Bat survey report

Sheengate Gate House

Clients Name: Mr & Mrs McKittrick
Date of Completion: 09/10/21
Version: 1.0
Principal Author: Edward Clark

Reference Number ECOassistance: 554

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1 Executive Summary

ECOassistance were commissioned to undertake bat emergence and re-entry surveys on the main dwelling house and garage outbuilding at Sheengate Gate House in London. The survey objectives were to determine whether bats of any species were roosting in either building and outline any constraints, mitigation and compensation requirements with regard to various planning applications at the site.

The main findings of the surveys were that:

1. Day roosts of low numbers of widespread species are present within the fabric of the main house; two of these roosts will be directly impacted by the development proposal unless an avoidance methodology is followed. If the avoidance measures set out in this report cannot be followed a low impact class licence will be required to disturb the known bat roosts.
2. Day roosts of low numbers of a widespread species are present within the fabric of the garage. Due to the nature of the works proposed impact to the roost is deemed unavoidable and a low impact class bat licence will be required to carry out the works. Mitigation measures to ensure protected species are not harmed during the works are given in this report.
3. The trees and hedgerows surrounding the site provide cover and connectivity for moderate levels of foraging and commuting. As these areas are therefore also protected, measures to mitigate potential impacts from an increase in artificial lighting at the site are recommended.

Mitigation and compensation measures for all impacts are provided in this report. Enhancement measures to ensure a net gain for bats at the site are also provided.

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2 Introduction

ECOassistance were instructed by Mr & Mrs McKittrick (Hereafter: the client) to undertake bat emergence and re-entry surveys (BERS) on the main house and garage outbuilding at Sheengate Gatehouse, 264 Sheen Lane, Richmond, SW14 8RL (hereafter referred to as: the site).

This survey report will inform a number of planning application at the site including:

- *External alterations to existing building, including demolition of non-original dormers and insertion of new rooflights.*
- *Internal and external alterations to existing building, including demolition of non-original dormers and insertion of rooflights.*
- *Erection of a single-storey extension to west/north-west of existing house, one new-build outbuilding, landscaping and biodiversity enhancements and new boundary wall to street frontages.*
- *Re-tile the roof and areas of vertical tile-hanging following the original form and detailing, with varied natural clay tiles.*

A satellite image of the two survey buildings and the immediate surrounding habitat is shown in Figure 1 below:

Figure 1: Sheengate Gatehouse (B1) and Garage (B2)

2.1 Bat surveys

The surveys were led by Edward Clark and assisted by experienced bat field surveyors Charlie Birch, Jack Clark, Matt Kelk, Mike Rivarno, Joshua Griffiths and Chris Potts. Edward has more than 12 years professional and voluntary experience surveying for bats and has extensive experience in site assessment including ground-based and aerial tree surveys, cave and bridge inspections and is registered to use a Level 2 Class licence (2018-33670-CLS-CLS) with all add-ons.

All native species of bat, their places of rest or shelter and foraging and commuting habitats are protected under both The Conservation of Habitats and Species Regulations 2017 and the 1981 Wildlife & Countryside Act (as amended). The presence of protected species and habitats is a material concern for planning authorities when deliberating over planning applications. For more information on the relevant legislation refer to the appendix of this document.

The key objectives of the survey undertaken was to:

- Assess the presence or likely absence of bat roosts within the site and its local environs.

- Characterise the roost size and type if present.
- Design appropriate levels of avoidance, mitigation, compensation and enhancements for bats at the site.

This report describes the survey findings.

3 Methodology

3.1 Internal inspection

An internal inspection survey visit was carried out on 10/09/21 by Edward Clark and assisted by Charlie Birch, Jack Clark and Matt Kelk. The internal inspection was carried out after a full suite of BERS had been completed.

The internal spaces including accessible loft voids and eaves cupboards were inspected for signs of bat habitation. This included searches for observable field signs including bat droppings, discolouration, urine staining and dead and/or alive bats but was primarily focussed on searching for insect prey feeding remains which might indicate that the site was being used for night time feeding. The rationale being that night roosts or feeding perches can be used throughout the night and would not necessarily have been observable during the BERS.

3.1.1 Internal inspection equipment

A Clulite CB2-L2 clubman torch was used to identify PRF and evidence of bat signs during the internal search. Accessible cavities, crevices and recesses were inspected with LED survey mirrors and/or a Dewalt DCT410 endoscope. Other survey equipment included an android tablet device for making notes and taking photos, a magnification lens, survey sample tubes and a telescopic survey ladder.

3.2 BERS

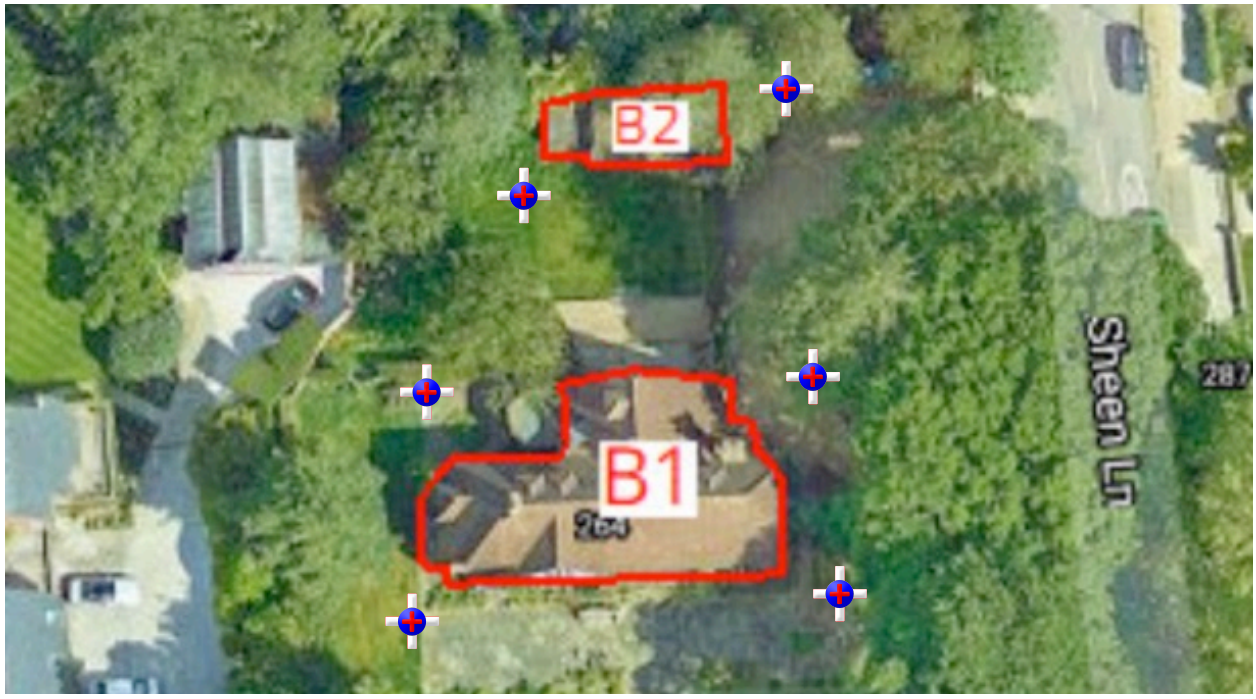
In total three BERS were undertaken: two emergence surveys (hereafter: dusk surveys) and one re-entry survey (hereafter: dawn survey).

