

# Bentley Cottage, Painswick

## Preliminary Ecological Appraisal (PEA) & Bat Survey Report

Prepared for: Mrs Thea Bond

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## Basis of Report

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## 1.0 Introduction

### 1.1 Background

Hillcrest Ecology was commissioned by Mrs Thea Bond in June 2023 to undertake a Preliminary Roost Appraisal (PRA) survey of Bentley Cottage, Vicarage Road, Painswick, GL6 6XU (hereafter referred to as ‘the site’). The approximate Ordnance Survey grid reference for the site is SO 86855 09713 and the site boundary is outlined in red in Figure 1 below. As part of the PRA survey, details of the habitats within and adjacent to the site and their potential to support protected species was also recorded. Following completion of the PRA survey, further presence / absence bat surveys were recommended and these surveys were subsequently completed by Hillcrest Ecology in August and September 2023. The surveys were completed to inform a Preliminary Ecological Appraisal (PEA) for the proposed renovation and extension of Bentley Cottage, with further details of the proposed development provided in Section 1.3.



Figure 1: Aerial Photograph showing the site boundary outlined in red (Google Earth, 2023)

### 1.2 Site Description

The site is located on the eastern side of Painswick village in Gloucestershire, approximately 220m east of the main A46 road which runs through the centre of the village. The location of the site in relation to the surrounding area is highlighted in red in Figure 2.

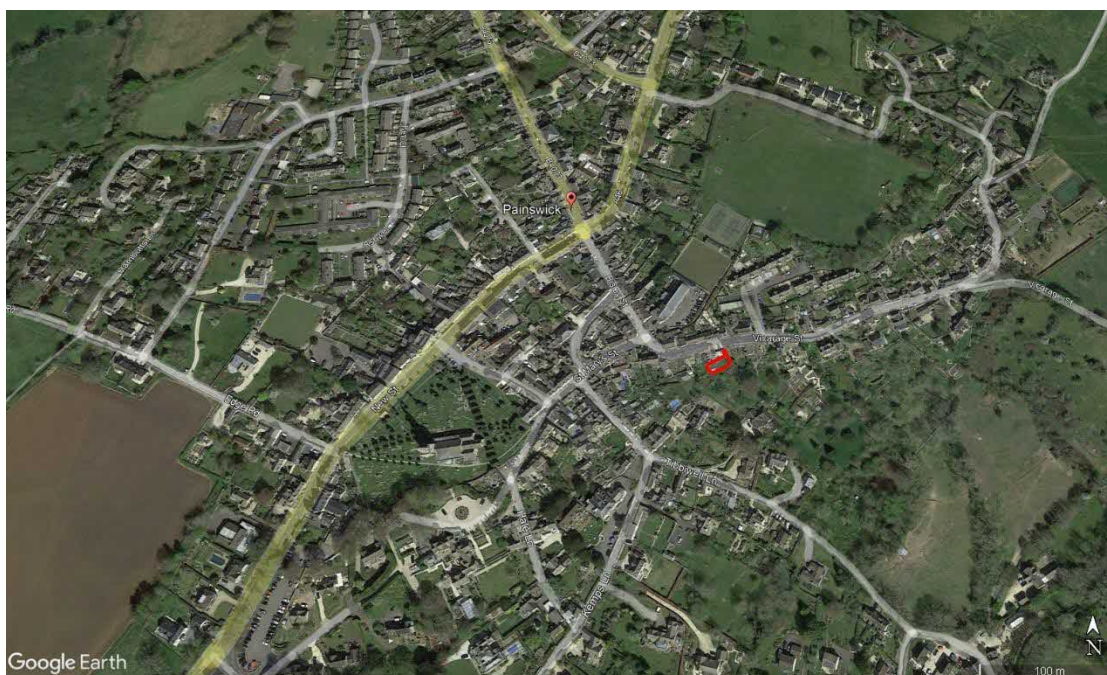


Figure 2: Aerial Photograph showing the location of the site in red (Google Earth, 2023)

The site is bounded by residential properties and their associated walled gardens to the north, east and west. The area to the south of the site lies below a 2-3m high retaining wall (which forms the southern boundary of the site) and comprises an extensive garden some of which is used for vegetable growing, whilst other areas are dominated by trees and shrubs.

