

PRA, NESTING BIRDS AND BAT ACTIVITY SURVEY REPORT

8th January 2025

Graiswold, Sandhurst Road, Wokingham,
RG40 3JQ

Applicant: Anabel Lopez

Agent/planner: Bastion

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Applicant:	Anabel Lopez
Agent/planner:	Bastion
Author(s):	Jordan Elliot-Murray MSc & Laurence Wills BSc (Hons)
Report approved for issue by:	Becci Smith BSc (Hons)MCIEEM
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This report has been prepared to identify the presence of bats and nesting birds within the site, where this falls within the scope of the agreed works.

This report has been produced using all reasonable skill and care, and a Quality Assurance (QA) review process has been undertaken prior to issue of this report. If the reader identifies any inaccuracies or discrepancies, this should be brought to the attention of ABR Ecology immediately.

SURVEY DATA LIFESPAN AND VALIDITY:

Survey data is considered valid for 12-18 months from the survey date in accordance with the CIEEM Advice note (CIEEM, 2019), due to the presence of and/or potential for mobile species to be present within the site. The 12-18 month period is taken where the condition(s) of the building(s)/structure(s) on site remain unchanged since the survey and the proposals for the site are unchanged. If any changes to the plans occur, this report may not be valid and any conclusions provided may not be appropriate. In this event, it is the responsibility of the applicant to contact ABR Ecology to determine whether an amended report or resurvey of the site is required.

Update survey data will likely be required to inform a bat European Protected Species (EPS) licence application. The building inspection (PRA) is considered valid for 3 months and activity data from the then current survey season (May – August/September) to inform a bat licence application.

This document has been prepared in accordance with CIEEM's Guidelines for Ecological Report Writing 2nd ed (CIEEM, 2017a) and the Bat Conservation Trust (BCT) Good Practice Guidelines 4th ed (Collins, 2023).

ABR Ecology Ltd cannot accept responsibility for third party data supplied within this report.

At the time of writing, standard methodologies have been used which are accepted by Natural England and other statutory bodies. No responsibility will be accepted where standard methodologies change and where Government, national bodies and industry subsequently modify standards.

	ABR Ecology Ltd	
	Suite 7, The Old Pottery, Manor Way, Verwood, Dorset BH31 6HF	
	Tel:	01202 821325
	Web:	www.abrecology.com
	Lead ecologist email:	laurence.abrecology@gmail.com
Registered Limited company in England and Wales no:		11266688

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Non-technical summary

- ◆ ABR Ecology Ltd were commissioned by Anabel Lopez to undertake a Preliminary Roost Assessment (PRA), nesting birds survey and three bat activity (dusk) surveys at Graiswold, Sandhurst Road, Wokingham, RG40 3JQ to advise on the presence/absence of bats and nesting birds at the property.
- ◆ This report was requested to support a householder application for two second-storey extensions and replacement orangery.
- ◆ The PRA and nesting birds survey was undertaken on the 7th May 2024 by Natural England class 2 licensed bat ecologist Laurence Wills and graduate ecologist Jordan Elliot-Murray. The bat activity (dusk) surveys were conducted on 11th June 2024, 11th August 2024 and 21st September 2024.
- ◆ The PRA identified bat droppings within the loft space, confirmed to belong to brown long-eared bats by DNA analysis. The external house was also identified to hold 'high' potential for roosting bats due to numerous optimal gaps. **The brown long-eared bat roost identified within the main loft void is being retained and therefore this area was not surveyed during the activity surveys. No requirements for mitigation have been made in regard to this roost.**
- ◆ The activity surveys identified a maximum count of six Natterer's bats emerging from the building during any one survey. The building has been assessed to support one day roost for six Natterer's bats utilising one access point.
- ◆ **The works will result in the loss of the Natterer's bat roost; a bat European Protected Species (EPS) licence from Natural England is required following planning approval and prior to any works commencing to ensure works are lawful.** It is the responsibility of the applicant to arrange for application of the EPS licence.
- ◆ The general site also supports commuting and foraging bats, and there is potential for artificial lighting to impede bats using the general property.
- ◆ A bat mitigation plan is provided in Section 4. This plan involves a works method statement including supervision by a class 2 licensed bat ecologist, lighting control measures, and temporary and permanent replacement bat roosts.
- ◆ The applicant must note that the survey data has a limited lifespan and the EPS licence must be informed by up-to-date surveys. Therefore, update survey(s) will likely be required following planning to inform the EPS licence. A PRA must be conducted within 3 months of the licence application and activity survey data must be obtained from the then 'current' bat survey season (May – August).
- ◆ No evidence of nesting birds or potential for nesting birds was recorded during the visit. Therefore, nesting birds are not considered to be impacted from the development.
- ◆ One 'Vivara Pro Build-in WoodStone Bat Box' will be provided as an enhancement to ensure the application is compliant with planning policy. This is detailed in Section 4.

1. Introduction

- 1.1 ABR Ecology Ltd were commissioned Anabel Lopez to undertake a Preliminary Roost Assessment (PRA), nesting birds survey and three bat activity (dusk) surveys at Graiswold, Sandhurst Road, Wokingham, RG40 3JQ (central grid reference: SU 80704 65677) to advise on the presence/absence of bats and nesting birds at the property. This report was requested to support a householder application for two second-storey extensions and replacement orangery.
- 1.2 The PRA and nesting birds survey was undertaken on the 7th May 2024 by Natural England class 1 licensed bat ecologist Laurence Wills and graduate ecologist Jordan Elliot-Murray. The bat activity (dusk) surveys were conducted on 11th June 2024, 11th August 2024 and 21st September 2024.
- 1.3 Existing plans and elevations are provided in Appendix A and proposed plans are provided in Appendix B.

Site context

- 1.4 The application site comprises a residential property consisting of a detached house in Wokingham, Berkshire within an urban area. The immediate surrounding landscape comprises residential housing and gardens to the north and east with treeline corridors between properties, and woodland to the west and south. The wider surrounding landscape comprises urban residential development with gardens, public ornamental gardens and pockets of woodland. The surrounding landscapes are considered to provide excellent foraging opportunities and commuting corridors for bats.

Aims and scope of the PRA and report

- 1.5 The principal aim of a PRA survey is to determine the actual and potential presence of bats within the building(s)/structure(s). Bat activity (dusk) surveys were conducted to supplement the PRA survey and to determine the presence/likely absence of bats within the building. This report is based on the results of the PRA, activity (dusk) surveys, and records of bats and bat roosts as supplied by Thames Valley Environmental Records Centre (TVERC, 2024).
- 1.6 The results of the PRA, activity (dusk) surveys and the data search were principally aimed at determining if a bat roost is present within the property and/or whether the building/structure hold the 'potential' to support roosting bats in line with The BCT Good Practice Guidelines 4th ed (Collins, 2023). The results of the data search were also used to determine the Zone of Influence (Zoi) for bats associated with the project.
- 1.7 This report aims to establish whether the proposed works will likely impact roosting bats; the report also aims to identify if there is a requirement for a bat European Protected Species (EPS) licence or Bat Mitigation Class Licence (BMCL) from Natural England to allow the works to proceed lawfully following planning approval.
- 1.8 The aim of the nesting birds survey was to determine if there is any recent or historical evidence of nesting birds within the building(s) onsite.

Relevant planning policy and legislation

1.9 Full details of relevant planning policy and legislation are provided in Appendix C of this report; the following policy and legislation in respect of bats and nesting birds is applicable to this application:

- ◆ The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
- ◆ The Wildlife and Countryside Act 1981 (as amended) – Section 1 and Schedule 1 (birds) and 5 (bats)
- ◆ The Natural Environment and Rural Communities (NERC) Act 2006 – Sections 40 and 41
- ◆ The Environment Act 2021
- ◆ The National Planning Policy Framework (NPPF) 2023 – Section 15
- ◆ National Planning Practice Guidance Natural Environment (para 10-35)
- ◆ Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact Within the Planning System
- ◆ Wokingham Borough Local Development Framework: Core Strategy – Policy CP7

1.10 **It is the responsibility of the applicant(s) to ensure that the proposed development proceeds in full compliance with legislation, national and local policy, and in accordance with all conditions of the obtained planning consent(s). It is also the responsibility of the applicant(s) to request a report amendment / reassessment of the site for roosting bats and nesting birds where the scale/nature of the proposed plans subsequently change.**

2. Methodology

Desktop data search – bat records

- 2.1 Thames Valley Environmental Records Centre (TVERC, 2024) was contacted to provide records of bats and bat roosts within a 2km radius of the application site. These records were used to inform the assessment of the site in its potential to support roosting bats and identifying any potential cumulative impacts on bats from the proposed development.

Zone of Influence (Zol) for bats

- 2.2 The results of the desktop data search and the proposed plans were used to determine a Zone of Influence (Zol) for bats; the Zol is defined by CIEEM (2017b) as ‘*the areas/resources that may be affected by the biophysical changes caused by activities associated with a project*’.
- 2.3 Due to the localised and small-scale nature of the proposals (as shown in Appendix B), the Zol for roosting bats is confined to the site boundary. The Zol for foraging bats may extend just beyond the site boundary where artificial lighting is concerned, however, this is considered to be minimal if lighting mitigation is implemented, and therefore the survey area was confined to the building only.

Preliminary Roost Assessment (PRA)

- 2.4 Natural England class 2 licensed bat ecologist Laurence Wills and graduate ecologist Jordan Elliot-Murray undertook the PRA of the building on site. Conditions for the PRA are provided in Table 1 below:

Table 1: Weather conditions, equipment and timings for PRA survey

Survey date	Time of survey	Surveyors	Equipment available for use	Weather conditions		
06/05/2024	11:30am	Laurence Wills and Jordan Elliot-Murray	High-powered torch, mirrors, sealable bags, FFP3 face masks, gloves, extendable ladder, endoscope, binoculars	Temp:	Okta cloud cover:	Beaufort wind force:
				18°C	0/8	1/12

- 2.5 The surveying ecologists have received training in Working at Heights (and in-house training in the use of ladders for PRA surveys), Manual Handling, and Emergency First Aid At Work to ensure compliance with Health and Safety legislation (The Work at Height Regulations, 2005; Manual Handling Operations Regulations, 1992; The Health and Safety (First-Aid) Regulations, 1981).
- 2.6 The PRA was undertaken in accordance with The Bat Conservation Trust (BCT) Good Practice Guidelines 4th ed (Collins, 2023). A systematic search was made of any internal building areas / loft spaces and exterior building areas. Where present, information was compiled on the potential and actual bat entry/exit points (where possible); potential and actual bat roosting locations; and any evidence of bats found.