The dusk surveys were carried out in accordance with good practice guidance (Collins, 2016) from 15 minutes before sunset until 90 minutes afterwards and in favourable weather conditions. The dawn survey was carried out on in accordance with good practice guidance (Collins, 2016) from 90 minutes before sunrise until 15 minutes afterwards and in favourable weather conditions.

The initial dusk survey was carried out on 17/06/21; this was followed up by a dawn survey on 14/07/21 with a final dusk survey undertaken on 02/09/21. The surveys were carried out using a Batlogger M and Batlogger A+ bat detector, two EM touch; two EM touch 2 and an EM touch 2 pro bat detectors (ultrasonic modules) with android or ipad tablets.

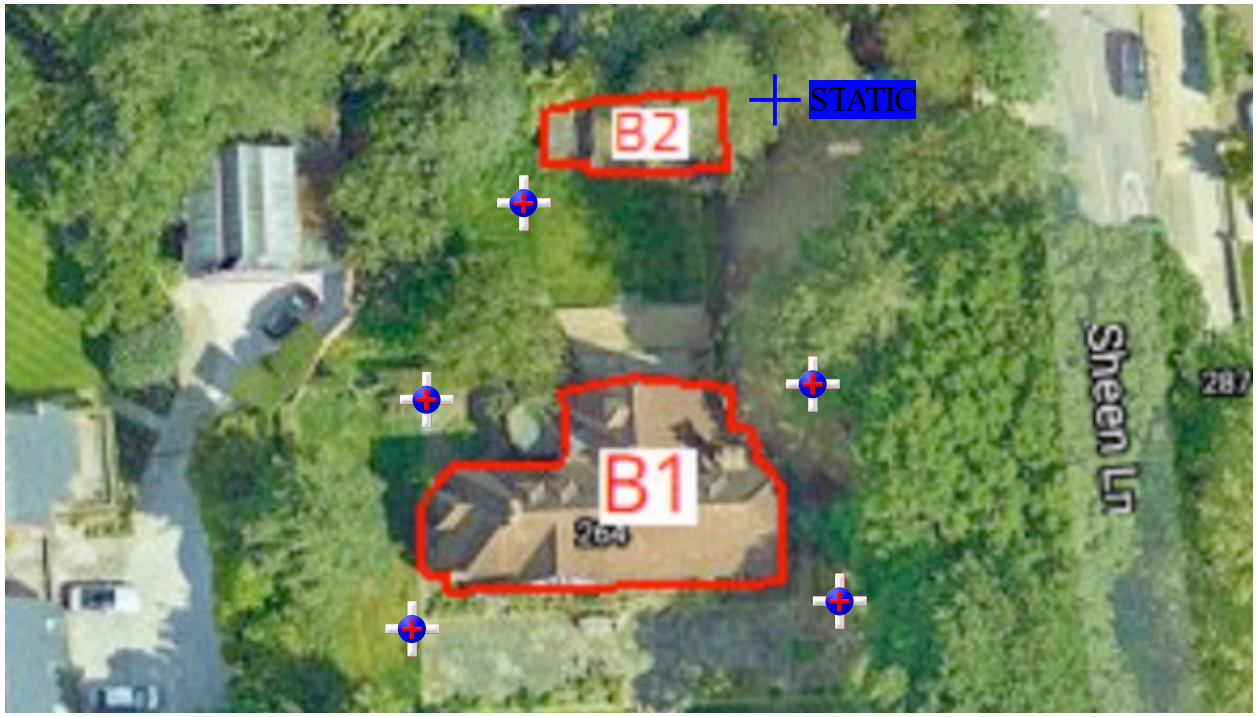
Surveyors were positioned to ensure as many aspects of the building as possible were visible and that bats entering or exiting the structure would be readily observed. Survey design was iterative, with each survey informed by the previous one; so positions were changed to counteract limitations encountered or to more closely observe areas of interest. The survey positions for each survey are shown in figures 3 & 4 below.

Figure 2: Surveyor positions survey 1 & 3 (white, red and blue cross) indicated



The second survey was carried out with five surveyors plus a static Batlogger A+ detector as one of the surveyors was forced to witdraw immediately prior to the survey. The location of the static bat detector is shown in Figure 3 below.

Figure 3: Surveyor positions survey 2 (white, red and blue cross) indicated



3.2.1 Other survey equipment

Each surveyor was provided with a Motorola Talkabout walkie talkie to discuss activity and to enable surveyors to collaborate in real time to ensure emergences from or returns to the structure were not missed.

The location, appearance, flight characteristics and times of bat sightings or activity were recorded on ECOassistance BERS results forms to provide information on how bats are using the site. If the surveyors were unsure whether they had witnessed an emergence; and it could not be corroborated or ruled out by the surveyor on the opposite side of the structure, the observation was recorded as a 'possible emergence' requiring further investigation. Surveyors unsure of which species had been recorded would add a '?' next to the species record to show that further sound analysis was required. The survey results forms are presented in Appendix 2.

Bat calls were automatically recorded by the detectors to enable sound analysis where needed and post-operative sound analysis was carried out by Edward Clark using Bat explorer and kaleidoscope software.

3.2.2 Impact assessment

The CIEEM bat mitigation guidelines (beta version 1.0) assessment criteria, BCT Good Practice Guidelines and professional judgement were used to assign a level of importance to bat roosts and assess the importance of assemblages and commuting and foraging habitats in order to:

- predict the level of impact on bats
- determine suitable and proportionate avoidance, mitigation and enhancement schemes.

4 Constraints and Limitations

Surveys such as this provide a snapshot of activity and in conjunction with the internal inspection are designed to determine presence or likely absence of roosting bats. The BERS were carried out within the main activity season and the findings are in line with those of the PRA. Whilst the survey effort is therefore not exhaustive it fulfils the brief and follows guidelines which the planning authority adheres to. This in itself provides a limitation: it is possible that potential roosting spaces might be used at other times in the season, for example as a transitional roost in spring, and may potentially be used in autumn months (as a transitional and / or mating roost) or for hibernation when bats are least active and most vulnerable. Care should therefore be taken at all times during works in all areas and if bats are encountered somewhere unexpected all work must stop and a qualified bat ecologist contacted for advice.

Long eared bats of the Plecotinae often do not echolocate, instead making use of their relatively good eyesight to navigate. As a result, long eared bats more than any other UK species are likely to be under-recorded during activity or emergence and re-entry surveys.

It is difficult to identify some species of bats from recordings alone. This is particularly true when trying to differentiate between the two UK resident long eared *plecotus spp*. and myotis *Myotis spp*. bats.

