity by up to three CP and one BLE.

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08/09/2022	1926 – 2115	Summary: Emergence of three separate Common Pipistrelle from eastern door of Stone Barn A and one Common Pipistrelle from gap in brickwork on northern elevation of Stone Barn B 2003 hrs: Emergence of CP from eastern door of Stone Barn A 2004 hrs: Emergence of CP from gap in brickwork on northern elevation of B2 2004 - 2008 hrs: Repeated emergence and re-entry of eastern door of Stone Barn A by single CP 2018 hrs: Emergence of two CP from eastern door of Stone Barn A and re-entry by one 2019 – 2024 hrs: Continuous re-entry and emergence of two CP. 2021 – 2059 hrs: Frequent foraging by CP along road at north-west of site 2051 hrs: BLE heard but not seen Activity consisted of frequent activity by up to three CP and sporadic BLE activity.
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Dusk Survey 1 – 25/08/2022

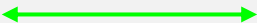
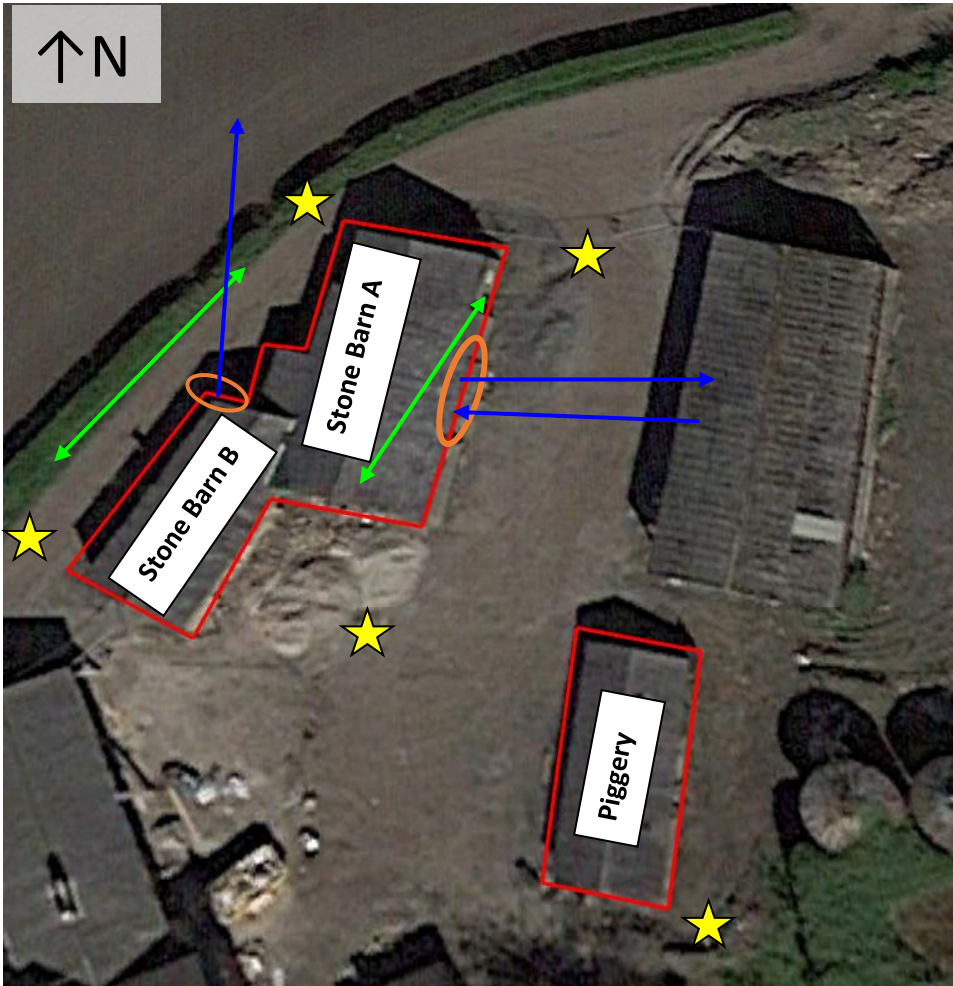
Key			
	Site Boundary		Foraging activity
	Surveyor Positions		Commuting activity
	Directional compass		Emergence points