Bentley Cottage, a two storey Cotswold stone cottage, occupies the western part of the site and is the only building present within the site. The eastern part of the site comprises the managed ornamental garden associated with Bentley Cottage. Detailed descriptions of Bentley Cottage and the surrounding habitats are provided in Section 3.2.

The wider landscape around the site is dominated by residential areas of Painswick village to the north, south and west, whilst to the east, residential properties gradually give way to open countryside characterised by grazed pasture fields separated by mature hedgerows and lines of trees.

### 1.3 Details of the Proposed Development

The development proposals for the site comprise the renovation and extension of the existing cottage and associated landscaping. The proposals include the demolition of a single storey extension on the southern elevation and the construction of a two storey extension, which will extend the building's footprint to the south and east. A new roof will be constructed as part of these proposals. A copy of the Proposed Development Plans are provided in Appendix 01.

### 1.4 Purpose of this Report

This report presents the findings of the PEA and PRA conducted by Hillcrest Ecology. The report seeks to:

establish baseline conditions and determine the importance of ecological features present (or those that could be present), as far as is possible;

- to identify potential ecological constraints to the proposed development and make initial recommendations to avoid potentially significant effects on important ecological features, where possible;
- to identify potential requirements for mitigation, where possible, including mitigation measures that will be required and those that may be required (depending on final scheme design); and
- to identify opportunities for biodiversity enhancements as part of the proposed development.

This report also presents the results of the further bat surveys which were recommended following completion of the PRA / PEA at the site. The report therefore also seeks to:

- Confirm the presence or likely absence of bat roosts within Bentley Cottage; and
- Provide recommendations for any licencing, mitigation or enhancement measures required to ensure that the proposed development does not impact upon the local bat population and to ensure compliance with relevant wildlife legislation.

## 1.5 Evidence of Technical Competence and Experience

The completion of the PRA, PEA and further bat surveys, from field survey through to reporting, has been completed by [REDACTED] BSc MSc ACIEEM. [REDACTED] is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and has over 15 years' experience as a professional ecologist. [REDACTED] also holds a Natural England Licence (Level 2) to survey for bats (Licence Ref No: 2018-37236-CLS-CLS) and has held the licence since 2018.

This report has been subject to review by [REDACTED] BSc MSc ACIEEM of Hillcrest Ecology. [REDACTED] has over 15 years' experience as a professional ecologist and regularly completes both ecological reporting and technical reviews.

## 1.6 Relevant Legislation and Policy

Key wildlife legislation and planning policy relevant to the proposed development is summarised in Appendix 02.

## 2.0 Methodology

### 2.1 Scope

The PEA relates to the proposed renovation and extension of Bentley Cottage with the following areas being referred to in this report:

- The 'ecological study area' which extends up to 1km from the site boundary;
- The 'survey area' which covers the site itself and immediately adjacent areas (where accessible); and
- The 'site' which refers to areas within the site boundary as shown in Figure 1.

### 2.2 Desk Study

An internet-based ecological desk study was completed in regard to the project and the following sources were consulted:

- The Multi-Agency Geographic Information for the Countryside (MAGIC) website<sup>1</sup> was searched for statutory designated sites (such as Sites of Special Scientific Interest (SSSI)), European Protected Species (EPS) Licences granted, and great crested newt eDNA and licence return records within 1 km of the site. The website was also used to search for the presence of priority habitats in the vicinity of the site;
- The National Biodiversity Network (NBN) Website<sup>2</sup> was used to review species distributions, if required; and
- Ponds or potential ponds in the vicinity of the site were identified by reference to OS maps<sup>3</sup> and freely-available aerial photography (Google Earth).

A formal desk study using records purchased from local records centres and / or interest groups has not been completed to inform this report on account of the site's isolation and the very limited semi-natural habitats present. The site is isolated by 2m high boundary walls to the north and east, by Bentley Cottage itself to the west, and by the 2-3m high retaining wall to the south (i.e. the site is approximately 2-3m higher than land to the south which is below the retaining wall). For these reasons, the presence or absence of species records in the area was considered unlikely to influence conclusions on the potential for species to be present within the site.