- The long eared bats observed during this survey are presumed to be brown long eared bat *Plecotus auritus* due to the location of the Site and the known distribution of both grey and brown long eared bats. Grey long eared bats are not known to occur in London.
- An unidentified myotis bat *Myotis sp*. was recorded during the surveys. Further survey effort to identify the bat will not be undertaken as knowing the exact species will not change the recommendations in this report or the levels of mitigation and enhancement which are required. Therefore, the predicted cost in time and effort to determine the species is not proportionate to the value of having such data (in relation to this planning application).

One of the surveyors had to pull out of the second survey at the last minute due to illness (positive coronavirus test). There was not enough time to organise a replacement surveyor so a static detector was deployed in his place. The position chosen was one that could be partially covered by another surveyor (to the south) so possible emergences (if a bat appeared from the north that other surveyors had not observed) could be recorded and followed-up as required.

5 Results

5.1 Internal inspection

No bat field signs were encountered. The internal ceilings in the upper rooms were vaulted meaning there was no void between ceiling and roof covering for open dwelling species. There were voids within eaves cupboards, only some of which were accessible, however the areas that were accessed contained no evidence of use by bats.

5.2 BERS

During the survey five species of bat were recording flying over or near to the site. These were: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long eared bat *Plecotus auritus*, common noctule *Nyctalus noctula* and at least one species of unidentified myotis *Myotis sp*.

Small numbers of bat individuals were found to be roosting within the fabric of both B1 and B2. These included the following:

5.2.1 B1

- A day roost of low numbers of common pipistrelle emerged from the eaves of the easternmost part of the roof as indicated in Figure 4 below. The peak count was one individual observed emerging on 11/08/21.

Figure 4: Bat emergence from eastern part of B1

- A day roost of low numbers of soprano pipistrelle emerged from the north facing eaves of the northernmost part of the roof as indicated in Figure 5 below. The peak count was one individual observed emerging on 11/08/21 and 29/08/21.

Figure 5: Bat emergence from northern end of B1

5.2.2 B2

- A day roost of low numbers of soprano pipistrelle emerged from a gap beneath the flat roof of B2 as shown in Figure 6 below on 11/08/21 and 29/08/21.

Figure 6: Emergence point B2

5.2.3 Surrounding Habitats

- Bats were observed foraging all around the site and utilising the tree lines and hedgerows for foraging and commuting. This included BLE and myotis which are considered to be light averse species.

6 Conclusion and Recommendations

The survey data indicate that:

- The north facing gable of B1 contains a day roost of low numbers of soprano pipistrelle (single individual).
- The east facing gable of B1 contains a day roost of low numbers of common pipistrelle (single individual).
- The flat roof of B2 contains a day roost of low numbers of soprano pipistrelle (three individuals).
- Light-averse species are present and using the surrounding habitat for foraging and commuting.

6.1 Roost significance B1

Soprano pipistrelle and common pipistrelle are both considered to be widespread species and day roosts of low numbers of individuals are deemed to be of local importance only.

In order for works to be carried out at the site, any impacts to the bat species that are present must be reduced to a non-significant level. Where this cannot be achieved, appropriate compensation must be offered.

Potential impacts on the day roosts that are present are identified in table 3 below:

Roost to be impacted	Value of roost	Impact	Likely significance
Day roost of low number of soprano pipistrelle bats	Local	Concrete roof tiles are to be removed and replaced with clay roof tiles. Has the potential to uncover and disturb roosting bats.	Negligible/local; unlikely to be the only day roost used
Day roost of low number of common pipistrelle bats	Local	Concrete roof tiles are to be removed and replaced with clay roof tiles. Has the potential to uncover and disturb roosting bats.	Negligible/local; unlikely to be the only day roost used

Despite the low significance in terms of demography of the bats that are present, the roost is still protected by law and works to impact it must be avoided if possible; if not works must be licensed by Natural England (NE).

6.1.1 Avoidance methodology B1

It is recommended that for B1 an avoidance methodology should be followed.

NE advocates the use of good practice and avoidance measures to minimise the impact of a proposed activity on wildlife, and in particular European Protected Species (EPS) to avoid committing offences. Licensing should be seen as the last resort where all other alternative ways of avoiding impacts on the species have been discounted. Alongside this, the CIEEM bat mitigation guidelines state: re-roofing while bats are absent, using traditional materials and reinstating access points, could be undertaken without a licence.

Soprano pipistrelle and common pipistrelle day roosts of small numbers of individuals are used seasonally and are unlikely to be occupied outside of the main activity season. Timing the works to avoid periods when roosts are occupied will only be sufficient to avoid the need for a licence if the functionality of the roost is maintained when the bats return. A licence is unlikely to be needed if the following measures are adhered to:

- the existing materials are replaced like-for-like.
    1. Only bitumen roofing felt type 1F will be used. Modern breathable membranes, even those claiming to be safe are not and must not be used.
    2. The thick concrete tiles must be replaced with clay tiles and not with roofing slate or other roofing material which due to being thinner would have significantly different thermo value.
- the same access points are retained and there are no structural changes made to the roost;

1. Ecological supervision will be required during roofing works on the northern and western roof gables to ensure access points are retained.

- the work is done whilst bats are absent and is completed before they would normally return to the roost.
    1. Pre-works bat detector survey – to be conducted immediately in advance of the proposed start of works, to re-confirm the likely absence of roosting bats from the sections of roof within the buffer zones (shown in Figure 7 below)
    2. Tiles in the buffer zones to be removed by hand under the supervision of a licensed bat worker.
    3. Works inside the buffer zone only to be undertaken in Autumn and Spring (without a licence). Specifically, and for reasons of clarity it is recommended that these works be undertaken between September 20th – November 30th and/or March 1st – May 1st.

Much of the proposed works (on the entire property) are unlikely to directly impact the roosts. The buffer zones shown in Figure 5 below are given to allow works to be carried out in other areas of the site at other times to allow some flexibility of working schedules.

Figure 7: buffer zones indicating where works are time-restricted to ensure bat roost is not adversely impacted

6.1.2 Alternative methodology under licence

If impact cannot be avoided following the methodology set out above then a licence will be needed in order to impact a roost. A bat low impact class licence (BLICL) to impact the roost will be suitable for the type of bat roost present or alternatively a mitigation licence should be sought from Natural England.

- A bat low impact class licence to impact the roost is suitable or a European protected species licence (EPSL) to impact or destroy the bat roosts must be granted by NE prior to any works which might affect them are started.
- An EPSL application can only be made once planning permission has been granted.

In terms of mitigation and compensation requirements for impacting a day roost of soprano pipstrelle individuals and a day roost of common pipistrelle individuals under licence, there is flexibility over provision of bat boxes and no conditions about timing or monitoring (English Nature: Bat Mitigation guidelines). The following mitigation measures are likely to be conditions of any mitigation licence.

- Bat boxes should be provided as mitigation prior to destruction or modification of the roost.
- Bitumen type 1F roofing felt must be used where bats are known to be roosting.

