David Leach Ecology Ltd

Ecological Consultants

Merrow House

80 Monkton Deverill

Warminster

Wiltshire

Phase 2 bat surveys.

July 2023

Report compiled by D. V. Leach. M.C.I.E.E.M.

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1.0 Executive Summary

- A Preliminary Bat Roost Assessment by Seasons Ecology in 2022 concluded that the building has **a confirmed roost of serotine bats**.
- David Leach Ecology Ltd. was commissioned to carry out emergence/re-entry surveys on the property to accompany an application for a large rear extension that will tie into the existing roof and involve demolition of a single storey kitchen area at the rear of the house. Solar panels and sun tubes will be fitted on and through the existing roof.
- The site is not situated adjacent to, or within 500m, of any site of statutory conservation designation that will be significantly impacted by the proposed works.
- Following recognised guidelines for a building with a confirmed roost emergence/re-entry surveys were carried out to determine the number and species of any bat and the type of roost present.
- The surveys concluded **the building holds a maternity roost of serotine bats and day roosts of common pipistrelle bats.**
- **All bats and bat roosts are protected by law and it is an offence to harm or disturb bats or damage or destroy a bat roost without a licence.**
- **As bats or bat roosts will be impacted by the proposed works, a European Protected Species licence (EPS) is required to destroy/disturb the roosts. EPS licenses can be applied for only after full planning permission (or listed building consents) has been granted. Natural England aim to give a decision within 30 working days of registering the application but it can take longer.**
- **If bats, or signs of bats, or other protected species are found during construction, work must stop and David Leach or Natural England contacted who will advise on how to proceed.**
- **The report should be considered valid for 12 months from the date of the last survey.**

2.0 Introduction.

2.1 Background

Client: S. J. Guppy

Property Surveyed: Merrow House,
80 Monkton Deverill
BA12 7EX

Grid reference: ST 85616 37382

Date of Survey: May – July 2023

Lead Surveyor: David Leach BSc. (Hon), CBiol., M.R.S.B., M.C.I.E.E.M.
(Natural England WML CL18 registered bat worker).

2.2.1 Aims of the Survey.

- A Preliminary Bat Roost Assessment by Seasons Ecology in 2022 concluded that the building holds a day roost of serotine bats.
- Further was commissioned to assess the number and species of bats using the building and to confirm the type of roost present. to accompany a planning application for a large rear extension that will tie into the existing roof and involve demolition of a single storey kitchen area at the rear of the house. Solar panels and sun tubes will be fitted on and through the existing roof.

3.0 Methodology

3.1 Activity Surveys

- Emergence and re-entry activity surveys were conducted following guidelines set out in the BCT Bat Surveys for Professional Ecologists Good Practice Guidelines 3rd edn. Collins. J (2016) and the JNCC Bat Workers' Manual (Mitchell-Jones A. J).
- The activity surveys were conducted by M. Haines, K. Hillam and R. Iacoban who are experienced in activity surveys using bat detectors.
- Surveyors were positioned around the buildings to give full coverage of all aspects of the roof and potential access points.
- Surveyors used Elekon Batlogger M and EMT Pro bat detectors and all recordings were analysed using BatSound, BatExplorer or Kaleidoscope software.
- Canon XA11, XA30, rayTEC VAR2-i8-1 illuminator night vision equipment was used in the surveys.

This report was written by David Leach an experienced ecological surveyor who is a Natural England WML-CL8 & WML-CL21 registered bat worker, a full member of the Chartered Institute of Ecology and Environmental Management and a Chartered Biologist.

4.0 Results.

4.1 Activity Surveys.

Following recognised and recent guidelines for a building with a confirmed roost, three dusk surveys were undertaken within the optimal survey period in 2023.