- 2.7 The internal inspection involved a search of internal building areas and where loft spaces were present, the ecologists undertook a search of areas such as beams/felt; fibreglass insulation/flooring; crawl boards; water tanks; internal chimney stacks; gable ends; and stored materials etc.
- 2.8 The external building assessment included an inspection of the ground/flooring, and where present, any windowsills, windowpanes, behind peeling paintwork/lifted render, brick/block work, chimneys, eaves, lead flashing, tiles and soffits etc.
- 2.9 Evidence of roosting bats can include:
- ◆ The presence of physical live/deceased bats
 - ◆ Bat droppings (distinguished from rodent droppings by their crumbly texture)
 - ◆ Fur-oil staining around entry/exit points
 - ◆ Urine splashing
 - ◆ Feeding remains, such as insect wings and casings
- 2.10 The building was identified as a ‘confirmed’ bat roost where bat evidence was recorded. If droppings were present, a sample of the bat droppings were collected and couriered to Swift Ecology Ltd for DNA analysis to confirm the species of bat present.
- 2.11 Most native bats in England are crevice-dwelling species, with bats roosting in remote areas, such as under roof tiles; behind cladding; in cavities; soffits; and behind lead flashing etc, and evidence of these species is often concealed and/or inaccessible. Therefore, where no evidence of roosting bats was recorded, an assessment on the availability of potential roosting areas and bat exit/entry points around the building was conducted. The building was then assigned a category based on a sliding scale of potential for bats, ranging from ‘none’ to ‘high’ (Collins, 2023):

Table 2: Guidelines for assessing the potential suitability of buildings for bats (Collins, 2023)

Bat roosting potential	Description
‘High’	A structure with one of more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis & potentially for longer periods of time due to their size, shelter, protection, conditions (temperature, humidity, height above ground level, adverse light levels, or high levels of disturbance), and surrounding habitat. The structure has the potential to support high conservation status roosts for example maternity or classic cool/stable hibernation sites.
‘Moderate’	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (temperature, humidity, height above ground level, adverse light levels, or high levels of disturbance), and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity & hibernation and this is made irrespective of species

	conservation status, which is established after presence if confirmed via the PRA).
‘Low’	The building features one or more potential roosting features that could be used by bats opportunistically at any time of year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions (temperature, humidity, height above ground level, adverse light levels, or high levels of disturbance) and/or suitable surrounding habitat to be used on a regular basis or by a larger number of bats.
‘Negligible’	There are no obvious habitat features likely to be used by bats, however there is a small element of uncertainty as bats can use small and apparently unsuitable features on occasion. (*negligible is defined as ‘so small or unimportant as to be not worth considering, insignificant’. This category may be used where there are places that a bat could roost or forage (due to one attribute), but it is unlikely that they would (due to another attribute).
‘None’	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).

Bat activity (dusk) surveys

- 2.12 Natural England class 1 licensed bat ecologist Laurence Wills, graduate ecologists Chloe Whittaker and Emily Parsons and seasonal bat surveyors Peter Wills undertook the bat activity (dusk) surveys of the building on site. Conditions for the dusk surveys are provided in the full results in Appendix F of this report.
- 2.13 The dusk surveys were conducted in accordance with the BCT Good Practice Guidelines (4th Ed) (Collins, 2023) and the Interim Guidance Note: Use of Night Vision Aids for bat emergence surveys and further comment on dawn surveys (BCT, 2022).
- 2.14 The surveys involved a direct observation of the external building to identify any bats emerging from their roosts. The ecologists used automated bat detectors and a Night Vision Aid (NVA) (one additional Nightfox Whisker) to identify any later emerging species and to identify bats where vision was limited (for example, roofs under the cover of tree canopies). A screenshot of the ‘darkest point’ of the surveys captured using the NVA is provided in Appendix F.
- 2.15 Where present, information was compiled on the species, numbers, access points, roosting locations and flight paths. Information was also obtained on general activity on site such as foraging and commuting bats crossing the property.
- 2.16 The dusk surveys commenced 15 minutes before sunset and finished between 1.5-2hrs after sunset. The survey was conducted when the temperature was 10°C with no strong winds or precipitation.

- 2.17 Following the dusk surveys, the footage from the NVAs was reviewed by an analyst using a motion detection software. Bat calls were analysed using Kaleidoscope Pro Analysis Software.

Bat impact assessment

- 2.18 Following the CIEEM Bat Mitigation Guidelines (Reason, P.F. and Wray, S, 2023), the roost(s) onsite were classified in accordance with the following roost types:
- Day roost
 - Night roost
 - Maternity roost
 - Satellite roost
 - Hibernation roost
 - Feeding perch and
 - Transitional roost
- 2.19 Information on the roost type(s) and rarity of the bat species within a geographical context was used to assess the importance of the roost(s). Maternity and hibernation roosts are of higher importance than day/night or transitional roosts, which are lower in conservation value due to supporting low numbers of bats; maternity roosts support high numbers of bats and contribute more significantly to the population of the species and are therefore of higher importance.
- 2.20 Roosts are assigned a value based upon 'Guidelines for Ecological Impact Assessment (EcIA)' (CIEEM, 2018), this ranges from 'site' importance (day roosts of common species) to 'national' importance (hibernation roosts of Annex II species).
- 2.21 Once the roost(s) on site were identified and classified, the 'Minimum Expectations for Bat Mitigation Compensation, Monitoring and Management' (Natural England, 2023) document was used to design an appropriate bat mitigation, compensation and enhancement plan.

Nesting birds

- 2.22 A search was conducted for evidence of barn owl (*Tyto alba*) and other nesting birds within and around the building(s) during the site visit. Evidence of nesting birds can include the physical presence of chicks and/or adult birds, nesting material, eggs and/or egg casings, feathers, white splashing (droppings), and pellets (for barn owls).

Survey limitations

PRA and nesting bird surveys

- 2.23 Bats and nesting birds are highly mobile species and it is therefore possible for bats and nesting birds to occupy the property at any time in the future, particularly if any alterations/changes occur to the property. The PRA only provides a 'snapshot' in time and does not account for seasonal variation; bats and nesting birds may have been overlooked due to seasonal constraints. As such, it is not possible to have complete certainty that bats and nesting birds are not present, rather, there was no indication of bat/nesting bird presence at the time of survey.

- 2.24 Potential evidence of bats, in particular crevice-dwelling species, may have been overlooked due to access restrictions to remote areas of the building. Binoculars were used to help identify any potential bat droppings on the exterior features of the building.
- 2.25 Often bats leave no visible sign of their presence on the outside of a building, and even when they do, wet weather can wash evidence away.
- 2.26 Due to the localised area of the proposed works within the southeast, the northwest section of the building was not surveyed during the bat activity (dusk) surveys. **Any impacts to the northwest section of the building or the identified bat roost on site (brown long-eared bats) as a result of a change of the proposed plans have not been correctly assessed within this report and additional surveys may be needed.**

Bat activity (dusk) surveys

- 2.27 Some bat species, particularly long-eared (*Plecotus sp.*) and myotis (*Myotis sp.*) bats, emerge later in the evening when light levels are low, making it difficult to identify bats which have emerged from the building. To overcome this constraint, the survey was supplemented by Night Vision Aids (NVAs) which can identify bats emerging from their roost during darkness.
- 2.28 Environmental conditions can affect bat activity, including temperature, humidity, wind speed and precipitation. The effect of weather conditions on active bats is likely to be different for different species in different situations (e.g. open versus sheltered habitats), for example, pipistrelle (*Pipistrellus sp.*) bats are more resilient to changes in ambient temperature.
- 2.29 In the event that bats are not recorded entering/exiting the building, professional judgement was used to determine the roost type(s) through ruling out other types of roosts not present based on other survey evidence. For example, ruling out feeding roosts may be ruled out due to the lack of feeding evidence, a maternity roost may be ruled out due to a lack of dropping evidence or ruling out the presence of hibernation roosts based upon the internal temperature/humidity.
- 2.30 Bats of the myotis genus possess very similar calls, and it can be difficult to distinguish different species. The identification of myotis bats relies on the analyst's interpretation.

Reporting and survey data lifespan

- 2.31 The data within this report should not be seen as comprehensive. Data obtained from the TVERC (2024) data search is highly unlikely to be representative of the bat species and roosts existing within the area. It is therefore possible that bat species/bat roosts may occur that have not been recorded in the area by the local records centre.
- 2.32 This report is considered valid for 12-18 months from the survey date in accordance with the CIEEM Advice note (CIEEM, 2019) for planning purposes only; and is only intended for the proposed plans outlined within this report. If any material changes to the building(s)/site occur or if the nature and/or extent of the proposed development changes, an update visit to reassess the building(s) will be required, as any conclusions provided herein may not be valid.

2.33 The applicant must note that the survey data has a limited lifespan for the EPS licence application. The EPS licence application must be informed by a PRA within 3 months of the licence application date, and activity survey data must be obtained from the then 'current' bat survey season (May to August) in which the licence is applied for. For example, activity surveys are conducted and planning is approved in August and the EPS licence is applied for in July the following year, a minimum of one update dusk survey would be required in the months of May-June in the same year prior to the EPS licence application in July.