6.2 Development proposal with regards to known roosts B2

Due to the nature of the development proposal, the day roosts and access points contained within the timber and bitumen felt flat roof will be directly impacted and lost as a result of the development.

6.2.1 Avoidance/mitigation/compensation B2

Potential impacts on the day roosts that are present cannot be avoided. In situations where the potential impact relates to total loss of a feature such as this (or the modification of such a feature to an extent that it will no longer have the same function) then the significance of the impact is deemed to be the same as the valuation of the feature; in this case: Local as shown in Table 3 below.

Table 3: assessment of impacts on day roost

Roost to be impacted	Value of roost	Impact	Likely significance
Day roost of low numbers of soprano pipistrelle.	Local	Permanent. Area containing known roosts is to be demolished therefore roosts will be lost.	Negligible/local; unlikely to be the only day roost used

Despite the low significance in terms of demography of the bats that are present, the roost is protected by law and works to impact it must be licensed by Natural England with adequate compensation offered.

6.2.2 Mitigation

Works to impact the roost must be supervised by a licensed bat worker as well as under a site specific derogation licence or BLICL. Structural materials around the roosting space will be removed by hand to reduce the likelihood of bats being injured and if found will be removed by the licensed bat worker and placed carefully into one of the bat boxes already provided.

6.2.3 Licensing and compensation

A licence is required and must be granted prior to works in order to impact a known roost(s). In order for a licence to be granted the application must satisfy the following three tests:

1. the activity must be for a certain purpose - for example, for scientific research or in the public interest.
2. there must be no satisfactory alternative that will cause less harm to the species.
3. the activity must not harm the long-term conservation status of the species - you may need to create new habitats to offset any damage.

The client is likely to be successful when applying for a derogation licence because:

1. The roof is in a state of complete disrepair rendering the inside space unusable.
2. It is not possible to retain the roosting feature where this part of the building is to be demolished and a boundary wall reinstated. This will materially alter the roosting space.
3. The roost is of local importance only and the impact is considered: local/negligible as it is unlikely to be the only day roost used by the animal. Compensation by way of bat boxes and enhancements/habitat improvements will need to be included in the development plan.

A BLICL to impact the roost will be suitable for the type of bat roosts present or alternatively a mitigation licence will need to be sought from NE.

- A BLICL to impact the roost or a European protected species licence (EPSL) to impact the bat roosts must be granted by NE prior to any works which might affect them are started.
- An EPSL or BLICL application can only be made once planning permission has been granted.

Mitigation and compensation requirements for impacting a day roost of low numbers of common pipistrelle individuals:

- there is flexibility over provision of bat boxes and no conditions about timing or monitoring (English Nature: Bat Mitigation guidelines).

The following mitigation measures are likely to be conditions of any mitigation licence.

- Bat boxes should be provided as mitigation prior to destruction or modification of any roost. These will serve as an interim roost during the works.
- Soft demolition/dismantling by hand will be supervised by a licensed bat worker following a methodology set out in the licence application to be agreed by NE.

- There is unlikely to be any condition over timing of works.

- A bat roosting space should be reinstated within the same area by installing a wall mounted bat box for soprano pipistrelle as close as possible to the current roosting space after work is completed. A suitable bat box design is provided in the appendix.

6.3 Surrounding habitats

Disturbance from excess lighting must be avoided both during construction and post completion. The foraging and commuting habitats which surround the site are protected by law.

- As light-averse species (brown long eared and myotis bat) were recorded during the survey any new lighting at the site should avoid lighting any key habitats and features. This includes the hedgerows and mature trees surrounding the site and any bat boxes.

- New external lighting should be restricted to directional lighting including only downward facing lighting and low level downlights such as downward facing bollard lighting to avoid excessive light spill. It is also recommended that as much of the new lighting as is practicable be activated by motion sensors to keep artificial lighting to a minimum.

- During construction, external works should not be carried out after dusk and the construction site should not be lit after dark.

6.4 Enhancements

As well as mitigating negative impacts the application must also be demonstrated to result in a net gain for the bat species present to be in line with National Planning Policy.

Installing enhancements to promote invertebrates such as log piles at the base of boundary features which surround the site will improve the area for bats.

Two bat boxes suitable for pipistrelle bats are likely to be a condition of any licence to impact B2 (Interim box to be installed prior to destroying the known roosting site and the wall mounted box to be installed after completion). This should be increased to four bat boxes which along with the measures above will ensure net gain. The boxes can be of varied designs but must include at least three boxes which are designed for use by pipistrelle bats. The additional bat boxes should be installed onto mature trees in the grounds of the site away from the development.

Bat boxes should be of the woodcrete type to ensure longevity. Standard advice is that they are: erected in a sheltered location, in close proximity or with a strong unlit linear connection to good quality foraging habitat. For all types of boxes, Collins et al. (2020) found that the box height most frequently occupied was 4m (2020). A height of at least 3 metres is recommended; to be hung from a mature tree in the grounds.

Suitable bat box designs for pipistrelle bats are given in the appendix[1].

[1] the products shown are from the NHBS website: www.nhbs.com

7 References

Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd edition. The Bat Conservation Trust, London.
Bat Mitigation Guidelines Natural England (2004) A. J. Mitchell-Jones
BAT MITIGATION GUIDELINES: A guide to impact assessment, mitigation and compensation for developments affecting bats (Beta version 1.0: June 2021) CIEEM
Bat Conservation Trust website www.bats.org.uk
Google, (2019) Google Earth https://www.google.co.uk/intl/en_uk/earth/. United Kingdom.
Bat Conservation Trust (2009) Bats and Lighting in the UK: Bats and the Built Environment Series Collins, J. (ed.) (2016).
www.communities.gov.uk/publications/planningandbuilding/nppf United Kingdom
Shepherd, P. and Green, J. (2002). Planning and implementing ecological surveys. In Practice, Bulletin of the Institute of Ecology and Environmental Management.
CIEEM (2015) Guidelines for Ecological Report Writing. CIEEM, Winchester.
Entwistle, A.C., Racey, P.A. & Speakman, J.R., 1997, Roost selection by the brown long eared bat Plecotus auritus. Journal of Applied Ecology, 34, 399-408.
Bat Conservation Trust (2009) Bats and Lighting in the UK: Bats and the Built Environment Series Collins, J. (ed.) (2016).