### 2.3 Field Survey

#### 2.3.1 UK Habitat Classification and Protected Species Walkover Survey

A UK Habitat Classification survey was undertaken by [REDACTED] BSc MSc ACIEEM on 3<sup>rd</sup> July 2023 using Version 2 of the UK Hab Classification survey methodology<sup>4</sup>. The survey covered the site and immediately adjacent habitats within at least 30m (access permitting – see Section 2.4 below) to ensure any ecological constraints within the zone of influence of the works were identified.

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<sup>1</sup> <http://magic.gov.uk>

<sup>2</sup> <https://nbn.org.uk>

<sup>3</sup> <https://explore.osmaps.com>

<sup>4</sup> UK Hab Ltd (2023). UK Habitat Classification Version 2.0 (at <https://ukhab.org>)



Habitats and features with the potential to support protected and/ or conservation priority fauna, together with any field signs of such species were searched for. The survey area for [REDACTED] was set to include all adjacent habitats within 30m of the site boundary (where accessible and suitable [REDACTED] building substrates existed) to ensure [REDACTED] disturbance distance of the proposed development would be identified. Any trees within the survey area were also assessed for their potential to support roosting bats, based on criteria within the third edition of the Bat Conservation Trust’s Good Practice Guidelines<sup>5</sup>. Terrestrial habitats within the survey area were also assessed for their suitability for invertebrates, amphibians, reptiles, breeding birds and rare plants. Searches were also made for non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), such as Japanese knotweed (*Reynoutria japonica*) and Himalayan balsam (*Impatiens glandulifera*).

### 2.3.2 Preliminary Roost Appraisal Survey

The PRA was undertaken by Mr [REDACTED] BSc. MSc. ACIEEM on the 3<sup>rd</sup> July 2023 at the same time as completing the PEA.

The PRA followed current best practice guidelines<sup>5 6</sup> and where possible entailed a thorough external inspection of Bentley Cottage to identify potential bat roosting locations and to assess the building’s potential to support roosting bats. This was followed by an internal inspection to assess the suitability of the building to support bat roosts and, where access was possible, to search for evidence of current or previous occupation by bats, such as bat droppings, feeding remains, or bats themselves. Samples of bat droppings would have been collected for laboratory DNA analysis if found.

Equipment used and at hand during the survey included:

- Cluson 1M candle power torches (with low light settings and red filters to minimise disturbance to observed bats, if present);
- Close-focus binoculars;
- Fibre-optic endoscope; and
- Ladders to inspect certain areas of the building’s exterior.

The potential of Bentley Cottage to support roosting bats was assessed using criteria detailed in Table 2-1.

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<sup>5</sup> Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edition). The Bat Conservation Trust, London.

<sup>6</sup> It is noted that the 4th Edition of the ‘*Bat Surveys for Professional Ecologists: Good Practice Guidelines*’ produced by the Bat Conservation Trust is now available. However, this guidance was only released following completion of the surveys at the site and thus the methodology used for the surveys is consistent with the recommendations in the 3rd Edition of the BCT guidelines.

**Table 2-1: Criteria of Building Suitability to Support Bat Roosts<sup>7</sup>**

Category (Bat Potential)	Description
<b>Negligible value</b>	Building where surveyor has not identified any suitable potential roosting features, or where those that are present are of such poor quality or condition <sup>8</sup> , such that bats are highly unlikely to use them.
<b>Low value</b>	Building with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats.
<b>Moderate value</b>	Building with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but which are unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
<b>High value</b>	Building with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
<b>Roost</b>	Bats or signs of bats, such as accumulations of droppings and / or feeding remains found.

There are no trees in immediate proximity to the site and none will be affected by the proposed development plans. No trees were therefore assessed for their potential to support roosting bats during the survey.

### 2.3.3 Dusk Emergence Bat Surveys

The PRA survey concluded that Bentley Cottage had ‘moderate’ suitability for roosting bats. Therefore in accordance with good practice guidance<sup>5,9</sup>, the building was subject to two separate dusk emergence surveys (also known as ‘roost detection surveys’) with the aim of detecting the presence of bats emerging from the building.

The dusk emergence surveys were undertaken on two separate visits by [REDACTED] and [REDACTED] of Hillcrest Ecology on the following dates:

- 11<sup>th</sup> August 2023; and
- 1<sup>st</sup> September 2023.