Table 1. Survey weather conditions

Date	18th May 2023	1st June 2023	7th July 2023
Sunset	20:57	21:14	21:28
Sunrise	-	-	-
Start Time	20:42	21:00	21:05
End Time	22:27	22:44	22:50
Start	17°C	14°C	18°C
End Temperature	12°C	10°C	16°C
Cloud (1-8)	7	Hazy	4
Wind (1/12)	0	1	1
Precipitation	0	0	0

Dusk emergence survey – 18th May 2023

- Common and soprano pipistrelle, myotis and serotine bats were seen or recorded foraging or commuting during the survey.
- Between 21:22 and 21:28 24 serotine bats were seen emerging from a central gap in the south east gable of the building.
- 21:16 a common pipistrelle bat appeared to emerge from the south east gable of the building.
- 21:20 & 21:39 two common pipistrelle bats appeared to emerge from around the garage area.
- A long-eared bat was seen foraging at the south east side of the house around 22:06

Dusk emergence survey – 1st June 2023

- Common and soprano pipistrelle, noctule, myotis and serotine bats were seen or recorded foraging or commuting during the survey.
- Between 21:31 and 21:46, three common pipistrelle bats emerged from the house to the south west.
- 21:40 a common pipistrelle bat emerged from the soffit near the kitchen window.

Dusk emergence survey – 23rd June 2023

- Common and soprano pipistrelle and noctule bats were seen or recorded foraging or commuting during the survey.
- 21:44 at least eight serotine bats were seen emerging from a central gap in the south east gable of the building.
- Between 21:247 and 21:54 15 serotine bats were seen emerging from a central gap in the north-west gable of the building.
- 20:22 two serotine bats were seen emerging from a central gap in the north-west gable of the building.

5.0 Conclusions.

5.1 Site assessment.

- The house has a confirmed serotine bat maternity roost and day roosts of low numbers of common pipistrelle bats that will be affected by the proposed works.
- The proposed extension and solar panel, sunlight installation works will result in the destruction of, or damage/disturbance to, a bat roost which is an offence under current legislation. Work to destroy a bat roost or disturb bats can be conducted under a European Protected Species Licence issued by Natural England.
    - All bats and bat roosts are protected by law. It is an offence to:
        - Intentionally or recklessly kill or injure or take any bat.
        - Intentionally or recklessly damage or destroy any bat roost and obstruct access to that roost.
        - Intentionally or recklessly disturb any bat using a structure as a roost.
- **As the proposed works will result in the destruction/disturbance of a bat roost a European Protected Species (EPS) Mitigation Licence is required to damage or destroy a bat roost or disturb bats.**
- **EPS licenses can be applied for only after all necessary permissions or listed building consents have been granted.**
- Natural England aim to give a decision within 30 working days once the application has been registered but it may take longer.

5.2 Impact Assessment

Potential Impacts of Development on Bats

Short-term Impacts: Noise, Dust and Vibration During Construction Phase

Potential indirect impacts on bats during the construction phase include noise, dust and vibration disturbance or obstruction of access points due to the possible installation of scaffolding, particularly if it is combined with netting, sheeting or boarding.

Long-term Impacts: Roost Loss and Modification

In the absence of mitigation, the works would lead to the destruction/disturbance of roosting areas and access points used as maternity roosts by serotine bats and day roosts of common pipistrelle bats.

Long-term Impacts: Increased Levels of Lighting

Any artificial lighting used after the development from both external lighting sources and light spill via windows has the potential to disturb bats roosting within the building and have a detrimental effect on bats foraging and commuting through the area if the light spill is not controlled.

Potential impacts to roosts can include:

- Delayed emergence time (Downs et al. 2003), which can impact on the amount of time to hunt for food (greatest insect activity is around dusk); and
- Bats abandoning or even become entombed within the roost (Packman et al. 2015).

Potential impacts of lighting commuting routes or feeding grounds can include:

- Bats abandoning certain feeding areas by creating a barrier to movement along the commuting route (Stone et al. 2013).
- Attracting insects to be attracted to certain types of light (with UV content), providing a feeding advantage for light opportunistic bats (such as the faster flying *Pipistrellus* species), as well as drawing insects from adjacent areas, so that light-sensitive species have fewer insects to feed on, creating a 'vacuum effect'; and
- Reducing juvenile growth rates reducing the chances of survival (Duvergé et al. 2000).