Appendix 1: Review of Protected Species UK Legislation and Policy

The level of protection afforded to protected species varies dependent on the associated legislation. A full list of protected species and their specific legal protection is provided within the Schedules and/or Sections of the associated legislation. Case law may further clarify the nature of the legal protection afforded to species.
The legal protection afforded to protected species overrides all planning decisions. European Protected Species (EPS) - and the Conservation of Habitats and Species Regulations 2010 (as amended)
European Protected Species (EPS) are afforded the highest level of protection through the Conservation of Habitats and Species Regulations 2017. EPS are also afforded legal protection by parts of the Wildlife and Countryside Act 1981 (as amended).
In general, any person and/or activity that:
- Damages or destroys a breeding or resting place of an EPS. (This is sometimes referred to as the strict liability or absolute offence);
Deliberately captures, injures or kills an EPS (including their eggs);
Deliberately disturbs an EPS, and in particular disturbance likely to impair animals' ability to survive, breed or nurture young, their ability to hibernate and migrate and disturbance likely to have a significant effect on local distribution and abundance; intentionally or recklessly disturbs an EPS while occupying a structure or place used for shelter and/or protection (Wildlife and Countryside Act 198)1 (as amended); and
Intentionally or recklessly obstructs access to any structure or place that an EPS uses for shelter or protection (Wildlife and Countryside Act 1981) (as amended). may be guilty of an offence.
The legislation applies to the egg, larval and adult life stages of great crested newts and to bat roosts even when they are not occupied.
Actions affecting multiple animals can be construed as separate offences and therefore penalties can be applied per animal impacted.
Under certain circumstances licences can be granted by the Statutory Nature Conservation Organisation (Natural England in England) to permit actions that would otherwise be unlawful.
There are some very specific defences associated with the Conservation of Habitats and Species Regulations 2017. However, these are unlikely to apply to construction related projects. The Sections of the Regulations provide further details of these defences.
The Wildlife and Countryside Act (1981) includes defence for those aspects of the legislation that apply to an EPS. These defences are unlikely to apply to construction related projects and do not apply to those acts included in the Conservation of Habitats and Species Regulations 2010 (as amended). The Schedules of the Act provide further details of defences.
Local authorities have obligations under sections 40 and 41 of the Natural Environment and Rural Communities Act (NERC) 2006 to have regard to the purpose of conserving biodiversity in carrying out their duties. The majority of EPS are listed on Section 41 the NERC Act.
The Natural Environment and Rural Communities Act 2006 (as amended)
Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act (2006) requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers, including local and regional authorities, in implementing their duty under Section 40 of the act to have regard to the conservation of biodiversity in England when carrying out their normal functions. S41 lists 56 habitats and 943 species of principal importance. Section 42 of the NERC Act relates to Wales.

Wildlife and Countryside Act 1981 (as amended)
The level of protection afforded to species listed on the Wildlife and Countryside Act 1981 (as amended) varies considerably. 'Fully protected species', such as water vole, are afforded the highest level of protection. Any person who intentionally kills, injures, or takes 'fully protected species', or who intentionally or recklessly damages or destroys a structure or place used for shelter and/or protection, disturbs the animal whilst occupying a structure and/or place used for shelter and protection, or obstructs access to any structure and/or place used for shelter or protection is likely to have committed an offence.
Other species, such as common reptiles, are afforded less protection and for these species it may only be an offence to intentionally or recklessly kill or injure animals.
All active bird nests, eggs and young are protected from intentional destruction. Schedule 1 listed birds are also protected from intentional and reckless disturbance whilst breeding.
Schedule 9 of The Wildlife and Countryside Act lists plant species for which it is an offence for a person to plant, or otherwise cause to grow in the wild. Schedule 9 also lists animals for which it is an offence to release into the wild.
The National Planning Policy Framework
Planning policy requires new developments to take into consideration our local and national wildlife. With the objective to maintain or increase the viability of the site for wildlife. The existing proposals are considered to determine whether Habitat enhancements are offered and whether they are adequate to meet the policy requirements. Again, national, regional, county and borough policies are considered.
The National Planning Policy Framework states that the planning system should contribute to and enhance the natural and local environment by minimizing impacts on biodiversity and delivering net gains in biodiversity where possible.
Ecological habitat enhancements measures need to be over and above any mitigation measures.

Appendix 2: Survey results forms and site Photos

Site Name/Survey visit	Sheengate house 1	**Date**	11/08/2021
Start Time	20 16	**Surveyor**	Mike Rivarno
Sunset/ Sunrise Time	20:31	**Detector number**	1818-3290
Finish Time	22:01	**Position Relative to Structure**	North of structure
Weather Conditions pre sunset/post sunrise	wind 0 cloud 50% Rain 0	**Equipment Used**	Echo meter
Air Temperature Start	19	**Air Temperature end**	18
Brief summary (fill out at end of survey)	A lot of activities between 20:45 and 21:30 and a possible emergence and return both which if I'm correct on the north face of the building		

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	Species*	Activity**	Notes including flight direction (if seen)
20:45	P55?	NS	
20:47	P45	NS	
20:48	P45	NS	
20:49	P45	F	
20:50	P45	F	
20:51	P45	F	Circling overhead

20:52	P45	F	
20:54	P45	F	2 P45s foraging constantly
20:55	P45	F	2 Pips again
20:56	P45	F	
20:58	P45	F	
21:00	P45	E	Beneath eaves of north facing roof (see photo)
21:01	P45	F	2 pips again
21:05	P45	F	
21:14	P45	F	
21:17	P55	F	
21:31	?	SNH/R?	

Site Name/Survey visit	Sheengate house 1 (GARAGE)	**Date**	11/08/2021
Start Time	20 16	**Surveyor**	Charlie Birch
Sunset/ Sunrise Time	20:31	**Detector number**	E2C01558
Finish Time	22:01	**Position Relative to Structure**	south of shed
Weather Conditions pre sunset/post sunrise	wind 0 cloud 50% Rain 0	**Equipment Used**	EM 2 Pro
Air Temperature Start	19	**Air Temperature end**	18
Brief summary (fill out at end of survey)	3 emergance's - all soprano pips. Each from the same area (circled on the picture)		

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	Species*	Activity**	Notes including flight direction (if seen)
20:47	p45	F	circling the house , intermittent continuation for 18
20:49	P55	HNS	
20:52	p55	E	from flat roof
20:53	p55	E	"
20:55	P55	F	circling the house , intermittent continuation for 7
20:57	p55	E	flat roof

21:14	p45	HNS						
21:43	p45	HNS						

Site Name/Survey visit		Sheengate house 1	**Date**	11/08/2021
Start Time		20 16	**Surveyor**	EC
Sunset/ Sunrise Time		20:31	**Detector number**	e2d4045
Finish Time		22:01	**Position Relative to Structure**	se
Weather Conditions pre sunset/post sunrise		wind 0 cloud 50% Rain 0	**Equipment Used**	Echo meter 2 pro
Air Temperature Start			**Air Temperature end**	18C
Brief summary (fill out at end of survey)		1 x emergence of s pip and 1 x possible emergence. some commuting, f and social activity		

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	**Species***	**Activity****	**Notes including flight direction (if seen)**					
20 45	p55	E	Beneath east facing soffit/eaves					
20 47	p45	F sc	all around building and in front garden continuous for more than 10 mins					
21 13	ble	E						
21 14	p55	c	from c of roofline	snh				
21 18	p55?	c	smh nq - sw					

Site Name/Survey visit		Sheengate house 1(GARAGE)	**Date**	11/08/2021
Start Time		20 16	**Surveyor**	Jack Clark
Sunset/ Sunrise Time		20:31	**Detector number**	E2B00251
Finish Time		22:01	**Position Relative to Structure**	East of shed
Weather Conditions pre sunset/post sunrise		wind 0 cloud 50% Rain 0	**Equipment Used**	Echo meter