The dusk emergence surveys commenced 15 minutes before sunset and continued for 1.5 hours after sunset. Both surveyors were strategically positioned either side of the building so as to be able to observe any bats leaving their roosts, if roosts were present. Surveyor locations are shown in blue in Figure 3 below, with the outline of Bentley Cottage highlighted in red.

<sup>7</sup> Based on: Collins (ed) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* BCT. Table 4.1, page 35.

<sup>8</sup> For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

<sup>9</sup> Two separate dusk surveys were completed, as opposed to a single dusk and separate dawn survey visit, based on the Bat Conservation Trust’s Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys (2022). This guidance note highlights the variable effectiveness of dawn surveys at detecting bat roosts and thus in line with this guidance two dusk surveys were completed.



Figure 3 – Plan showing the locations of Surveyor A and B in relation to Bentley Cottage (Google Earth, 2023)

In addition, any significant<sup>10</sup> bat activity was recorded on a plan of the site, noting time, location and, where possible, the direction of flight, species and behaviour of the bat (i.e. commuting, foraging, social calling etc.). Both surveyors were equipped with a full spectrum bat detector (Anabat Scout or EchoMeter Touch 2 Pro) and a Canon XA infra-red camera with associated infra-red lighting. Temperature, wind speed and cloud cover were recorded at the beginning and end of each survey, along with any significant weather changes during the survey (e.g. intermittent showers).

The prevailing weather conditions and survey details for each survey are presented in Table 2-2 below:

Table 2-2: Summary of Dusk Emergence Bat Survey Timing & Weather Conditions

Date:	Timings:	Temperature:	Cloud Cover:	Wind (BF Scale):	Precipitation:
11 <sup>th</sup> August 2023	Start Time: 20:25 Sunset: 20:40 End Time: 22:10	Start: 20.8°C End: 15.5°C	Start: 50% End: 60%	Start: 2 End: 2	No rain throughout.
1 <sup>st</sup> September 2023	Start Time: 19:41 Sunset: 19:56 End Time: 21:26	Start: 18.7°C End: 12.2°C	Start: 30% End: 20%	Start: 1 End: 1	No rain throughout.

<sup>10</sup> The main focus of the survey was to detect any bats entering or exiting the building in order to confirm the presence or absence of roosts. Thus, notes were not made on every instance of bat activity throughout the survey in order to focus on watching the building. However, notes were made for all significant aspects of bat activity, including: first bat heard during the survey, notes for each different bat species recorded, and any significant foraging areas or commuting routes identified.

### 2.3.4 Static Bat Detector Monitoring

In addition to the dusk emergence surveys described in Section 2.3.3, static bat detector monitoring of the roof void within Bentley Cottage was also completed in order to detect any bat activity occurring within the building in between survey visits. An Anabat Chorus full spectrum static detector was left inside the roof void prior to dusk on the 11<sup>th</sup> August 2023 and set to continuously record. The detector was collected on the second survey visit on the 1<sup>st</sup> September 2023 (a total of over 20 days continuous monitoring). All sound files recorded by the detector were reviewed for potential bat activity using the Anabat Insight software programme.

## 2.4 Limitations to Surveys

No access was available to the land to the south of the site boundary during the PEA survey. However, the site itself was fully accessible, as was the garden of the neighbouring property immediately west of the site. Thus, from these areas good views were available over the land to the south which enabled detailed recording of the habitats present. Similarly, no access was available to the walled gardens immediately north and east of the site. However, access was not considered essential to these areas as they are small, managed, residential gardens with no physical connectivity to the site (due to the high walls). The broad habitats within these gardens can be reliably judged from aerial photography and thus are shown on the UK Hab Classification Plan (Drawing 01) but are not described in the results section as they were not viewed in person. These access constraints are not therefore considered to affect the validity of the conclusions drawn in this report.

There were no limitations to the PRA or dusk emergence surveys. The southern elevation of the single storey extension on the southern side of Bentley Cottage could not be fully viewed by Surveyor A during the dusk emergence surveys. However, strategic positioning of Surveyor B meant this area could be fully covered from the eastern survey position.