A sensitive lighting strategy must be formulated and incorporated into the architectural plans, as detailed in Section 5.5.

Summary of Impacts and Predicted and Residual Impact of the Works on Bats

The development proposals (without mitigation and compensation) would result in the permanent loss of a bat roosts including a serotine maternity roost and day roosts of common pipistrelle bats.

Suitable avoidance, mitigation compensation and enhancement measures are described in Section 5.5 to minimise and avoid impacts mentioned above and ensure that residual bat roosting opportunities are broadly equivalent to that currently present. The conservation status of bats is predicted to be maintained or enhanced after completion of the development.

- No signs of other protected species were found on site or adjacent to the site.
- The proposals are unlikely to affect any other protected species or habitats.

5.3 Limitations of the survey.

- A survey of this type only provides a snapshot of what was found at the time of the survey. The absence of protected species on the day does not mean there may not be protected

species on the site in the future.

- **If bats, or signs of bats, or other protected species are found during construction, work must stop and David Leach or Natural England contacted who will advise on how to proceed.**
- **The report should be considered valid for 12 months from the date of the last survey.**

5.4 Legislation.

5.4.1 Bats.

Under the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CroW) Act 2000 and under EU law by the Conservation of Habitats and Species Regulations 2010 (commonly referred to as the Habitats Regulations) all bats have legal protection. In addition any structure which shows signs of use by bats either currently or in the past, for shelter or protection, is classed as a bat roost and both the roost and any bats using it are protected by law which makes it an offence to:

- Intentionally or recklessly kill or injure or take any bat.
- Intentionally or recklessly damage or destroy any bat roost and obstruct access to that roost.
- Intentionally or recklessly disturb any bat using a structure as a roost.

Protection is also afforded to bats under the Conservation (Natural Habitats & c.) Regulations 1994 (the Habitats Regulations) Amended 2007

Annex IV lists all bats

Regulation 39 makes it an offence to:

- Deliberately kill or capture a bat.
- Deliberately disturb a bat.
- Damage or destroy a resting place or breeding site of any bat.

5.4.2 Where a development is proposed within the vicinity (usually 4km) of a Special Area of Conservation (SAC) that has been designated for bats, the developer has an obligation to assess the potential impact of the development on the SAC. Should unacceptable detrimental impacts on the SAC that cannot be offset by appropriate mitigation be likely then it is conceivable that planning permission may not be granted.

5.4.3 Where works will affect a bat roost, a European Protected Species licence is likely to be required to undertake any works lawfully. To inform the licence application, detailed surveys would need to establish the species, type and size of roost to ensure appropriate

mitigation measures. Licence applications will only be considered when accompanied by full planning permission.

5.4.4 In determining whether to grant a licence Natural England must apply the requirements of Regulation 535 of the Regulations and in particular the three tests set out in sub-paragraphs (2)(e), (9)(a) and (9)(b).

1) Regulation 53(2) (e) states: a licence can be granted for the purposes of "preserving public health or public safety or other imperative reasons of overriding public including those of a social or economic nature and beneficial consequences of primary importance for the environment".

2) Regulation 53(9) (a) states: the appropriate authority shall not grant a licence unless they are satisfied "that there is no satisfactory alternative".

3) Regulation 53(9) (b) states: the appropriate authority shall not grant a licence unless they are satisfied "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range."