Figure 5.1 - Visual Aid - Dusk Survey Results with Key



Dusk Survey 2 – 08/09/2022

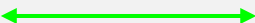
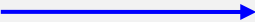
Key			
	Site Boundary		Foraging activity
	Surveyor Positions		Commuting activity
	Directional compass		Emergence points

Figure 5.2 - Visual Aid - Dusk Survey Results with Key



Figure 5.3 – Visual Aid – Emergence location of three Common Pipistrelle on both surveys from open door on eastern elevation of Stone Barn A



Figure 5.4 – Visual Aid – Emergence location of Brown Long-eared bat on first survey from open door on southern elevation of Stone Barn A (red circle) and barn owl from hay loft on eastern elevation of Stone Barn B (blue circle)

6.0 Survey Conclusions & Recommendations

Bats

- 6.1 The survey results gathered by Tyrer Ecological Consultants Ltd conclude that Stone Barn A at Coach Road Farm is being used by up to three Common Pipistrelle (*Pipistrellus pipistrellus*) and one Brown Long-eared (*Plecotus auratus*) bats for roosting purposes. Based upon the evidence, this building is host to 'Day roosts' for the named species in singular/small numbers, with three Common Pipistrelle bats emerging from the eastern door on both surveys, and a Brown Long-eared emerging from the southern door on the first survey. It is not possible to determine the number of separate roost locations within the building as all of the bats emerged from open doors, suggesting the presence of a minimum of two roosts. Furthermore, it is concluded that Stone Barn B is host to a day roost for one Common Pipistrelle, with a single emergence from a gap in brickwork on the northern elevation.
- 6.2 Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) describes a 'Day roost' as:
- "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".*
- 6.3 The full extent of the proposed works are understood to involve the conversion of the buildings on site; the destruction of several bat roosts will therefore need to be addressed from both a conservation and legal perspective along with the application of appropriate mitigation. A European Protected Species Mitigation Licence (EPSML) will be required to legally destroy places that are actively used for breeding, rest or shelter (roost) by bats, however, before a licence can be applied for all planning issues need to be resolved.
- 6.4 In order that the LPA can implement its obligations under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579), appropriate and proportionate mitigation will need to accompany the planning application which will demonstrate that the "*favourable conservation*" of the species concerned can be maintained.
- 6.5 Installation of new lighting as part of a development scheme that exceeds current levels may have a negative impact upon foraging/commuting bats confirmed as present in the vicinity, particularly if increased light spillage occurs in areas currently free from illumination such as illumination of boundary features. There are several measures that can be used to offset impacts upon bats, where lighting is unavoidable; these include, however are not limited to, the light source used and luminaire design, and accessories to direct light at its intended target. Numerous software programmes are currently available which can be used inform lighting plans, demonstrating how lighting decisions will illuminate a site. Refer to the Bat Conservation Lighting Guidelines for further strategic information if applicable.

Barn Owl and Kestrel

- 6.5 Due to the confirmed roosting of Barn Owls within Stone Barn B and Kestrel in Stone Barn A, indicated by emergence during the dusk surveys and their presence during a pre-dusk inspection, mitigation for these species is required before any works can take place on the site. New nesting and roosting sites should therefore form a part of the proposed development to compensate for loss of the existing sites.