## 3.0 Results

### 3.1 Desk Study

A search of the MAGIC<sup>1</sup> website identified a single statutory designated site within 1km of the site. Cotswold Commons and Beech Woods Site of Special Scientific Interest (SSSI) is located approximately 740m north of the site at the closest point. The SSSI is designated for “ancient beech woodland and unimproved grassland lying over Jurassic limestones at the western edge of the Cotswolds. The woodlands are amongst the most diverse and species-rich of their type while the grasslands typify the unimproved calcareous pastures for which the area is famous”. Considering the small size of the site, the proposed development plans and the distance from any designated sites, no impacts on designated sites are expected due the proposed development. Designated site will therefore not be considered further within this assessment.

Further searches of MAGIC confirmed that the closest area of priority habitat in relation to the site is an area of deciduous woodland approximately 65m south east of the site boundary.


There is a single great crested newt (GCN) eDNA record within 1km of the site. This record is located approximately 960m north west of the site far beyond the northern extent of Painswick village.

There are no records of EPS licences granted for any species within 1km of the site.

### 3.2 Habitats

The results of the habitat survey are illustrated in plan form in Drawing 01 and described in Table 3-1 below. The unique UK Habitat Classification survey code (e.g. u1b6) that the habitat is attributed to is included in brackets within the table below. For the purposes of this report the habitats present within the site have been mapped using the fine scale minimum mapping unit MMU (25m<sup>2</sup>, 5m length), in accordance with the UK Habitat Classification User Manual<sup>11</sup>.

Table 3-1: Habitats Present within the Survey Area

Photograph:	UK Hab Classification & Description:
	<p>Modified Grassland - Frequently Mown (g4 108)</p> <p>Area of amenity lawn approximately 10m x 5m which occupies the majority of the garden to Bentley Cottage (the central part of the site).</p> <p>The lawn is regularly mown and is comprised of perennial rye-grass (<i>Lolium perenne</i>) and annual meadow grass (<i>Poa annua</i>). Broad-leaved herbs are relatively frequent but limited in diversity, comprising: white clover (<i>Trifolium repens</i>), yarrow (<i>Achillea millefolium</i>), dandelion (<i>Taraxacum</i> agg.), broadleaf plantain (<i>Plantago major</i>) and bristly ox-tongue (<i>Helminthotheca echioides</i>).</p>

<sup>11</sup> UK Hab Ltd (2023). UK Habitat Classification Version 2.0 (at <https://ukhab.org>)



**Building – Residential Building (u1b5 818)**

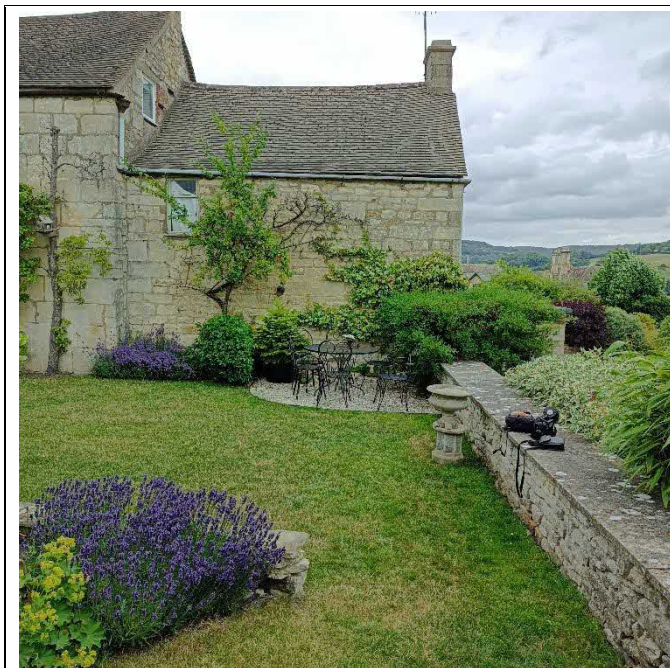
Bentley Cottage is the only building present within the site boundary and is a two storey Cotswold stone cottage. The building occupies the western part of the site. A more detailed description of the building is provided in the PRA survey results (Appendix 03).