5.5 Bat mitigation.

5.5.1 **No works on the building that will affect the roof or roof void or bat roost or access points can be carried out until a European protected species licence has been issued and then only in the presence of the licensed ecologist.**

5.5.2 **Any work affecting the main house roof or roof void will take place during the months of March to April and October to November to avoid the core hibernation period of December to February and the maternity season May to September. Works to demolish the single storey kitchen area can be undertaken between March and November under the mitigation licence as it will not affect a maternity roost.**

5.5.3 **The landowner will make the contractors aware of bats and bat roosts in the building and ensure they have read and understood the mitigation plan with respect to not undertaking any work to the roof or roost areas highlighted in the report without a licensed ecologist being present.**

5.5.4 Before works to the roost areas start, a suitable wooodcrete or Vincent Pro bat box (as agreed with the named ecologist), one for each species found, will be erected on a tree or building

on site to provide a roost area for bats until the work is completed and to have a safe location to relocate any bats found. This will remain in place and not be moved unless checked by a licensed bat worker beforehand. If it is found the box has been occupied by bats a protected species licence will be required before the box can be moved.

5.5.5 A pre-works survey of the building will be undertaken by the named ecologist to check for the presence of bats. It is anticipated that individual bats may be present due to timing of the works and any found will be moved individually using gloves and cloth bags and relocated to a bat box of the site. Once the building is deemed clear of bats then roof deconstruction works will proceed using a ‘soft’ approach.

5.5.6 The soft stripping of the roof will be undertaken in dry, mild weather conditions under the supervision of the named consultant.

5.5.7 Prior to soft deconstruction works on the roof of the building commencing, a demonstration will be given to all site operatives and contractors to explain bat biology, their responsibilities and the required work methods. The site operatives will be informed that they need to be continually aware of potential bat presence during the work. In addition, all contractors on site will be made aware of their responsibilities under the Wildlife and Countryside Act 1981 (as amended) and will be required to adhere to advice given in this method statement.

5.5.8 Potential access points and roost areas identified during the surveys will be dismantled by hand under a watching brief by the named ecologist. The external soft strip will only be undertaken in dry, mild conditions to prevent any bats which are discovered from getting cold and wet.

5.5.9 If, during the remaining works, the building is found to contain solitary bats, work will be halted until the bat(s) vacate the building or until a licensed bat handler removes the bat(s). Once the area is clear of bats then works will proceed. If any bats are discovered, they will be removed by a licensed bat handler using gloves and a cloth bag and relocated to one of the newly erected bat boxes.

5.5.10 Builders and contractors are explicitly forbidden from handling bats.

5.5.11 In the unlikely event that a sick or injured bat is found, it will be carefully placed in a small, ventilated box with a secure lid and with a rough cloth along one side and the bottom. The bat will then be taken to a Local Bat Care worker who will look after it. When the bat is fully recovered, they will arrange for its release at the site when weather conditions are suitable.

5.5.12 As compensation for the loss of the existing roosts and to allow bats to continue to use the site and site enhancement, the following will be implemented.

- An integrated bat tube will be built into the new section of wall on the south-east elevation where it will benefit from sunshine during the day.
- Two ridge tile access points will be created on each of the new extension roofs. These are 20mm x 50mm gaps created within the mortar used to bed down the ridge tiles on the new extension. **A wet ridge system must be used as dry ridge systems are too draughty and not suitable,** (see appendix 5 for locations and appendix 6 for design details).
- **Type 1f bitumen underfelt or water proof and breathable wood fibre boards must be used in all areas where bat have access to as breathable membranes are unsafe for bats and so not suitable. This included the new roofs as they will tie into the existing roof void used by bats**

5.5.13 Extra care will be taken to ensure that external lights are kept to a minimum and will not illuminate bat access points or flight paths around the buildings with bat features or the trees and shrubs on site. A suitable lighting scheme and regime in accordance with Guidance Note 08/18 Bats and Artificial Lighting in the UK. Bats and the built environment series, Bat Conservation Trust (London) & Institution of Lighting Professionals (Rugby) (2018) must be approved by the LPA. This will include:

- Any lights will be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. A shield or hood will be used to control or restrict the area to be lit and limit “light spillage” on the site.
- Security lights will be on motion sensors and on for a maximum of 1 minute.
- Lighting units will be of low intensity - up to 15 watts, and red, amber or warm light with a maximum lighting colour temperature of 2700 K.
- White, blue and green light sources including metal halide, mercury and CDO / CPO Ceramic Outdoor Lamps bulbs have a significant effect on bats and will not be used.