Air Temperature Start	19	**Air Temperature end**	18
Brief summary (fill out at end of survey)	no emergence witnessed. Intermittent common pip activity detected but not seen		

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	Species*	Activity**	Notes including flight direction (if seen)
20:47	p45	c	HNS 1 Pass distant
20:49	p45	c	HNS 1 Pass distant
20:51	p45	c	hns intermittent activity for 13 mins
21:20	p45	c	hns 1 pass

Site Name/Survey visit	Sheengate house 1	**Date**	11/08/2021
Start Time	20 16	**Surveyor**	Matt Kelk
Sunset/ Sunrise Time	20:31	**Detector number**	00:00
Finish Time	22:01	**Position Relative to Structure**	NW
Weather Conditions pre sunset/post sunrise	wind 0 cloud 50% Rain 0	**Equipment Used**	Echo meter 01841
Air Temperature Start	19	**Air Temperature end**	18
Brief summary (fill out at end of survey)	Lots of activity but no emergence or return at NW of structure. Possible roost in tall pine tree to the West of structure.		

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	Species*	Activity**	Notes including flight direction (if seen)
20:41	P55	?	Hns
20:43	?	C	Snh
20:46	P55	C/f	Flew from south to north into trees behind me then circled the house a few more times
20:51	P55	F	Came from NE across me, possibly another bat (not the same one).

20:54	P45	F	Came from tree line north of structure and round the west of building and then circled a few more times.					
20:58	P55	F	Came from south to north over building, and then flew around a few times side to side and round the house.					
21:02	P45	F	Flew round the building numerous times.					
21:14	P45	F	Flew over building from SE to North and round to West					
21:20	P45	F	Circled over head for about 3-4 mins					
21:30	P55	F		Flying back and forth and circling over head for about 2 mins				
21:43	P45	?		Hns				

Site Name/Survey visit		Sheengate house 2	**Date**	29/08/2021
Start Time		19:36	**Surveyor**	Charlie Birch
Sunset/ Sunrise Time		19:51	**Detector number**	E2D02546
Finish Time		21:21	**Position Relative to Structure**	N/NE
Weather Conditions pre sunset/post sunrise		Wind 3 Cloud 100% Rain 0	**Equipment Used**	Echo meter
Air Temperature Start		15	**Air Temperature end**	
Brief summary (fill out at end of survey)		Intermittent activity from both P45's and P55's with emergences from the flat roof , detected as P45's.		

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	**Species ***	**Activity****	**Notes including flight direction (if seen)**
19:57	p55?	SNH & E	From Flat roof - NE
20:04	p45	C	Towards NW
19:57	p55?	SNH & E	From Flat roof - NE
20:14	p45	HNS	
20:18	p45	HNS	
20:19	P55	E	from flat roof , over to neighbours
20:21	p55	HNS	
20:22	p45	HNS	intermittent for 3 minutes
20:22	p55	HNS	intermittent activity for 4 minutes
20:25	p55	C	towards neighbour

20:42	noc	HNS	
20:35	p55	HNS	
20:36	p45	HNS	
20:45	p55	HNS	
21:12	p45	HNS	

Site Name/Survey visit		Sheengate house 2	**Date**	29/08/2021
Start Time		19:36	**Surveyor**	Matt Kelk
Sunset/ Sunrise Time		19:51	**Detector number**	00:00
Finish Time		21:21	**Position Relative to Structure**	West
Weather Conditions pre sunset/post sunrise		Wind 3 Cloud 100% Rain 0	**Equipment Used**	Echo Meter Touch 01841
Air Temperature Start		16	**Air Temperature end**	16
Brief summary (fill out at end of survey)		A couple of P45 seen and heard, also P55 seen and heard. No emergence.		
*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser				
**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.				
Time	**Species ***	**Activity****	**Notes including flight direction (if seen)**	
08:02	P55	?	Hns	
08:05	45	F	West to east travel	
08:08	P45	?	Hns	
08:11	P45	F	Circling the garden behind me to the south of property	
20:20	P45	F	The same p45 still foraging around.	
08:27	P45	F	quite large and slow/possibly injured, flying back and forth	
09:13	P45	?	Hns	

Site Name/Survey visit	Sheengate house 2	**Date**	29/08/2021
Start Time	19:36	**Surveyor**	EC

Sunset/ Sunrise Time		19:51	**Detector number**	181852 90
Finish Time		21:21	**Position Relative to Structure**	NE
Weather Conditions pre sunset/post sunrise		Wind 3 Cloud 100% Rain 0	**Equipment Used**	batlogger m
Air Temperature Start		15	**Air Temperature end**	16
Brief summary (fill out at end of survey)		1 x emergence and 1 x poss emergence.		
*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser				
**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.				
Time	**Species ***	**Activity****	**Notes including flight direction (if seen)**	
19 55	p45	c	n - s same time as cb emergence	
20 02	p45	E	from north facing hip tiled roof a	
20 04	p55	c	n - s same time as aplus emergence ?	
20 06	p55	f	ne of house	
20 08	p45	c	n - s same time as cb emergence	
20 11	p45	f	around east of house 1 pass	
04/07/1905 00:00	p55?	snh c	n- s along hedherow	
20 14	p45	f	intermittent activity	
20 20	p55	c	seen heading south from c of roof line	
20 23	p45	c	n - s	
21 12	p45	hns		
21 19	p45?	hns		