- 6.6 The presence of Barn owls and Kestrels and the loss of nest sites under the proposed works require mitigation in the form of two new roost sites to compensate for loss. It is therefore recommended that at least two dedicated structures, or part of a new built structure, are provisioned for Barn owls and Kestrels breeding away from human disturbance; this could take for example the form of a dedicated barn owl building on the edge of the development, an owl loft inside a new structure, or indoor barn owl box, and prior to finalisation of this mitigation a suitably qualified ecologist should be consulted to approve the design.
- 6.7 In addition, two new nest boxes should be erected within a suitable building or as a last resort on nearby trees; this provision should be in place 30 days prior to the commencement of works to act as roosts during the works until the new dedicated structure are completed but should be permanently retained after the works to provide roosting provision for the male birds.
- 6.8 The level of provision recommended above follows guidance provided in “*Barn Owls and Rural Planning Applications - What needs to happen - A Guide for Planners. Barn Owl Trust.*” Each of the barns currently provides what is considered a roost site. The availability of a roost site near to the nest site is important, as it allows the male bird to roost safely whilst not disturbing the hen bird whilst she broods the eggs. Whilst only one nest box will be used for breeding in one year, the provision of the second box will provide a secluded roost site for the male bird, thus preventing potential human disturbance to any owl attempting to roost in the newly created roost site.
- 6.9 Finally, a precautionary approach is recommended prior to/during all works on site to ensure that no nesting Barn owls or Kestrels are affected by the work schedule, therefore, a pre-works check by a suitably licenced Ecologist shall be undertaken which will be used to conclusively establish absence/presence. If during the pre-works survey visit it is established that Barn Owls or Kestrels are nesting on site, works cannot legally proceed until such time as nesting has ceased, as they are protected from disturbance.

7.0 Indicative Mitigation

- 7.1 From the evidence gained during the dusk surveys, the use of the buildings by bats is considered to be of ‘low’ level significance relatable to Common Pipistrelle bats and their current status (as according to - English Nature: Bat Mitigation Guidelines 2004); the proposed mitigation is proportionate to that use. However, if at any time that assessment is revised to a higher level, then the mitigation will also be accordingly revised.
- 7.2 The following procedures and mitigation recommendations are designed to allow the Local Planning Authority (LPA), in association with their ecological advisers, to determine a Planning Application where a European Protected Species has been identified and will be affected by the work for which the Planning Application seeks consent.

In addition, Local Planning Authorities in accordance with the obligations placed upon them by way of their duties under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579) have to take into consideration the presence of a European Protected species (EPS) before determination of an application where it/they have been identified.

- 7.3 The LPA need to consider the mitigation in relation to the potential success of a Natural England licence application and/or if in their opinion the mitigation is considered as being appropriate, or if it is over and above what is required; if they determine that the mitigation is appropriate then a Planning Condition should be attached requiring the roost provision to be implemented.

If the LPA consider that the mitigation is over what is necessary but require “enhancement” as part of their Local Biodiversity/Net-Gain Planning Policies this should be included in the terms of

Consent. The acting bat ecologist deems the proposed new roost creation as appropriate and not over and above what is required.

- 7.4 **Notwithstanding that Planning Consent is granted or equally if the work is undertaken outside of the planning system, whereby projects that do not require planning consent may affect bats or their roost, including disturbance, it does not absolve the applicant, site owner, developer or any other party involved with the work from ensuring that an application is made for a Natural England development licence, to legally undertake work that will affect bat(s) or their roost(s).**

If work is undertaken without a licence and bat(s) or their roost(s) is/are affected then a breach of current wildlife legislation will occur for which penalties are severe.

- 7.5 Under Regulation 53(1) and 56(3)(a) of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579), a licence is required prior to disturbing bats or destroying/damaging or obstructing any place that is used by bats as a resting place or breeding site. The licence is issued by the EPS Licensing Team of Natural England.
- 7.6 The conversion of the buildings at Coach Road Farm is the key component of the applicant's plans for the site; however, it is acknowledged that the presence of roosting bats needs to be addressed from both a legal and conservation perspective.

The mitigation proposals outlined in this report are seen to be the most productive way forward, should retention not be an option, that will retain long term roosting opportunities for bats.

- 7.7 To ensure that bats are not left without a roost while the work takes place one Schwegler 2F bat box (or suitable equivalents) will be erected on a suitable tree in proximity to the survey area (See Figure 7.1). The box will serve as a receptor bat box for if bat/s have to be captured by hand and translocated to it by the named Ecologist or named agent during the work schedule; the box will be retained permanently following the works.