5.5.15 Monitoring is required for maternity roosts in years 2 – 5 after completion of the works to assess the success of the scheme and to inform management or remedial operations. This will be a dusk survey in June/July in years 2 and 4.

5.6 Enhancement.

In accordance with local policies, Section 40 of the Natural Environment and Rural Communities Act 2006 and paragraphs 8, 170 and 175 of the National Planning Policy Framework (2019), measures will be implemented to enhance the biodiversity on site and ensure that there is a net biodiversity gain and no net biodiversity loss in the long term as per Government planning policy. These will include but not be limited to:

- Installing a pair of woodcrete house martin nest cups under the eaves on the north- west elevation of the new extension.

Appendices.

Appendix 1. References

- **Bat Conservation Trust (London) & Institution of Lighting Professionals (Rugby) (2018)** Guidance Note 08/18 Bats and Artificial Lighting in the UK Bats and the built environment series.

- **Collins, J. (Ed.) 2016. Bat Surveys for Professional Ecologists - Good Practice Guidelines: 3rd** *edition.* Bat Conservation Trust, London, United Kingdom.

- **English Nature 2004.** *Bat Mitigation Guidelines.*

- **IEEM 2006**. Guidelines for Ecological Impact Assessment in the United Kingdom (version 7 July 2006), Institute of Ecology and Environmental Management [online]. Available: http://www.ieem.org.uk/ecia/index.html [accessed February 2011].

- **Institute of Lighting Professionals (2012)** Guidance for the reduction of obtrusive light.

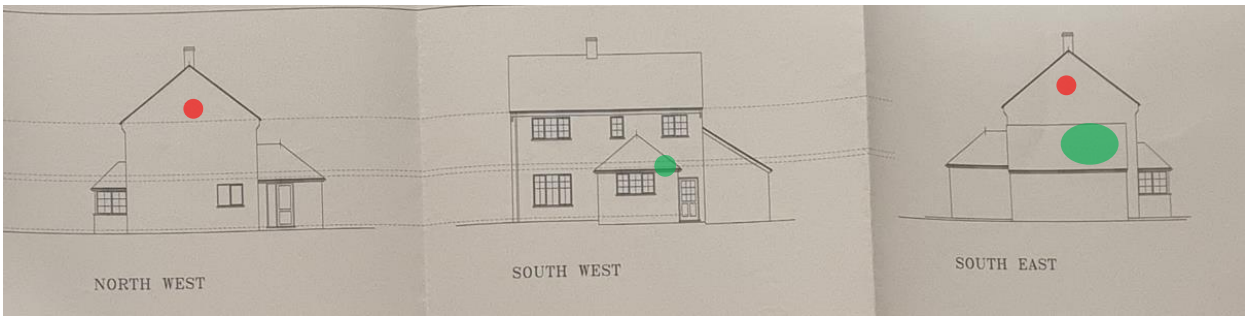
- **JNCC 2004**. *Common Standards Monitoring Guidance for Mammals*. Joint Nature Conservation Committee, Peterborough.

- **Mitchell-Jones A. J. & McLeish, 2004**. *Bat Workers' Manual*. Joint Nature Conservation Committee, Peterborough.

- **Natural England and Countryside Council for Wales, 2007***. Disturbance and protected species: understanding and applying the law in England and Wales. – A view from Natural England and the Countryside Council for Wales.* United Kingdom

- **Stebbings R.E., 1986**. *Which bat is it?* The Mammal Society and the Vincent Wildlife Trust, London.