3. Results

Desktop data search – bat records

- 3.1 TVERC (2024) provided records of bats and bat roosts within a 1km radius of the site as presented in Table 3 below:

Table 3: Records for bats and bat roosts around the site

Common name	Latin name	Number of records	Most recent record	Nearest record to site
Brown long-eared bat	<i>Plecotus auritus</i>	50	2023	280m west
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	65	2023	280m west
Daubenton’s bat	<i>Myotis daubentonii</i>	3	2017	680m southwest
Leisler’s bat	<i>Nyctalus leisleri</i>	2	2014	980m southwest
Long-eared bat sp.	<i>Plecotus sp.</i>	27	2018	30m northwest
Myotis bat sp.	<i>Myotis sp.</i>	12	2019	280m west
Nathusius’s pipistrelle	<i>Pipistrellus nathusii</i>	2	2017	1.71km south
Natterer’s bat	<i>Myotis nattereri</i>	3	2020	1.83km west
Noctule	<i>Nyctalus noctula</i>	33	2023	280m west
Pipistrelle sp.	<i>Pipistrellus sp.</i>	14	2019	640m southwest
Serotine	<i>Eptesicus serotinus</i>	17	2023	280m west
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	40	2023	280m west
Western barbastelle	<i>Barbastella barbastellus</i>	1	2015	1.71km south

- 3.2 There are records for long-eared bat sp. and myotis sp. within the local area. There is potential for changes in artificial lighting to impede foraging and commuting bats that may be using the general site; therefore, lighting specifications are detailed in Section 4 of this report to reduce obtrusive lighting impacts on bats.

Bat survey results

Preliminary Roost Assessment (PRA)

- 3.3 A description of the building surveyed for roosting bats is provided in Table 4 below and photographs of the building are provided in Appendix D:

Table 4: Building description

Building	Description
House ('B1')	- The property comprises a detached brick build house. - The roof is pitched and hipped with clay roof and ridge tiles. - The windows and door frames are constructed from wood and uPVC. - The facias are constructed from wood. - Wood cladding is present on the dormer on the northeast and southwest elevations. - Clay hanging tiles are present on the garage’s southeast elevation. - Two internal chimneys with lead flashing are present to the northeast and northwest. - A pitched and hipped clay roof orangery is present and attached to the southwest elevation of the house.

- A pitched and hipped clay roof garage is present and attached to the northeast of the house.
- Four connected loft sections are present within the loft void of the house and a description of which are provided below:
- Section 1:
 - The north loft section is rectangular and measures approximately 5m in length, 3m in width and 1.9m in height to the apex.
 - The roof is lined with reflective thermal bubble foil insulation.
 - A ridge beam is present.
 - Fibre glass insulation is present.
 - Partial boarding is present.
 - The loft is used for storage.
 - Mouse droppings were present.
- Section 2:
 - The northwest loft section is rectangular and measures approximately 3.4m in length, 2m in width and 1.9m in height to the apex.
 - The roof is lined with reflective thermal bubble foil insulation.
 - A ridge beam is present.
 - Boarding is present.
 - The loft is used for storage.
- Section 3:
 - The southeast loft section is rectangular and measures approximately 3.4m in length, 2.7m in width and 1.9m in height to the apex.
 - The roof is lined with reflective thermal bubble foil insulation.
 - A ridge beam is present
 - Boarding is present.
 - A boiler is present.
- Main section:
 - The southwest loft section is rectangular and measures approximately 3.3m in length, 2.4m in width and 1.9m in height to the apex.
 - The roof is lined with bituminous 1F felt.
 - A ridge beam is present
 - Fibre glass insulation is present.
 - Mouse droppings are present.

Potential bat entry/exit points:

- Gaps under raised roof tiles on the southwest gable.
- Gaps under raised ridge tiles on the southwest gable.
- Numerous raised tiles across the roof, including the southeast extension and rear orangery.
- Gaps between the flue lead seal and roof tiles.

Potential roosting areas:

- Gaps under lifted roof tiles across the roof.
- Crevices under raised roof tiles on the southwest gable.
- Hanging from the ridge beam in the main void.

Evidence of bats recorded (see Appendix G for map):

- Approximately 20 brown long-eared bat droppings were found stuck to the southwest gable wall within the main loft void.

	- Approximately 200 brown long-eared bat droppings found scattered under the ridge beam in the main loft void under the fibre glass insulation.
	DNA analysis of dropping sample (as tested by Swift Ecology Ltd):
	- Brown long-eared bat (<i>Plecotus auritus</i>)
	Roost status / potential of the building for bats:
	'Confirmed roost' for brown long-eared bats (main house) and 'high potential' for crevice dwelling bats (southeast extension and orangery).

3.4 Bat droppings were identified within the main loft void, therefore the building supports a 'confirmed' bat roost for brown long-eared bats (confirmed by DNA analysis of droppings). It is understood that the area/loft void where the bat droppings were located will not be impacted due to the localised area of the works, however, the southeast side extension and rear orangery had a high number of raised tiles and potential roosting provisions that were assessed to hold **'high potential'** for roosting bats in line with the BCT Guidelines (Collins, 2023).

3.5 Three bat activity (dusk) surveys were conducted upon the eastern side of the building in accordance with the BCT Guidelines (Collins, 2023); the results of the activity surveys are provided below.

Bat activity (dusk) surveys

3.6 The dusk surveys were undertaken upon the southeast building and a summary of the survey results are provided in Table 5 below (full results are provided in Appendix F and a map showing the locations of bat roosts / bat exit/entry points with surveyor locations is provided in Appendix H of this report):

Table 5: Summary of results from the dusk surveys

Date of survey	Bats recorded emerging from/re-entering the building	General bat activity recorded on site
11/06/2024	Between 22:10 and 22:31, three myotis sp. emerged from under the eaves in the top corner of the north elevation single story.	- The following bats were recorded generally commuting and foraging across the site during the survey: - Common pipistrelle - Soprano pipistrelle - Noctule - Myotis sp.
21/08/2024	Between 20:56 and 21:37, six myotis sp. emerged from under the eaves in the top corner of the north elevation single story.	- The following bats were recorded generally commuting and foraging across the site during the survey: - Common pipistrelle - Soprano pipistrelle - Myotis sp. - Long-eared bat sp.
11/09/2024	No bats were recorded emerging from or re-entering the building during the survey.	- The following species were recorded generally commuting and foraging across the site during the survey: - Common pipistrelle - Soprano pipistrelle - Long-eared bat sp.

Further survey effort

- 3.7 Prior to the second dusk activity survey on 21st August 2024, bat droppings were identified from underneath the previously recorded myotis sp. emergence location and a sample was collected for DNA analysis. The sample was tested by Swift Ecology Ltd and confirmed to belong to Natterer's bats.

Discussion and bat impact assessment

- 3.8 A bat roost was identified within the property, the roost has been classified in accordance with the CIEEM Bat Mitigation Guidelines (Reason, P.F. and Wray, S, 2023), as shown in Table 6 below:

Table 6: Impact assessment of the works on the onsite bat roost

Roost reference	Species	Roost type	Maximum count of bats during any one survey	Location of access point/roost	Importance of roost	Impact
Roost 1	Brown long-eared bat	<i>Possible day roost</i>	<i>Not surveyed</i>	Within the main section of the loft within the house, <i>no access point recorded</i>	Site	Retained
Roost 2	Natterer's bat	Day roost	6	Between the internal felt and plasterboard within the east extension roof (roost). Small gap at the eaves on the northeast elevation (access)	Site	Loss

- 3.9 The Natterer's bat roost was classified as a day roost as the number of bats recorded during the first survey (11th June) during the central point of the breeding was not indicative of a maternity roost (Natterer's bats have notoriously large maternity roosts). Although the number of bats increased in later surveys, no social calling was recorded, and all emerging bats were fully mature in size when observed during the emergence events. The Natterer's bats are considered to be crevice dwelling as this part of the extension is internally vaulted and no loft void is present.
- 3.10 The brown long-eared bat roost location is being retained and therefore was not observed during the activity surveys. Therefore, no accurate conclusions can be made in regard to this roost.
- 3.11 The building does hold limited bat hibernation potential in external crevices between the tiles and the felt; however, in accordance with the BCT Guidelines (Collins, 2023) assessment for hibernation roosting potential, the building does not support traditional hibernation features such as underground sites/tunnels/basements and so the site is

deemed to hold low potential to support hibernating bats. No further survey works are deemed to be required in relation to hibernation roosts.

- 3.12 The proposals will impact upon a day roost for a maximum count of six Natterer's bats. The brown long-eared bat roost will be retained as no works are proposed in this section of the loft void or in proximately to it. Following the 'Minimum Expectations for Bat Mitigation, Compensation, Monitoring and Management' document (Natural England, 2023), where more than small numbers of bats will be impacted; the provision of at least one feature, suitable for the species concerned (e.g., bat box/tile/brick/crevice) per roost and species to be impacted is considered appropriate.

- 3.13 **As the works will impact an identified bat roost, a bat European Protected Species (EPS) mitigation licence from Natural England will be required following planning approval and prior to any works commencing. An EPS licence is required to ensure the works are lawful and can only be obtained following approval of all consent(s).**

Artificial Lighting at Night (ALAN)

- 3.14 The development is also anticipated to result in a change to Artificial Lighting At Night (ALAN) through internal light spill and external light fixtures.
- 3.15 Illuminating a bat roost can cause disturbance and this may result in the bats abandoning the roost, or even becoming entombed within it (BCT & ILP, 2023). Lighting is therefore considered an obstruction under the legislation protecting bats and their roosts. ALAN is consequently a key consideration and must be controlled to minimise impacts on bats that are roosting within the buildings on site.
- 3.16 Numbers of commuting and foraging bats were also recorded across the general property and within the gardens. Bats are very sensitive to artificial lighting, which can impede their ability to successfully forage and can alter flightpaths (BCT & ILP, 2023). As bats are using the property during nocturnal hours, it is also essential that new lighting is designed to minimise impacts on foraging bats, particularly around areas with mature vegetation such as trees and hedges. Light spill can extend beyond the site boundary and may therefore also impact bats using neighbouring land.
- 3.17 A bat mitigation, compensation and plan and details of the EPS bat licensing process are detailed in Section 4 of this report.

Nesting birds

- 3.18 No evidence of nesting birds was recorded within or around the building on site. The potential for nesting birds is considered to be negligible as no ingress points for birds was noted. Therefore, it is considered unlikely nesting birds would be impacted by the proposed development and no further action is recommended for nesting birds.