Timestamp	Calls [#]	Mean Pea	Mean Max	Mean Min	Mean Call	Mean Call	Notes
29/08/2021 19:44	1	15.6	15.9	14.9	16.4	0	
29/08/2021 19:45	1	15.3	19.5	14.9	2	0	
29/08/2021 19:45	1	15.6	15.9	14.9	13.1	0	
29/08/2021 19:45	2	15.4	15.9	14.9	8.8	357	
29/08/2021 19:45	3	35.1	35.4	34.5	13.1	365	
29/08/2021 19:45	1	19.8	20.1	16.8	18.4	0	
29/08/2021 19:45	1	40.3	40.6	39.7	6.6	0	
29/08/2021 19:58	1	15.9	19.5	15.3	6.6	0	
29/08/2021 19:59	2	47.1	49.7	46.4	3.3	1341	
29/08/2021 20:00	1	46.7	48.5	44.8	4.6	0	
29/08/2021 20:01	1	46.7	48.8	46.1	3.3	0	
29/08/2021 20:01	17	46.7	52.6	45.9	4	83	
29/08/2021 20:04	6	47.8	52.6	46.8	5.4	249	
29/08/2021 20:05	15	47.5	54.9	46.2	4	80	
29/08/2021 20:09	2	45.8	49.3	45.1	3.9	234	
29/08/2021 20:09	5	47.7	51.9	47.1	3	178	
29/08/2021 20:09	4	47.7	51.9	46.7	4.3	194	
29/08/2021 20:09	14	47.6	54.9	46.8	3	76	
29/08/2021 20:09	3	14.9	17.1	14.9	7	482	
29/08/2021 20:09	14	47.2	53.5	44.8	5	80	
29/08/2021 20:10	1	15.6	15.9	14.9	7.9	0	
29/08/2021 20:10	22	46.7	57.7	46	3	80	
29/08/2021 20:10	4	47.4	52.5	46.2	5	256	
29/08/2021 20:11	2	47.4	52	46.7	2.6	638	
29/08/2021 20:11	13	47.6	60.2	46.8	3	211	
29/08/2021 20:11	17	46.6	55.9	46.1	4	80	
29/08/2021 20:11	14	47.8	56.5	47.2	3	83	
29/08/2021 20:11	20	48.5	55.5	47	4	250	
29/08/2021 20:12	6	48.3	53.5	47.4	5	222	
29/08/2021 20:12	9	48.3	56.1	45.6	6	176	
29/08/2021 20:13	5	50.6	64.3	47.4	4.6	152	
29/08/2021 20:13	14	47.7	55	46.9	3	60	
29/08/2021 20:14	7	48.3	57.9	47.4	3	80	
29/08/2021 20:14	2	46.4	50.2	45.9	4.6	244	
29/08/2021 20:14	38	47.7	60.8	46.3	5	70	
29/08/2021 20:14	26	46.9	59.4	46.1	4	80	
29/08/2021 20:15	41	47.1	59.4	46.3	4	80	
29/08/2021 20:15	40	46.9	57.5	46	4	80	
29/08/2021 20:15	33	47.5	57.4	45.5	4	80	
29/08/2021 20:16	1	47.3	49.1	47	2	0	
29/08/2021 20:16	3	48.7	52.6	46.3	5.7	57	
29/08/2021 20:16	13	48.2	55.4	45.3	3	250	
29/08/2021 20:16	4	44.3	48.3	43.7	4	286	
29/08/2021 20:17	1	47	50	46.7	3.3	0	
29/08/2021 20:17	21	47.6	56.6	45.3	5	90	
29/08/2021 20:17	1	46.7	48.5	46.1	3.3	0	
29/08/2021 20:18	11	44.1	49.3	43.3	3	75	
29/08/2021 20:18	5	44.3	47.8	43.9	3	185	
29/08/2021 20:19	2	46.4	49.4	45.9	2.9	449	
29/08/2021 20:19	9	44.5	49.1	43.8	5	90	
29/08/2021 20:19	3	44.1	50.8	43.4	5	78	
29/08/2021 20:19	5	44.5	49.5	43.7	4.5	294	
29/08/2021 20:20	5	43.3	50.9	42.5	5.8	80	
29/08/2021 20:20	15	44.6	49	43.7	4	90	
29/08/2021 20:20	1	42.7	45.4	42.4	4.6	0	
29/08/2021 20:20	1	44.5	47	43.6	3.3	0	
29/08/2021 20:20	4	44.1	47.4	43.6	5	331	
29/08/2021 20:20	2	43.5	45.1	42.4	4.6	191	
29/08/2021 20:20	1	45.4	48.8	44.8	3.3	0	
29/08/2021 20:20	38	45.4	55.2	44.4	3	83	
29/08/2021 20:21	14	45.2	56.2	44.7	3	90	
29/08/2021 20:21	2	44.4	46.8	43.6	3.3	561	
29/08/2021 20:21	1	47	49.7	46.4	3.9	0	
29/08/2021 20:21	27	48	53.4	46.3	5	180	
29/08/2021 20:22	1	16.2	17.1	15.6	4.6	0	
29/08/2021 20:22	1	15.6	15.9	14.9	15.7	0	
29/08/2021 20:22	1	15.6	15.9	15.3	6.6	0	
29/08/2021 20:22	1	15.6	15.9	14.9	15.1	0	
29/08/2021 20:22	1	18	21.4	17.1	6.6	0	
29/08/2021 20:22	2	14.9	15.6	14.9	5.2	421	
29/08/2021 20:22	8	44.9	49.4	44.4	3	90	
29/08/2021 20:23	1	18	18.3	17.7	6.6	0	
29/08/2021 20:23	1	19.8	20.1	19.2	11.8	0	
29/08/2021 20:23	1	40.3	40.6	39.7	12.5	0	
29/08/2021 20:23	1	16.2	16.5	15.6	5.9	0	
29/08/2021 20:23	1	35.1	35.4	33.6	13.1	0	
29/08/2021 20:23	1	40	40.3	39.7	7.9	0	
29/08/2021 20:23	1	35.1	35.4	32.6	15.1	0	
29/08/2021 20:23	1	44.5	47.9	43.9	3.3	0	
29/08/2021 20:23	5	44.5	47.9	43.9	4	183	
29/08/2021 20:24	4	48.9	55.1	48.3	3	140	
29/08/2021 20:24	1	48.2	51.5	47.9	3.9	0	
29/08/2021 20:24	2	43	47.1	42.1	4.3	540	
29/08/2021 20:24	1	48.5	50.6	47.9	4.6	0	
29/08/2021 20:24	4	43.5	46.5	42.5	4.4	351	
29/08/2021 20:29	2	45.9	47.9	44.7	6.2	201	
29/08/2021 20:30	7	46.6	50.3	45.7	4.7	492	
29/08/2021 20:30	3	31.8	42	26.2	3.7	186	
29/08/2021 20:30	6	44.3	48.5	43.7	4	203	
29/08/2021 20:30	1	48.5	52.2	48.2	4.6	0	
29/08/2021 20:30	6	43.9	47.9	43.1	3	70	
29/08/2021 20:30	26	44.5	54.6	43.7	4	90	
29/08/2021 20:31	11	49.9	58.7	47.9	5	351	
29/08/2021 20:33	2	45.3	47.4	44.8	6.9	423	
29/08/2021 20:33	21	46.6	49.5	45.8	5	94	
29/08/2021 20:33	5	44.1	45.9	43.6	7	299	
29/08/2021 20:33	32	47	52.2	45.9	6	90	
29/08/2021 20:34	1	43.9	46.1	43.3	3.3	0	
29/08/2021 20:38	24	43.3	45.9	42.5	6	190	
29/08/2021 20:39	41	47	50.6	46	5	180	
29/08/2021 20:39	3	42.7	43.9	42.4	6.3	537	
29/08/2021 20:41	2	43.2	44.8	42.9	5.2	231	
29/08/2021 20:42	6	47.5	50.1	46.8	5	338	
29/08/2021 20:42	5	47.5	50.4	46.8	7	342	
29/08/2021 20:43	1	45.1	46.7	44.8	7.2	0	
29/08/2021 20:43	36	46.1	48.7	44.9	5	100	
29/08/2021 20:44	3	45	47.7	44.6	6.6	290	
29/08/2021 20:44	12	44	47.2	43.4	5	279	
29/08/2021 20:44	1	62.8	66.8	60.1	3.3	0	
29/08/2021 20:44	1	35.1	48.2	28.4	3.9	0	
29/08/2021 20:45	11	45.6	46.4	45	5	338	
29/08/2021 20:49	2	45.4	45.8	45	9.2	874	
29/08/2021 20:52	1	22.9	25.6	22	5.2	0	
29/08/2021 20:52	1	23.8	27.1	22	6.6	0	
29/08/2021 20:53	10	48.4	53.5	46.8	6	90	
29/08/2021 20:53	7	58.1	68.5	57.2	5	441	
29/08/2021 20:58	13	49.7	56	48.8	3	322	
29/08/2021 20:58	10	48.1	53.2	47.4	5	457	
29/08/2021 20:58	4	45.4	49.5	44.8	4.9	274	
29/08/2021 20:58	2	45.8	48.3	44.5	5.6	285	
29/08/2021 20:59	16	47.6	51.1	46.5	5	90	
29/08/2021 20:59	1	17.1	25.6	15.9	5.2	0	
29/08/2021 21:00	3	45.3	47.2	44.9	4.6	617	
29/08/2021 21:01	23	50.1	56.5	49.3	4	90	
29/08/2021 21:02	5	44.8	47.2	44.1	5	276	
29/08/2021 21:02	4	45.4	47.7	44.5	5.2	393	
29/08/2021 21:03	4	44.3	44.9	43.8	6.2	630	
29/08/2021 21:03	1	48.8	50.9	48.2	4.6	0	
29/08/2021 21:03	15	44	45	43.3	9	120	
29/08/2021 21:03	1	24.7	25	23.8	17	0	