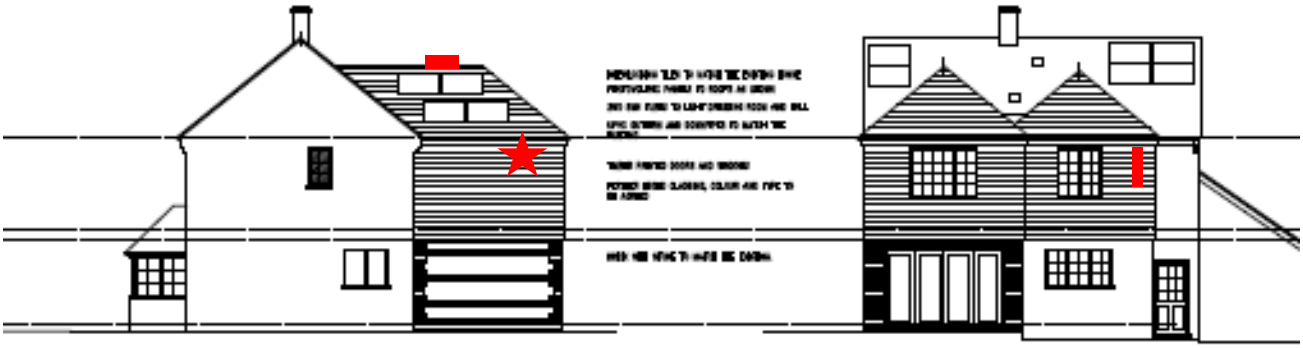
Appendix 2) Access points



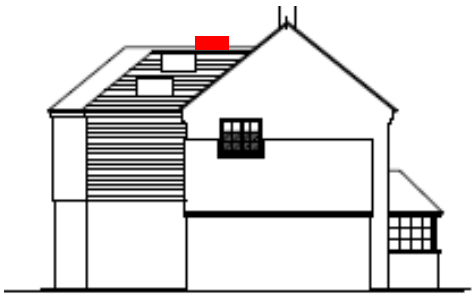
Serotine bat access points

Pipistrelle bat access points

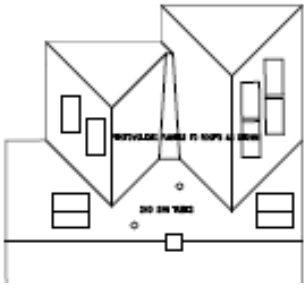
Appendix 3) Compensation and enhancement feature locations.



NORTH WEST SOUTH WEST



SOUTH EAST

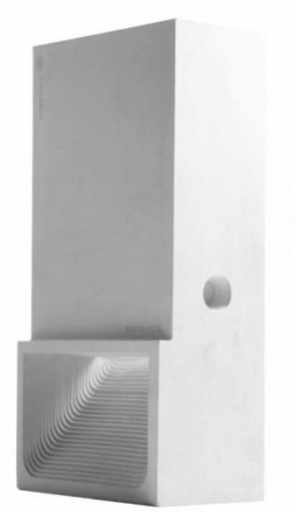


Integrated bat tube

Ridge tile access points

House martin terrace

Appendix 6) Compensation & enhancement feature design.



The Green & Blue Bat Block is designed to create roosting space for bats within the framework of new builds, or to be retrofitted within existing properties. Once installed, the front of the Bat Block is designed to sit flush with the outside bricks of a build, with the entrance slightly protruding. Depending on the position installed, the Bat Block can become either a summer maternity roost (South or West facing) or a winter hibernation roost (North facing).