4. Mitigation, compensation and enhancement plan

Conclusions on roosting bats

- 4.1 The PRA and dusk surveys of Graiswold, Wokingham were undertaken, and the building was identified to support a day roost for a maximum count of six Natterer's bats and a day roost for a low number of brown long-eared bats, which are of 'site' importance. The proposals for two second-storey extensions and replacement orangery will result in the permanent loss of the Natterer's bat day roost. The brown long-eared bat roost within the main loft void will be retained.
- 4.2 As the proposals will result in impacts on the Natterer's bat day roost, a works method statement must be followed under a bat European Protected Species (EPS) mitigation licence from Natural England. The EPS licence can only be obtained following approval of all consent(s) and must be obtained in advance of any works commencing.

EPS licence application

- 4.3 A bat EPS licence from Natural England must be sought to allow works to proceed lawfully. The licence must pass three legal tests in order to be approved, the three tests are as follows:
1. The development is in the interests of public health and safety or is required for other imperative reasons of overriding public interest.
 2. There must be no satisfactory alternative that will cause less harm to the species.
 3. The development must not harm the long-term conservation status of the bat species.
- 4.4 As noted in the R (Vivienne Morge) V Hampshire County Council 2011 case, the three legal tests must be addressed at the planning stage. The tests have been assessed below:

Imperative reasons of overriding public interest

- 4.5 The extensions are required by the applicant's family to provide increased living accommodation. The family are currently lacking living space and a larger bedroom and living space is required. The family do not own an alternative home and the extensions are required to meet the growing needs of the family.

No satisfactory alternative

- 4.6 The applicant's family wish to make the property their home for the foreseeable future. The 'do nothing' option has been discounted as the family require additional living space. Full demolition and rebuild of the property was not considered a viable alternative as this would not be economically viable and would result in the full destruction of all identified bat roost within the property. Extensions to the property have been judged as the most satisfactory method for ensuring the needs of the family are met, whilst ensuring the preservation of the onsite bat population.

Maintenance of the long-term conservation status of the bat species

- 4.7 The bat mitigation and compensation plan provided below details mitigation and compensation measures required to maintain the long-term conservation status of the onsite bat population.

Bat mitigation, compensation and enhancement plan

- 4.8 The bat mitigation, compensation and enhancement plan to be implemented under the EPS licence is provided in Table 7 overleaf; this strategy is guided by the 'Minimum Expectations for Bat Mitigation, Compensation, Monitoring and Management document (Natural England, 2023) (see Appendix I for plan).

Table 7: Bat mitigation, compensation and enhancement plan

Phase of works	Action	Description	Notes to applicant:
<i>Post-planning and before any works commence to the building(s)</i>	1. Contact project ecologist once all planning consent(s) are obtained.	Contact project ecologist to determine whether any update surveys are required for the bat European Protected Species (EPS) bat mitigation licence application to Natural England (NE).	- An update PRA (building inspection) will be required within 3 months of the licence application. The PRA can be undertaken at any time of year. - A minimum of one update dusk survey will be required if the EPS licence is applied for after April 30th the year following the dusk surveys (e.g. surveys conducted in May/June 2024 and licence is applied for in May 2025, therefore a minimum of one update dusk survey required in 2025 before licence application). The update dusk survey(s) can only be conducted between May and August. It is important to factor this into your project timescales.
	2. EPS licence is submitted to Natural England for approval.	EPS licence application submitted to Natural England for approval following any required update survey(s) by the ecologist.	- The ecologist will require time to prepare the licence application, and during busy periods this can take a number of weeks. - Following submission to NE, the EPS licence application takes a minimum of three weeks to be obtained following submission, however, the applicant should note that this can take longer depending on how busy NE are at the time of submission. Works to the building affecting the bat roost cannot commence until the EPS licence is approved.

Phase of works	Action	Description	Notes to applicant:
	3. EPS licence is approved from NE; contact ecologist.	• EPS licence is approved from NE. Contact ecologist to schedule works start date and supervision of works by an ecologist (see 'works method statement' under below).	• Ensure adequate time is allocated to schedule in contractors and class 2 licensed bat ecologist, as the ecologist will need to be onsite during works.
	4. Erection of a bat box on a tree within applicant's ownership (see Appendix I for full details and figures).	• Prior to any works commencing and following approval of the EPS licence, one '2F Schwegler Bat Box' must be erected on a suitable mature tree within the applicant's ownership (see Figure 7). • The box must be erected at a minimum of 3.5 metres (m) from ground level on a sunny aspect. Any limbs/branches must be pruned back around the entrance and below the bat box to ground level to ensure the entrance to the box is unobstructed and allows for a clear flightpath.	• Bat boxes can be purchased by the applicant from https://www.nhbs.com/2f-schwegler-bat-box-general-purpose
Works/demolition phase following approval of EPS licence – works method statement	5. Works can commence and ecologist attends site to undertake supervision of all destructive works. Works method statement to be followed by all contractors.	Works method statement:	• A class 2 licensed bat ecologist must be present onsite during <i>all</i> works affecting the bat roost(s). If the ecologist is not present during these works, this would constitute a breach of the EPS licence. • Temperature and weather restrictions apply for all works affecting the bat roost(s): - No works can take place during adverse conditions including heavy rain and/or strong winds. This is on welfare grounds to bats.
		• 'Toolbox talk': Prior to any works commencing onsite, the licensed bat ecologist will provide a 'toolbox talk' to all contractors regarding the bat EPS licence, legal protection of bats, the onsite bat roosts and potential for bats to be present in the works areas, the contractors' responsibilities, health and safety, and best working practice to avoid injuring any bats. • Pre-works loft inspection: Prior to any works commencing, the ecologist will the access point/emergence gap. If any bats are present and where possible, the ecologist will capture any bats roosting internally by gloved hand or static net	

Phase of works	Action	Description	Notes to applicant:
		where appropriate. Any bats found will be transported to a bat box already erected onsite. • Destructive works: Following the internal check, the ecologist will directly supervise the 'soft' dismantling of all building areas with potential for bats. Features such as roof tiles, felt, eaves, mortar, timbers and wall tops will be carefully dismantled by hand and hand tools only. Features will be removed carefully by contractors and inspected for bats / evidence of bats. Should a bat be present, the licensed ecologist will capture and translocate the bat to the bat box. • Injured/underweight bats: Any injured or underweight bats will be immediately taken into care (as directed by the Batworker's Manual, s. 7. 3, pp 64 – 66; 3rd ed. 2004 and in accordance with the Bat Conservation Trust's (BCT) Bat Care Guidelines: A Guide to bat care for rehabilitators 2nd ed 2016). • Continuing works: Once all features deemed suitable for bats have been carefully dismantled and inspected by the licensed ecologist, works may then continue unsupervised.	- Winter works (mid-November – mid-March) can only commence following four consecutive days/nights when temperatures are at 8°C or above. • In the event a bat is found during any unsupervised time, the applicant is legally obliged to stop all works immediately and contact the project ecologist for advice. • All persons other than the class 2 licensed bat ecologist are strictly forbidden from handling or interfering with bats in any way.

Phase of works	Action	Description	Notes to applicant:
	6. Permanent replacement bat roost and enhancement bat roosting features to be constructed (refer to Appendix I for full details and list of figures).	Replacement bat roost to be created:	- NOTE: photographic evidence of the installed bat box must be supplied to the ecologist by the applicant for the bat licence return. The applicant is advised to speak to their contractors in advance of these works to ensure photographs can be taken in advance; failure to supply this evidence will result in a breach of the EPS licence. - No external light fixtures must be erected within at least 5m of the installed bat box (see 'Artificial Lighting at Night (ALAN)' below for full strategy). - The 'Vivara Pro Build-in WoodStone Bat Box' can be purchased by the applicant from https://www.nhbs.com/vivara-pro-build-in-woodstone-bat-box.
		- One 'Vivara Pro Build-in WoodStone Bat Box' will be installed on the northeast elevation within the newly constructed extension, as close to the original eaves as possible (Appendix I). - The box will be installed within the masonry of the new elevation and is completely self-contained. The entrance hole is discrete and the majority of the box can be hidden within the cavity and bricked/rendered over. - The materials directly below the entrance to the bat tube must not be glossy/slippery with a clear area free of obstructions such as aerials/cables 2m below the tube. - The box is completely self-contained and does not allow bats to entry the wall cavity. The tube also requires no maintenance as any bat droppings fall out of the entrance ramp.	
		Enhancement bat roosting features:	
		- To ensure the application is compliant with the National Planning Policy Framework (NPPF) and local planning policy, one additional 'Vivara Pro Build-in WoodStone Bat Box' will be installed at eaves level on the southeast elevation of the new extension (Appendix I). - The box must be installed with the same specifications/designs as mentioned above.	
		Artificial Lighting at Night (ALAN):	

Phase of works	Action	Description	Notes to applicant:
	7. Installation of external light fixtures and internal light spill - Artificial Lighting at Night (ALAN)	- In addition to bats roosting within the property, a number of commuting / foraging bats use the general property. The following specifications for lighting must be adhered to and are based upon the 'Bats and Artificial Lighting At Night' Guidance Note BN08/23 (BCT & ILP, 2023): - No external light fixtures will be installed within 5m of the replacement/existing bat roost access points and roosting features. - Preferably, no additional new external light fixtures will be installed. If external lighting is required, this will be installed for safety purposes only. No external luminaires will be installed where these will cast light spill onto surrounding vegetation, such as mature trees. - All luminaires will lack UV elements when manufactured. Metal halide, compact fluorescent sources will not be used. - Only LED type luminaires will be used due to their sharp cut-off, lower intensity, good colour rendition and dimming capability. - A warm white light source (2700Kelvin or lower) will be adopted to reduce blue light component. - Light sources will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012). - Internal luminaires will be recessed only (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill. - Column heights must be carefully considered to minimise light spill and glare visibility. This must be balanced with the potential for increased numbers of columns and upward light reflectance.	- The applicant is advised that illuminating a bat roost can cause disturbance and this may result in the bats deserting the roost, or even becoming entombed within it. Lighting is therefore considered an obstruction under the legislation protecting bats and their roosts; lighting will also be a condition of the EPS licence. - ALAN holds potential to negatively impact foraging bats using the general property, in addition to other nocturnal wildlife. Lighting causes disturbance and impedes the ability of bats to successfully forage, with long-eared bats being among the most affected by artificial lighting. It is therefore of the utmost importance that lighting is carefully designed to ensure safety purposes only but to minimise impacts on bats.