Site Name/Survey visit		Sheengate house 2	Date	29/08/2021
Start Time		19:36	Surveyor	Joshua Griffiths
Sunset/ Sunrise Time		19:51	Detector number	E2D04045
Finish Time		21:21	Position Relative to Structure	NW
Weather Conditions pre sunset/post sunrise		Wind 3 Cloud 100% Rain 0	Equipment Used	Echo meter
Air Temperature Start		16	Air Temperature end	16
Brief summary (fill out at end of survey)				

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	Species *	Activity**	Notes including flight direction (if seen)
20:04	P45	C	Came from N flew S
20:12	P45	NS	
20:19	P55	C	Flew S
20:19	P45	NS	
20:21	P55	C	Flew SE over the roof don't know where it came from
20:24	P55	NS	
20:24	P45	C	Flew S From N
20:25	P45	C	Flew SE from NW
20:26	P45	NS	
20:31	P45	NS	
20:11	P45	NS	

Site Name/Survey visit		Sheengate house 3	Date	18/09/2021
Start Time		05:11	Surveyor	Charlie Birch
Sunset/ Sunrise Time		06:41	Detector number	E2D02546
Finish Time		06:56	Position Relative to Structure	SE corner

Weather Conditions pre sunset/post sunrise	wind 0 cloud 80% Rain 0	**Equipment Used**	Echo meter
Air Temperature Start	14c	**Air Temperature end**	14c
Brief summary (fill out at end of survey)			

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	**Species***	**Activity****	**Notes including flight direction (if seen)**
05:49	NOC	HNS	
05:56	BLE	HNS	
06:01	p55	HNS	
06:10	p45	HNS	
06:21	p45	C	SE-N/NE

Site Name/Survey visit	Sheengate house 3	**Date**	18/09/2021
Start Time	05:11	**Surveyor**	Chris
Sunset/ Sunrise Time	06:41	**Detector number**	E2C01558
Finish Time	06:56	**Position Relative to Structure**	South West
Weather Conditions pre sunset/post sunrise	wind 0 cloud 80% Rain 0	**Equipment Used**	Echo meter
Air Temperature Start	14'	**Air Temperature end**	14'
Brief summary (fill out at end of survey)			

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	**Species***	**Activity****	**Notes including flight direction (if seen)**
			nil

Site Name/Survey visit		Sheengate house 3	Date	18/09/2021
Start Time		05:11	Surveyor	Jack Clark
Sunset/ Sunrise Time		06:41	Detector number	E2B00251
Finish Time		06:56	Position Relative to Structure	East of garage
Weather Conditions pre sunset/post sunrise		wind 0 cloud 80% Rain 0	Equipment Used	Echo meter
Air Temperature Start		14	Air Temperature end	14
Brief summary (fill out at end of survey)		no returns		

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	Species*	Activity**	Notes including flight direction (if seen)
05:49	BLE	c	HNS 1 pass
05:57	BLE	c	HNS 3 Passes

Site Name/Survey visit		Sheengate house 3	Date	18/09/2021
Start Time		05:11	Surveyor	Joshua Griffiths
Sunset/ Sunrise Time		06:41	Detector number	
Finish Time		06:56	Position Relative to Structure	NW
Weather Conditions pre sunset/post sunrise		wind 0 cloud 80% Rain 0	Equipment Used	Echo meter
Air Temperature Start		14	Air Temperature end	14
Brief summary (fill out at end of survey)				

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	Species*	Activity**	Notes including flight direction (if seen)

06:06	noc	HNS	Flew around for 11 minutes
06:11	noc	c	

Site Name/Survey visit		Sheengate house 3	**Date** 18/09/2021
Start Time		05:11	**Surveyor** Matt Kelk
Sunset/ Sunrise Time		06:41	**Detector number**
Finish Time		06:56	**Position Relative to Structure** SW of garage
Weather Conditions pre sunset/post sunrise		wind 0 cloud 80% Rain 0	**Equipment Used** Echo meter 01841
Air Temperature Start		14°c	**Air Temperature end** 14°c
Brief summary (fill out at end of survey)		No Returns, only one P55 sighting.	

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser

**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.

Time	**Species ***	**Activity****	**Notes including flight direction (if seen)**
05:50	P55	?	Hns
06:00	P55	C	1 pass south to north over garage
06:30	Myo n?	?	Hns
06:44	Myo n?	?	Hns

Site Name/Survey visit		Sheengate house	**Date** 18/09/2021
Start Time		05:11	**Surveyor** EC
Sunset/ Sunrise Time		06:41	**Detector number** 1818 3290
Finish Time		06:56	**Position Relative to Structure** NE
Weather Conditions pre sunset/post sunrise		wind 0 cloud 0% Rain 0	**Equipment Used** batlogger M
Air Temperature Start		14	**Air Temperature end**
Brief summary (fill out at end of survey)			

*Shorthand: Common Pipistrelle = P45; Soprano Pipistrelle = P55 Brown/Grey long eared = LE; All Myotis = myo followed by single letter; Greater Horseshoe - GHS; Greater Noctule = Noc; Leislers Noctule = Leis; Serotine = ser								
**Shorthand - 'NS' = not seen; 'SNH' = seen not heard; 'E' = emergence; 'R' = return; 'F' = foraging; 'C' = commuting.								
Time	**Species***	**Activity****	**Notes including flight direction (if seen)**					
05 20			distant social calls					
05 48	p55	ns	1 pass light echo and sc					
05 56	p55		as above					
05 59	p55	c	s - n over roof of house					
06 20	p55	re entry behaviour	flying around east end of roof