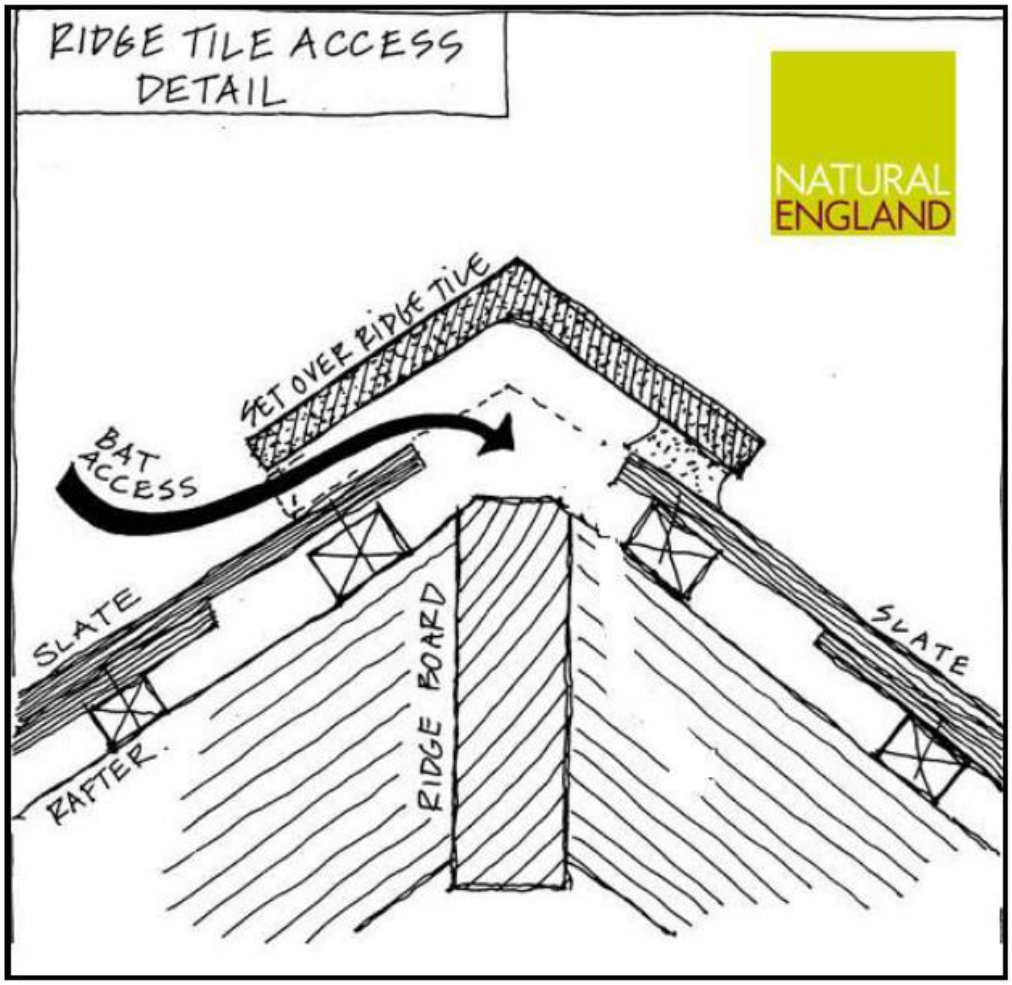
The Bat Block features an internal FSC certified wooden panel, a small entrance space to deter larger birds and predators and a "Bat Ladder" at the base of the box to facilitate bats landing and climbing. The Bat Block can be turned into a colony by knocking out the section on the side and installing Bat Blocks next to each other.

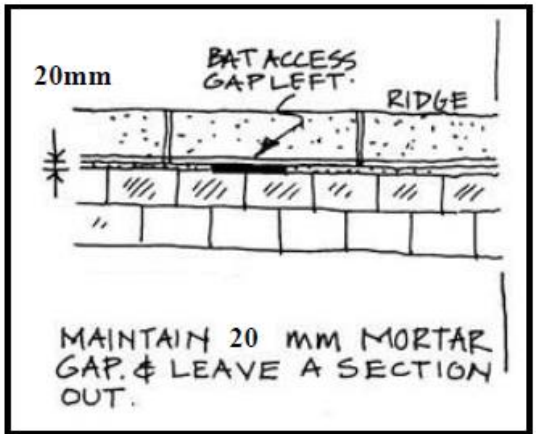
Made from cast concrete using up to 75% waste materials from the Cornish China Clay industry and is standard UK block size.