Phase of works	Action	Description	Notes to applicant:
		- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, will be used. - Luminaires must always be mounted horizontally, with no light output above 90° and/or no upward tilt. - External security lighting will be set on motion sensors and set to a 1 minute (or less) timers. - Bollard or low-level downward-directional luminaires will not be installed. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, and increased upward light scatter from surfaces. - Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and must not be relied upon solely.	

Phase of works	Action	Description	Notes to applicant:
Post-works phase – completion of works	8. Submit photographic evidence of replacement bat roost for bat licence return.	Upon completion of the works, the applicant must contact the ecologist with photographic evidence of all replacement bat roosting features for submission to Natural England.	- NOTE: photographic evidence of the replacement bat roost must be supplied to the ecologist by the applicant for the bat licence return. - The applicant is advised to speak to their contractors / roofers <i>in advance</i> of the works to ensure that good quality photographs of bat roosting features are obtained during the course of works. - Failure to supply this evidence will result in a breach of the EPS licence. The Local Planning Authority may also request a compliance visit post-works.

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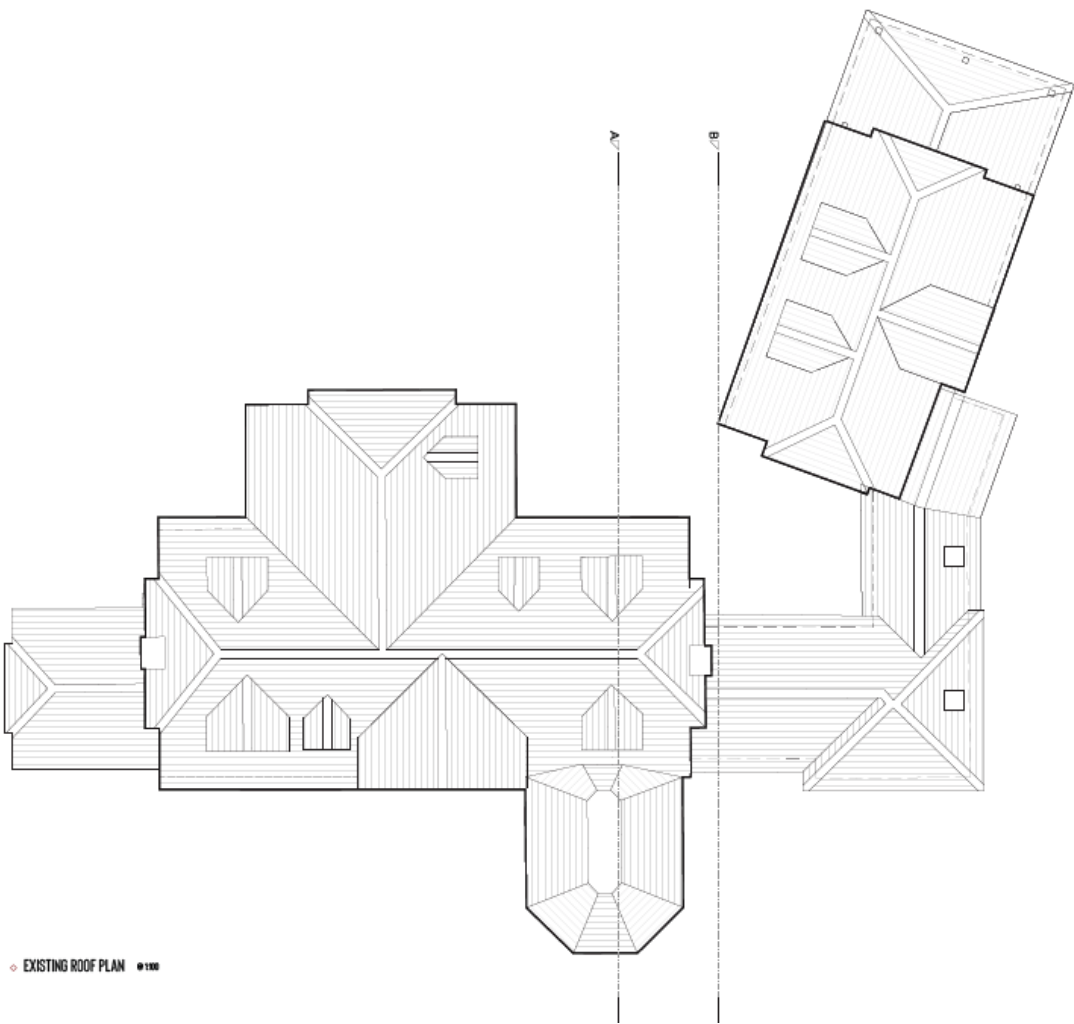
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Wokingham Borough Council (2010). Wokingham Borough Local Development Framework Adopted Core Strategy Development Plan Document (Adopted January 2010). Accessed from: <https://www.wokingham.gov.uk/planning-policy/adopted-development-plan/local-plans>.

Appendix A: Site location plan and existing plans

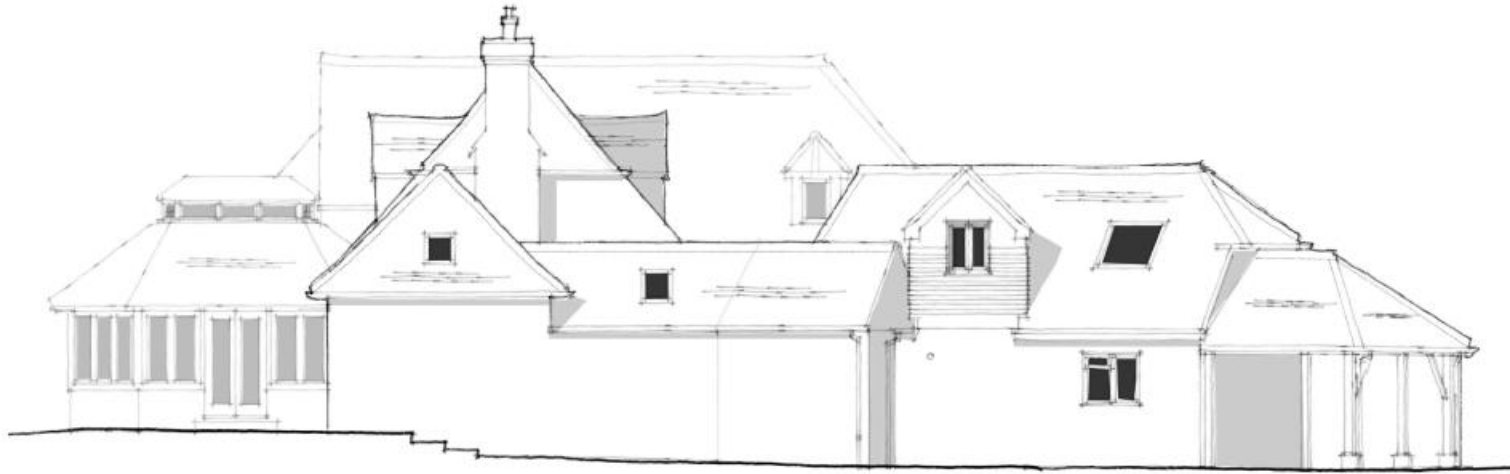




◇ EXISTING PRINCIPAL ELEVATION/SECTION @ 1:100
(NORTH-EAST FACING)

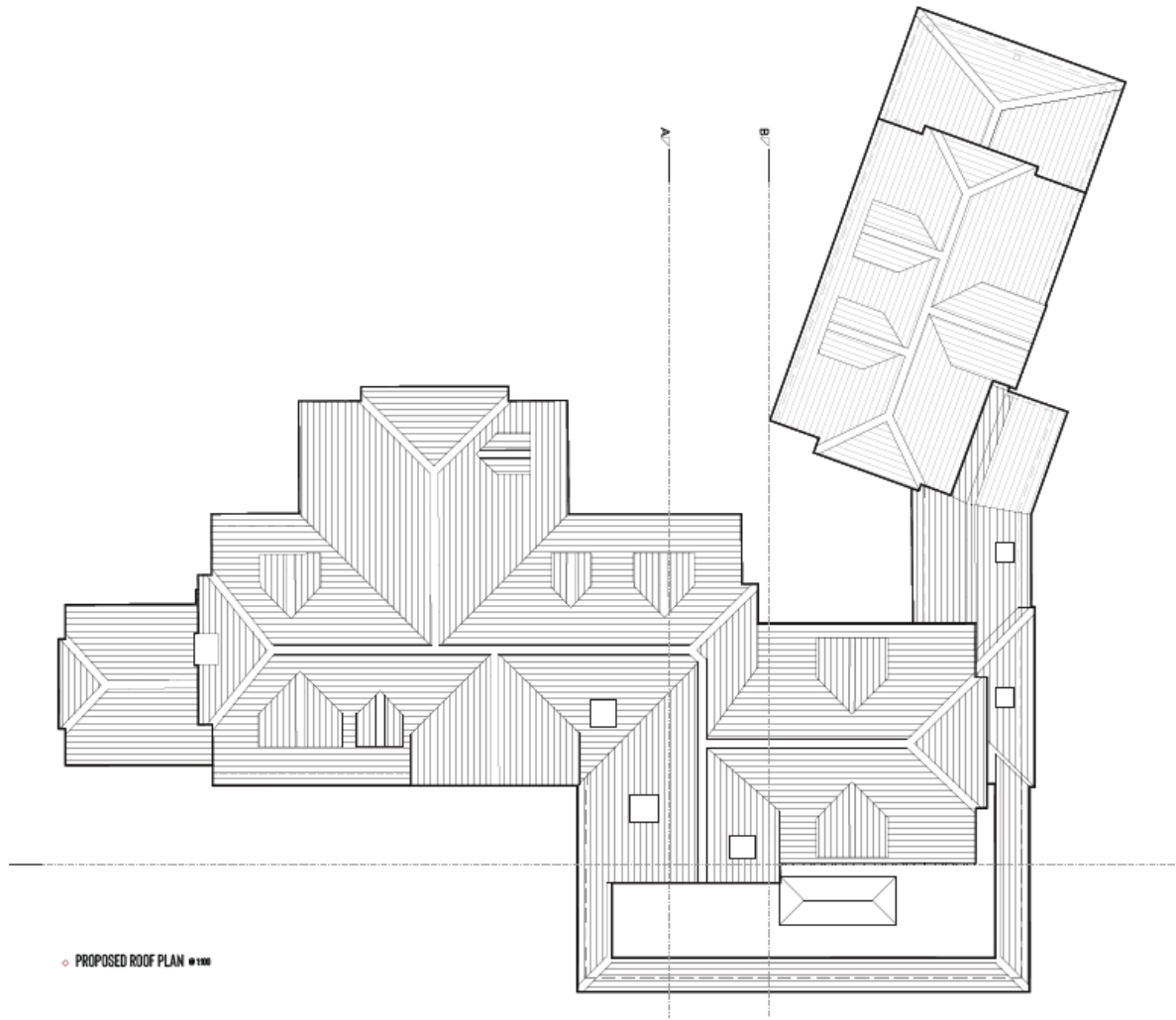


◇ EXISTING REAR ELEVATION @ 1:100
(SOUTH-WEST FACING)