Figure 7.1 – Proposed location of bat box [📍]

Assigned Ecological Clerk of Works - EcOW

- 7.8 At the pre-commencement stage a suitably qualified Ecologist is to undertake an induction 'toolbox talk' on possible bat presence and present/discuss document features taken from the license i.e. License, Method Statement, Mitigation Figures and Work Schedule to be kept on site for the duration of the work.

Prior to any work being undertaken the presence/absence bats as far as is possible will be established by undertaking detailed investigation of the areas at which bats have been observed using the building i.e., the west gable elevation apex. The ecologist will supervise careful dismantling of all places that will be removed as part of the proposed work which have been identified as offering roost access or roost potential at the ecologist discretion. In addition, wherever opportunities for bats exist in other parts of the building the supervised dismantling will extend to these areas with strategies for safely removing bat(s), as long as a maternity colony is considered not to have taken up occupancy of the building. All dismantling of roost features will be undertaken during favourable weather conditions.

An increase in external lighting is expected during the conversion; should additional lighting be installed it must be directed away from any bat roost mitigation, flight paths and foraging areas.

Mitigation proposed is subject to the approval of the Natural England EPS team; all proposed roost provisions outlined hereafter will be dedicated for bats and permanent.

7.9 Work undertaken by the Ecologist

Capture/Exclusion: Once an EPSML licence is in place the contractor will provide a safe means of access to allow the ecologist to investigate the confirmed roost area for bat presence and supervise the careful dismantling of features that are or could be used by bats.

In addition, wherever opportunities for bats exist in other parts of the building the supervised dismantling will extend to these areas at the discretion of the ecologist in attendance. In the event of bat(s) being present, it/they will be removed, placed in a secure box with soft tissue and immediately transferred into a receptor bat box that will have previously been erected on a tree nearby as indicated in Figure 7.1. Once it has been established by the ecologist that bat(s) are absent the works will continue to completion.

In the unlikely event that bats are found outside of supervision time, then as legal requirement and conditions of the granted licence work will immediately cease and the ecologist contacted for further advice; contractors must not touch, handle or in any way cause bats to move.

7.10 Work undertaken by the Contractor

A number of viable ingress points and roosting opportunities were identified at all of the buildings at Coach Road Farm, primarily being the lifted roof tiles and cavities within the walls. These will likely be lost during the conversion of the buildings; new roost provision is therefore recommended to be built into the design of the converted dwellings at the site (the below mitigation measures are indicative and to be finalised subject to the provision of development plans during the EPSML application):

- New roosting provision will be re-created at the new dwelling to be constructed within the converted footprint of Stone Barn A. Two new bat boxes (see Figure 7.3) will be integrated into the east and west elevations; these boxes should be installed at 3-6m above ground level. Two further access points for bats will be installed at the roof verge/or wall plate (as permitted via the design on the development); the access points will permit ingress to areas of underfelt to be instated below the roof cover for bats. The access points are to be instated on the north and south facing elevations, the gaps will be 25mm long by 50mm wide; to create the access point/s plastic pipes will/can be used initially, as illustrated below, which will be removed once the verge/wall plate has been rendered and roofing slates or tiles fitted. The access points can be covered over with fascia/barge boards if necessary, though it must be ensured that bats can freely access the gaps (see Figure 7.5).
- New roosting provision will be re-created at the new dwelling to be constructed within the footprint of Stone Barn B. A new bat box (see Figure 7.3); this box should be installed at 3-6m above ground level



Key	
	Integral Bat Box
	Roof verge ingress points

Figure 7.2 - Proposed location of new roost provisions (Google Earth, 2022)



Figure 7.3 – The Integral Bat Box (www.birdbrickhouses.co.uk/brick-nesting-boxes/bat-box/) creates an inconspicuous roosting opportunity within a brick wall, and is incorporated in the same way; in this case the box should be installed within the northern and southern walls of the proposed new dwelling to replace B2



Figure 7.4 – A traditional Bitumen 1F underfelt is to be instated immediately beneath ridge tiles. Breathable roofing membrane (BRM) can cause significant problems where bats are in contact with it, whereby their fine claws become entangled within the fibres of the membrane, entrapping and killing bats