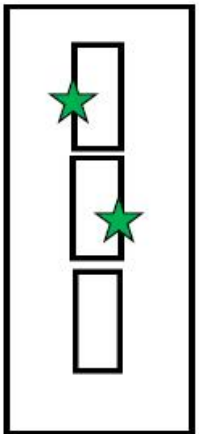
The Bat Block should be positioned at least 4m from ground level, away from artificial light sources and in proximity to vegetation and linear features like hedgerow which bats rely on for navigation and food. If it is on an existing feeding or flight route you are more likely to get occupation. The Bat Block does not require maintenance as the design allows droppings to fall from the entrance.

Specification

Dimensions: 215mm x 440mm x 160mm
Weight: Approx.15 kg
Materials: Cast Concrete and FSC Certified Wood



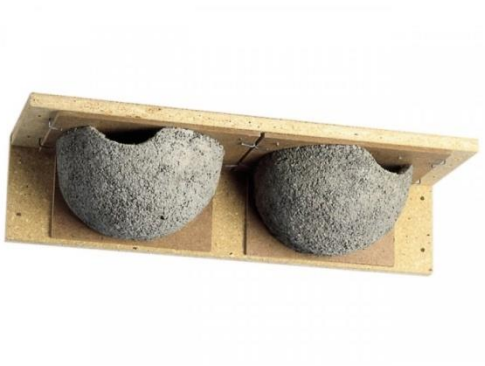




Position of two ridge tile access points facing front and rear

Type 1f bitumen underfelt or water proof and breathable wood fibre boards must be used in all areas where bat have access to as breathable membranes are unsafe for bats and so not suitable.

A wet ridge system must be used as dry ridge systems are too draughty and not suitable.



9A Schwegler House Martin Nest

It is increasingly difficult for Swallows and House Martins to find suitable nest-building and mud they do find, if any, is often poor quality. In addition, the walls of buildings are nowadays often very smooth, so as a result, nests tend to fall down, sometimes with the nestlings inside. In many places, the vibration caused by heavy vehicles shakes the nests loose.

Easily fixed under the eaves on the outside walls of buildings, these nest boxes are perfect for house martins to return to year after year. The bowl-shaped nest is made of air-permeable wood-concrete and a backing board made of exterior grade, formaldehyde-free chipboard to prevent warping.

Double nest: House martins are very sociable and will more readily use nests that are arranged in pairs. They can also be installed in groups to form large colonies. The backing board may be painted to match the building.

Siting: Under eaves on the externals walls of buildings. Install on the sheltered side of the building at a minimum height of 2m above the ground.

These nests can be used for years without cleaning. However, if possible it is recommended to inspect them frequently and to clean them when necessary.

David Leach BSc (Hons) CBiol. MSB MCIEEM. David is a professional ecologist with over forty years' research and fieldwork experience in many aspects of ecology and for the past 12 years in environmental consultancy work.

David is an experienced bat surveyor with competency in activity surveys, bat roost assessments, daytime surveys for bat field signs, assessments of trees as potential bat roosts and the production of reports providing advice on best practice, mitigation and compensation works relating to bats as may be required.

He holds a Natural England licence to disturb bats for the purposes of science and education or conservation and is also a **Registered Consultant** for the Bat Low Impact Class Licence. Registered Consultants are now able to apply to register individual sites to undertake licensable activities under this licence.

David has been involved in obtaining over 160 Protected Species Licenses to permit development works affecting bats and badgers.

David also has experience in surveying for birds, reptiles, great crested newts, barn owls and badgers and carries out extended Phase 1 habitat surveys, BREEAM and Code for Sustainable Homes assessments.



David Leach BSc. (Hons), C.Biol., M.R.S.B., M.C.I.E.E.M.

Disclaimer.

All reasonable effort has been made to provide accurate information at the time of the survey. However weather conditions and the timing of surveys can affect the results. Some species or signs of that species will only be visible at certain times of the year e.g. the nesting season for birds is usually between March and September. The absence of certain species or signs of use at the time of a survey does not mean that they are not present at other times of the year and does not imply that a species might not use the site at some time in the future.

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