◇ EXISTING SIDE ELEVATION -2 OF 2 @ 1/100
(SOUTH-EAST FACING)

Appendix B: Proposed plans

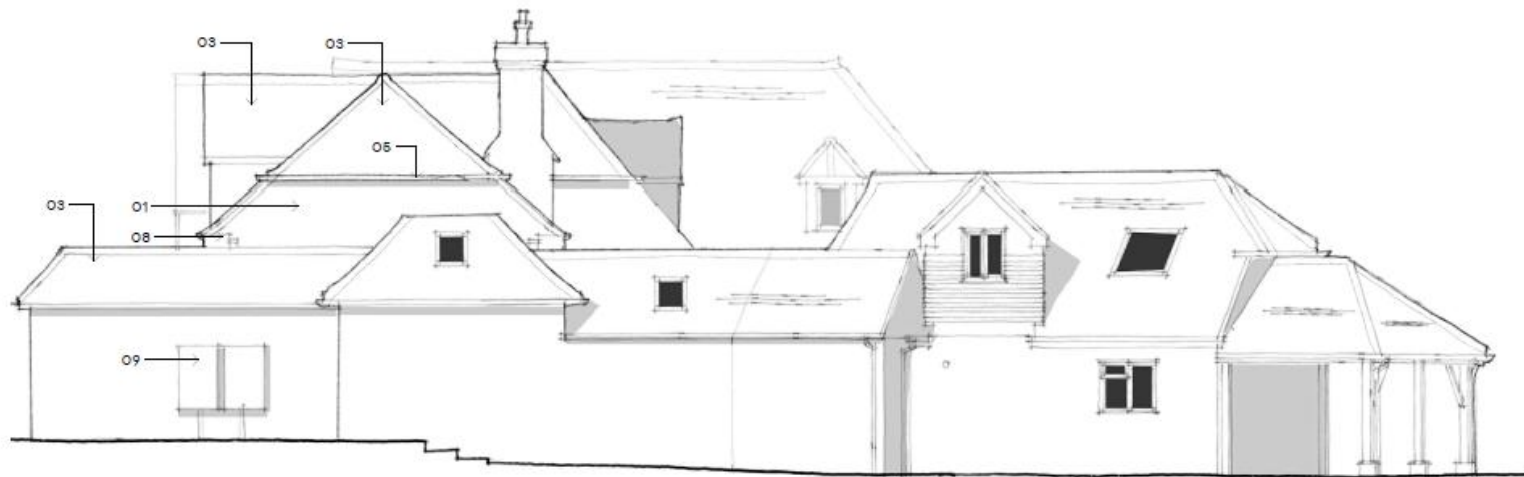






◇ PROPOSED REAR ELEVATION
(SOUTH-WEST FACING)

@ 1:100



◇ PROPOSED SIDE ELEVATION - 2 OF 2
(SOUTH-EAST FACING)

@ 1:100

Appendix C: Relevant legislation and planning policy

Legislation and UK BAP priority species

Legislation – bats

In England, all bats are legally protected under Schedule 5 of the Wildlife and Countryside Act (WCA) (1981) (as amended). Additionally, all bats are fully protected under Annex IV of the EC Habitats and Species Directive (1992), which is transposed into UK law under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

The legislation protects bats from many acts, including to:

1. Deliberately take, injure or kill a wild bat.
2. Intentionally or recklessly disturb a bat in its roost or deliberately disturbing a group of bats.
3. Destroy or damage a place used by bats for breeding or roosts (even if bats are not occupying them at the time).
4. Intentionally or recklessly obstruct access to a bat roost.
5. Possess or advertise/sell/exchange a bat species found in the wild in the EU (dead or alive) or any part of a bat.

Several species of bat are afforded additional protection under Annex II of the EC Habitats and Species Directive (1992) due to their rarity. These species include lesser horseshoe (*Rhinolophus hipposideros*), greater horseshoe (*Rhinolophus ferrumequinum*), Bechstein's bat (*Myotis bechsteinii*) and barbastelle bat (*Barbastella barbastellus*).

Legislation – birds

In England and Wales, all wild birds, their young, nests and eggs are legally protected under Section 1 of the WCA (1981) (as amended). This legislation protects birds from the following acts:

1. To kill, injure or take any wild bird.
2. To take, damage or destroy the nest of a wild bird.
3. To take, damage or destroy the nest of any wild bird while that nest is in use or being built.
4. Takes or destroys an egg of any wild bird.

Some wild bird species, such as barn owls (*Tyto alba*) are afforded additional protection under Schedule 1 of the WCA (1981) (as amended). This legislation makes the following illegal for Schedule 1 species:

1. Disturbance of any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
2. Disturbs dependent young of such a bird.

UK BAP priority bat and bird species

Several species are listed under the UK Biodiversity Action Plan (UK BAP) (JNCC, 2016) as priority species due to their vulnerability or rarity as listed under Section 41 of the Natural Environment

and Rural Communities (NERC) Act (2006), and Section 40 places a duty on all public authorities to conserve biodiversity.

Bats include barbastelle, Bechstein's bat, brown long-eared bat (*Plecotus auritus*), both species of horseshoe bat (*Rhinolophus spp.*), soprano pipistrelle (*Pipistrellus pygmaeus*) and noctule (*Nyctalus noctula*).

Birds that commonly nesting in buildings include house sparrow (*Passer domesticus*) and common starling (*Sturnus vulgaris* subsp. *vulgaris*).

National and local planning policy

The National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) (Department for Levelling Up, Housing and Communities, 2023) sets out the Government's planning policies for England and how these should be applied. In the context of this report, Section 15 of NPPF is relevant and applicable, Section 15 states:

'Planning policies and decisions should contribute to and enhance the natural environment by minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.'

New developments and projects are supported where plans promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue measurable net gains for biodiversity.

To ensure this application is compliant with Section 15 of NPPF, enhancements for biodiversity, such as the inclusion of bat roosting and/or bird nesting boxes, are required as part of the development.

Wokingham Borough Local Development Framework Adopted Core Strategy Development Plan

The Wokingham Borough Local Development Framework Adopted Core Strategy Development Plan (Wokingham Borough Council, 2010) was adopted in January 2010 and includes the following relevant policy:

CP7 - Biodiversity

Sites designated as of importance for nature conservation at an international or national level will be conserved and enhanced and inappropriate development will be resisted. The degree of protection given will be appropriate to the status of the site in terms of its international or national importance.

Development:

- a) Which may harm county designated sites (Local Wildlife Sites in Berkshire), whether directly or indirectly, or
- b) Which may harm habitats or, species of principle importance in England for nature conservation, veteran trees or features of the landscape that are of major importance for wild flora and fauna (including wildlife and river corridors), whether directly or indirectly, or

- c) That compromises the implementation of the national, regional, county and local biodiversity action plans will be only permitted if it has been clearly demonstrated that the need for the proposal outweighs the need to safeguard the nature conservation importance, that no alternative site that would result in less or no harm is available which will meet the need, and:
 - i. Mitigation measures can be put in place to prevent damaging impacts; or
 - ii. Appropriate compensation measures to offset the scale and kind of losses are provided.

It is the applicant's/landowner's responsibility to ensure that the proposed development proceeds in full compliance with this report and/or any update version report thereafter, that works are undertaken lawfully, in compliance with national and local policy, and in accordance with all conditions of the obtained planning consent(s).

Appendix D: Photographs



Photo 1: Front elevation.



Photo 2: Front elevation.



Photo 3: Front elevation.



Photo 4: Side elevation.



Photo 5: Rear elevation.



Photo 6: Rear elevation and orangery.



Photo 7: Rear orangery.



Photo 8: Southeast extension.



Photo 9: Rear elevation gable end.



Photo 10: Internal of Void 1.



Photo 11: Internal of Void 1.



Photo 12: Void 1, viewing Void 2.



Photo 13: Internal of Void 3.



Photo 14: Internal of Void 3.



Photo 15: Internal of Main Void, viewing Void 3.



Photo 16: Internal of Void 2, viewing Main Void.



Photo 17: Internal of Main Void.



Photo 18: Internal of Main Void.



Photo 19: Bat droppings within Main Void.