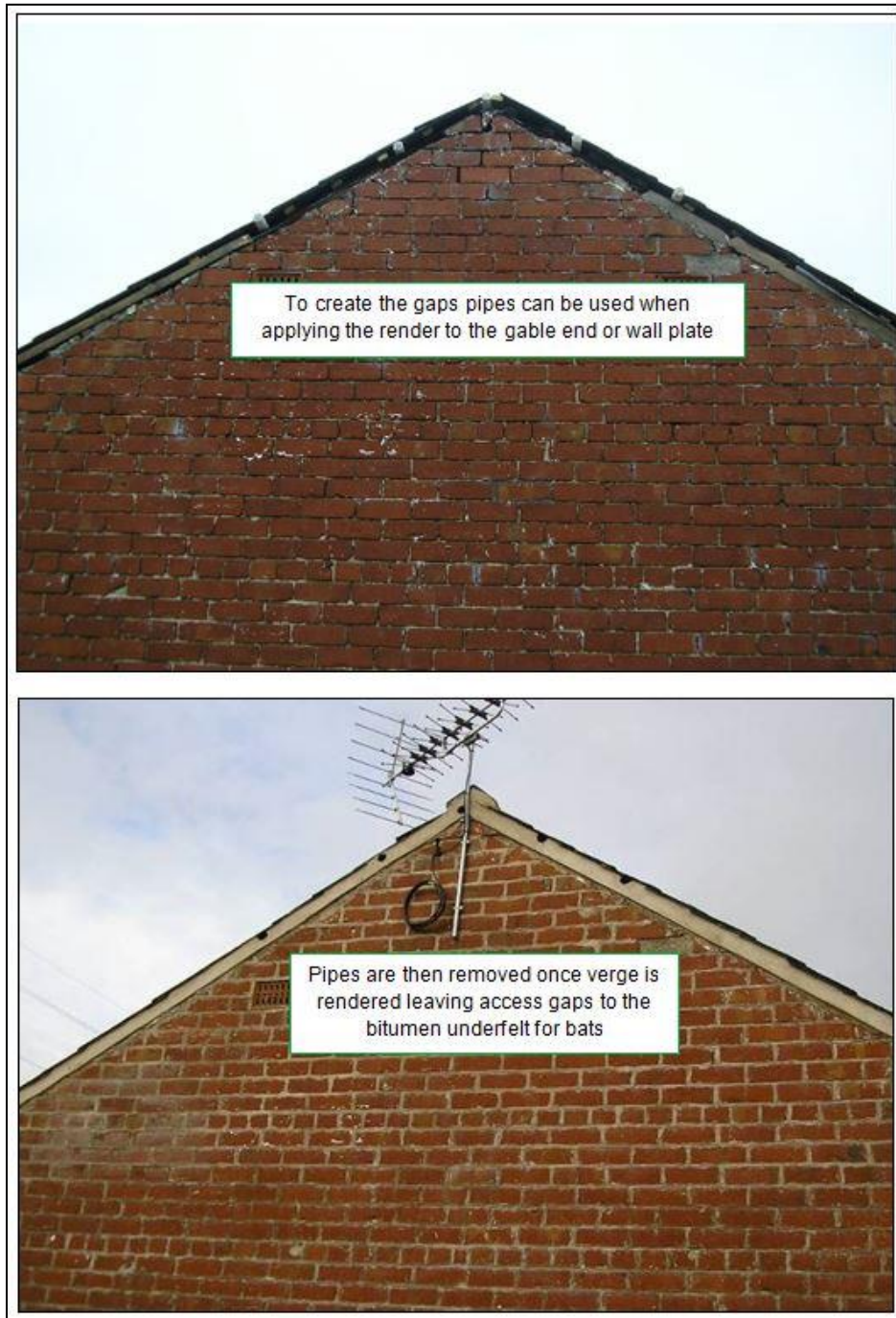


Figure 7.5 – *New roost provision methodology for use on the northern and southern elevations of the converted Stone Barn A*

8.0 References

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Appendix I: *Preliminary Roost Assessment* (ADAS, April 2022)