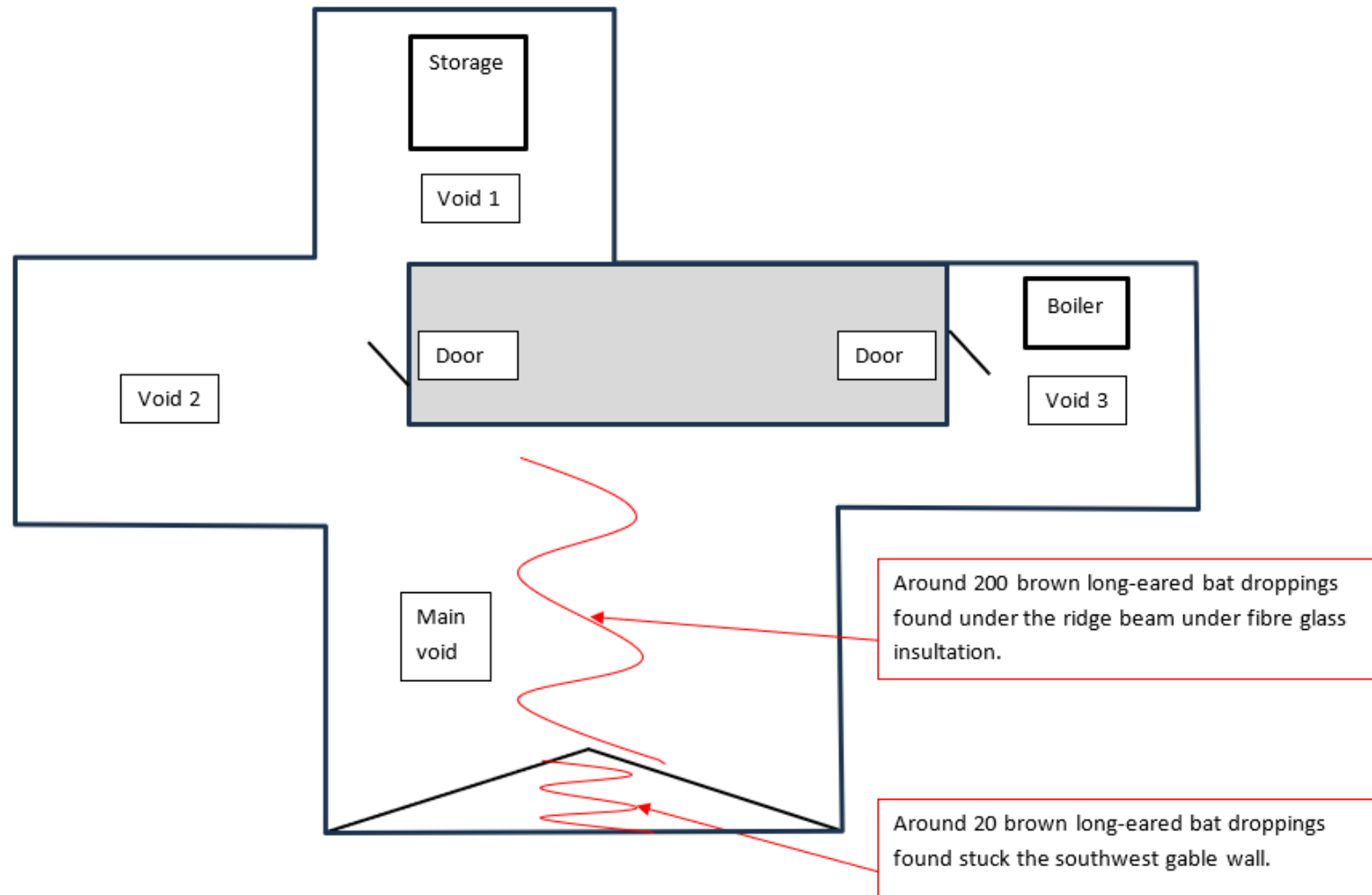


Photo 20: Bat droppings within Main Void.



Photo 21: Bat droppings within Main Void.

Appendix E: Bat evidence map



Appendix F: Bat activity (dusk) survey results

Figure 1: Bat activity (dusk) survey results

Bat activity (dusk) survey						
Date: 11/06/24	Sunset: 21:19	Weather conditions : Cloudy	Precipitation: None	Site location: Graiswold		
Temp: Start: 11°C End: 10°C	Beaufort wind force (Bft): 0/12	Detectors used: EchoMeter Touch 2 + tablets x 2		Oktas cloud cover: 8/8	Start Time: 21:06	End Time: 22:49
Surveyor:		Surveyor position:		NVA used? (Y/N):	NVA equipment used:	
Peter Wills		North		Y	Nightfox Whisker	
Laurence Wills		Southeast		Y	Nightfox Whisker	
Unmanned camera		West		Y	Nightfox Whisker	
Time	Sp. if ID'd	Number of bats		Comments on behaviour/activity		
21:38	Common pipistrelle	1		Heard not seen and foraging from the north of the site.		
21:56	Soprano pipistrelle	1		Commuted from the east to the west along the south elevation.		
22:00	Common pipistrelle	1		Commuted from the south to the north over the east roof.		
22:01	Noctule	1		Heard not seen from the north.		
22:10	Myotis	2		Emerged from under eaves on the north elevation single story (red circle).		
22:11	Myotis	1		Commuted from the west to the east within the courtyard.		
22:31	Myotis	1		Emerged from the top corner of the eaves (red circle).		
22:33	Noctule	1		Heard not seen from the north.		

Figure 2: Screenshots of the darkest point recorded during survey for NVA Nightfox Whiskers and bat emergence



Figure 3: Bat activity (dusk) survey results

Bat activity (dusk) survey						
Date: 21/08/24	Sunset: 20:12	Weather conditions : Calm	Precipitation: None	Site location: Graiswold		
Temp: Start: 18°C End: 16°C	Beaufort wind force (Bft): 0/12	Detectors used: EchoMeter Touch 2 + tablets x 2		Oktas cloud cover: 2/8	Start Time: 19:57	End Time: 21:42
Surveyor:		Surveyor position:		NVA used? (Y/N):	NVA equipment used:	
Laurence Wills		Southwest		Y	Nightfox Whisker	
Peter Wills		East		Y	Nightfox Whisker	
Unmanned camera		West		Y	Nightfox Whisker	
Time	Sp. if ID'd	Number of bats		Comments on behaviour/activity		
20:24	Common pipistrelle	1		Heard not seen from the east.		
20:27	Soprano pipistrelle	1		Foraging around in the rear garden.		
20:37	Common pipistrelle	1		Heard not seen from the east.		
20:47	Common pipistrelle	1		Heard not seen from the east.		
20:52	Myotis sp.	1		Foraging around in the rear garden.		
20:56 – 21:37	Myotis sp.	6		Emerged from under eaves on the north elevation single story (red circle).		
20:57	Common pipistrelle	1		Heard not seen from the southwest.		
21:13	Long-eared sp.	1		Heard not seen from the east.		
21:30	Common pipistrelle	1		Heard not seen from the southwest.		
21:34	Common pipistrelle	1		Heard not seen from the southwest.		

Figure 4: Screenshot of the darkest point recorded during survey for NVA Nightfox Whiskers and bat emergence



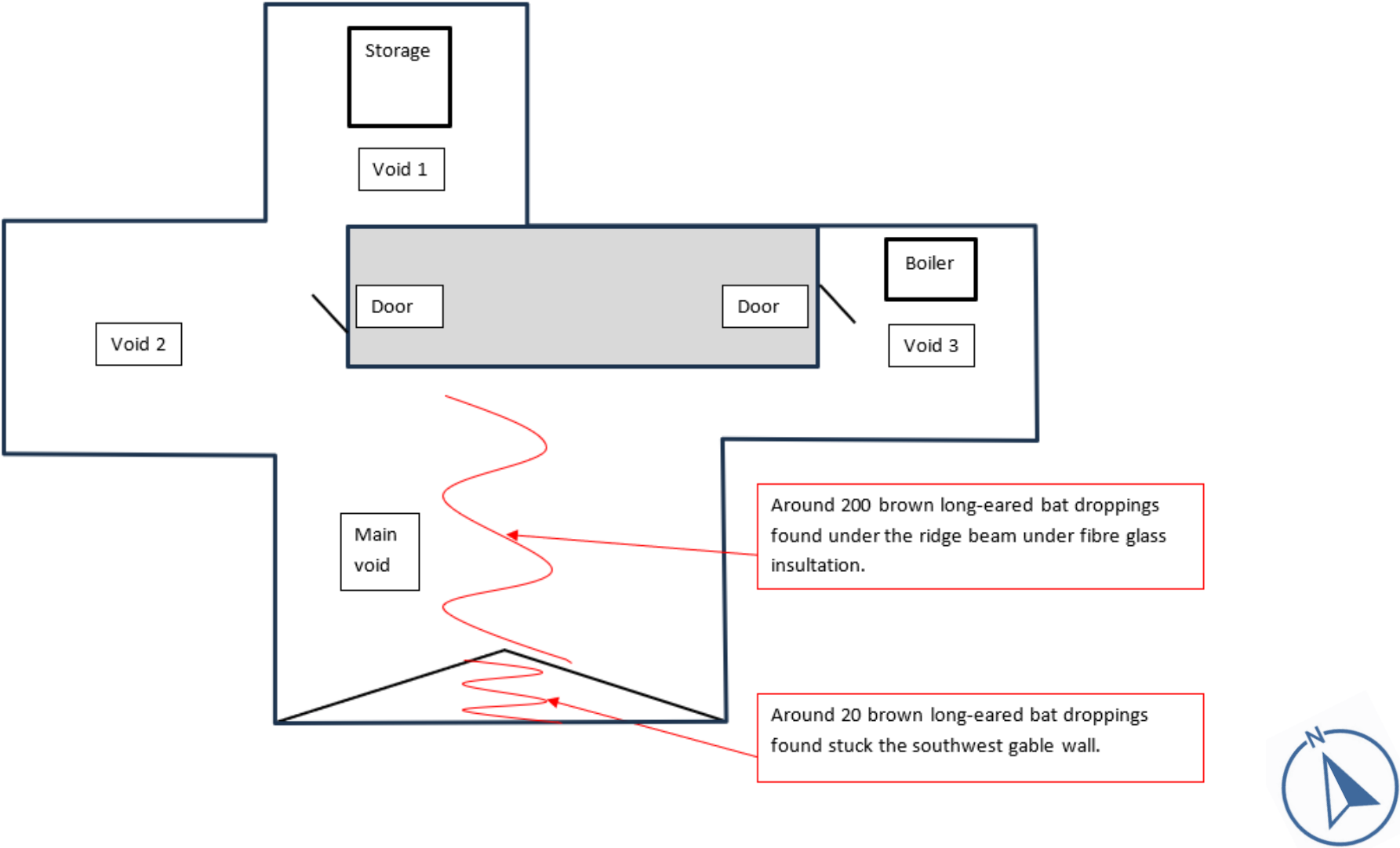
Figure 5: Bat activity (dusk) survey results

Bat activity (dusk) survey						
Date: 11/09/24	Sunset: 19:26	Weather conditions: Cold and damp	Precipitation: N/A	Site location: Graiswold, Wokingham		
Temp: Start: 10°C End: 8°C	Beaufort wind force (Bft): 0/12	Detectors used: EchoMeter Touch 2 + tablets x 2		Oktas cloud cover: 6/8	Start Time: 19:11	End Time: 20:56
Surveyor:		Surveyor position:		NVA used? (Y/N):	NVA equipment used:	
Chloe Whittaker (cam 6)		South		Y	Nightfox Whisker	
Emily Parsons		Southeast		Y	Nightfox Whisker	
Unmanned (cam 7)		Southwest		Y	Nightfox Whisker	
Time	Sp. if ID'd	Number of bats		Comments on behaviour/activity		
19:38-19:40	Common pipistrelle	1		Seen in the south, foraging amongst the trees at the bottom of the garden.		
19:39	Common pipistrelle	1		Seen in the southeast, commuting north to west.		
19:43	Soprano pipistrelle	1		Heard but not seen in the southeast.		
19:44	Common pipistrelle	1		Heard but not seen in the south.		
19:45	Long-eared sp.	1		Heard but not seen in the south.		
19:48	Common pipistrelle	1		Heard but not seen in the south.		
19:49	Common pipistrelle	1		Heard but not seen in the southeast.		
19:53	Common pipistrelle	1		Heard but not seen in the south.		
19:55	Soprano pipistrelle	1		Heard but not seen in the south.		
19:58-20:02	Common pipistrelle	1		Heard but not seen in the south.		
20:21-20:22	Common pipistrelle	1		Heard but not seen in the south.		
20:29	Long-eared sp.	1		Heard but not seen in the south.		
20:30	Long-eared sp.	1		Heard but not seen in the southeast.		
20:34	Long-eared sp.	1		Heard but not seen in the south.		
20:35	Long-eared sp.	1		Heard but not seen in the southeast.		
20:40	Long-eared sp.	1		Heard but not seen in the south.		
20:42	Long-eared sp.	1		Heard but not seen in the south.		
20:42	Soprano pipistrelle	1		Heard but not seen in the south.		
20:45-END	Long-eared sp.	1		Heard but not seen in the south.		
20:46	Soprano pipistrelle	1		Heard but not seen in the south.		

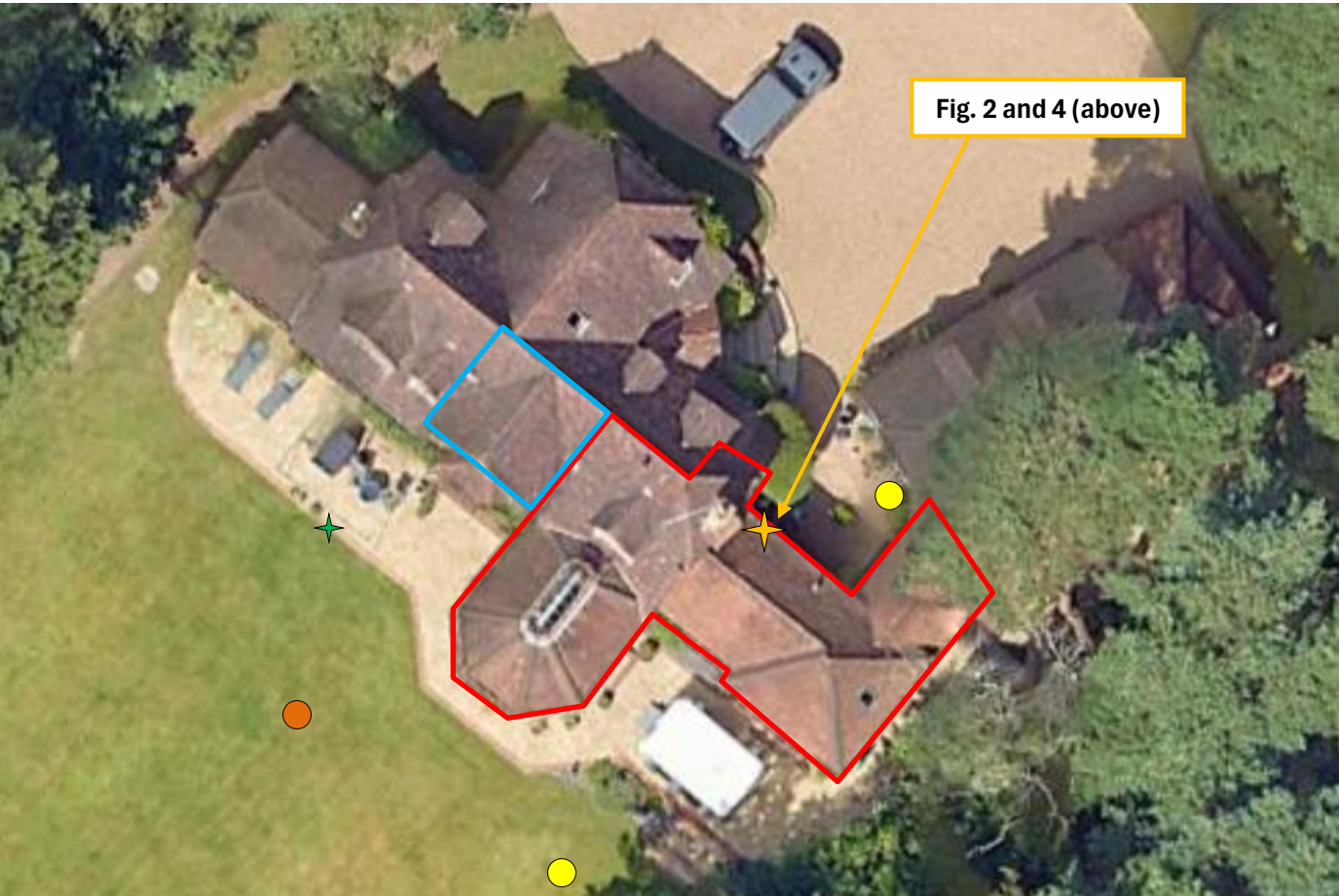
Figure 6: Screenshot of the darkest point recorded during survey for NVA Nightfox Whiskers



Appendix G: Bat evidence map



Appendix H: Locations of bat roosts, bat exit/entry points & surveyor locations



LEGEND: Figure 1	
Key:	Description:
	Surveyor position
	Unmanned camera
	Section of the building subject to dusk surveys
Bat roosts and bat access point locations:	
	Natterer's bat access point (x 6 bats) * to be lost through extension creation
	Assumed brown long-eared day roost in main loft void to be retained

*Maximum count of six bats exiting from access point during any one survey

Image taken from Google Maps 2024



Appendix I: Bat mitigation, compensation and enhancement plan

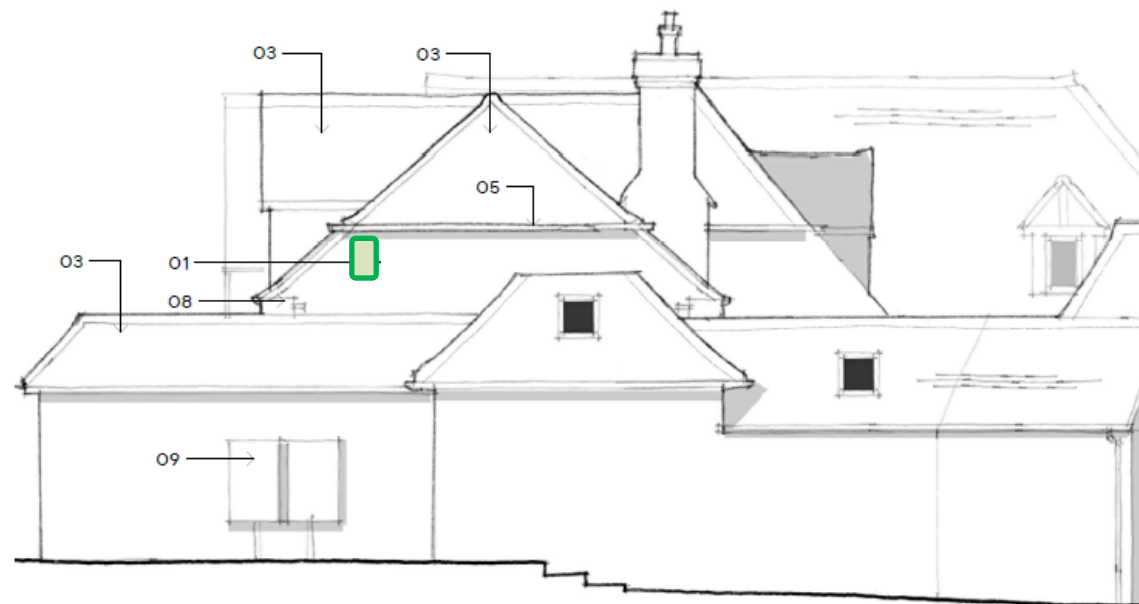


Figure 7: Aerial image to show possible location of the temporary bat box.

LEGEND:	
Key:	Description:
	One '2F Schwegler Bat Box' must be erected on a suitable mature tree within the applicant's ownership. The box must be erected at a minimum of 3.5 metres (m) from ground level on a sunny aspect. Any limbs/branches must be pruned back around the entrance and below the bat box to ground level to ensure the entrance to the box is unobstructed and allows for a clear flightpath.



◇ PROPOSED PRINCIPAL ELEVATION/SECTION @ 1:100
(NORTH-EAST FACING)



◇ PROPOSED SIDE ELEVATION - 2 OF 2 @ 1:100
(SOUTH-EAST FACING)

LEGEND:	
Key:	Description:
	One 'Vivara Pro Build-in WoodStone Bat Box' will be installed on the northeast elevation of the building, as close to the previous location of the eaves (Fig. 7)
	One additional 'Vivara Pro Build-in WoodStone Bat Box' will be installed at eaves level on the southeast elevation of the new extension (Fig. 7)

Figure 8: *Vivara Pro Build-in WoodStone Bat Box (x2 required)*