**Suburban Mosaic of Developed & Natural Surface - Garden (u1d 827)**

Habitat comprises concrete path from Vicarage Road leading to the door of Bentley Cottage with an adjacent ornamental flower bed. There also several small patio areas including a gravel seating area at the eastern end of the garden and a smaller concrete area adjacent to the single storey extension of Bentley Cottage. The northern and eastern site boundaries are marked by the high walls of neighbouring gardens. These habitats make up the remaining areas within the site boundary in addition to the amenity lawn and building described above.





Suburban Mosaic of Developed & Natural Surface –  
Garden (u1d 827) (OFF SITE)

Garden of the neighbouring property (to the west of the site) which comprises a frequently mown amenity lawn, ornamental flower beds and shrubs, several patio areas and a stone retaining wall. This garden is outside of the site boundary, but within the survey area. The lower part of the building that can be seen in the photograph is the rear (western) elevation of Bentley Cottage.



Suburban Mosaic of Developed & Natural Surface –  
Garden (u1d 827) (OFF SITE)

Neighbouring garden to the south of the site and below the 2-3m high retaining wall (which forms the site's southern boundary). The garden in this location is regularly managed and is primarily used for fruit and vegetable production. There are occasional ornamental shrubs at the boundaries of the garden. This garden is outside of the site boundary, but within the survey area. The garden could not be accessed but good views were available from within the site.



## 3.3 Protected or Notable Species

### 3.3.1 Plants

No protected or notable plants species (including invasive non-native species) were recorded within the survey area. Given that all semi-natural habitats within the survey area are within regularly managed gardens, the presence of important populations of protected or notable plant species is highly unlikely. Protected or notable plants are therefore not considered a constraint to the proposed development and will not be discussed further in this assessment.

### 3.3.2 Invertebrates

No protected or notable invertebrate species were recorded within the survey area, although a range of common invertebrates were recorded (including peacock butterfly (*Aglais io*) and buff-tailed bumble bee (*Bombus terrestris*)).

Whilst the garden habitats within the survey area are likely to support a range of invertebrates, potentially including some more widespread notable invertebrate species, they are considered unlikely to support any invertebrate assemblages of significant conservation importance due to the small size and ubiquitous nature of the habitats present. Invertebrates are therefore not considered a constraint to the proposed development and will not be considered further within this assessment.

### 3.3.3 Amphibians

There are no ponds or areas of standing water present within the survey area, however, the desk study identified the presence of four ponds within 500m of the site boundary. These ponds are located approximately: 140m south, 380m, 420m and 460m south east of the site boundary.

However, the site is considered unsuitable for terrestrial amphibians as the habitats present are small, regularly managed and provide limited cover. The site is also isolated from amphibian colonisation by walls and buildings on the northern, eastern and western site boundaries, and the 2-3m high vertical retaining wall on the southern boundary. The neighbouring garden to the west (outside of the site boundary) is similarly unsuitable and isolated for amphibians.

Only the southern part of the survey area (outside of the site boundary) is considered to have any suitability for terrestrial amphibians with larger areas of cover and potential refuge. However, due to the local topography (all land steeply sloping southwards) the ponds are separated and isolated from this area by vertical retaining walls associated with residential property boundaries. It is therefore considered unlikely that the area is used by significant numbers of terrestrial amphibians.

The presence of amphibians, including GCN, within the site or immediately adjacent areas is considered highly unlikely. Amphibians are therefore not considered a constraint to the proposed development and will not be considered further within this assessment.

### 3.3.4 Reptiles

The habitats with the site are considered too regularly managed and isolated to support populations of reptiles. Only the southern part of the survey area (outside of the site boundary) is considered to have any suitability for reptiles (principally slow worm (*Anguis fragilis*)) although the habitats even within this area are very sub-optimal given their regular management and cultivation. Thus, whilst the presence of individual reptiles cannot be



completely ruled out in this area, due to sub-optimal nature of the habitat, it is considered highly unlikely that the area would support large or important populations of reptiles. Reptiles are therefore not considered a constraint to the proposed development and will not be considered further within this assessment.

### 3.3.5 Birds

A range of common and widespread bird species were recorded during the PEA survey including house sparrow (*Passer domesticus*), wood pigeon (*Columba palumbus*), jackdaw (*Corvus monedula*), starling (*Sturnus vulgaris*) and blackbird (*Turdus merula*). These bird species were recorded in or around the survey area, or flying over, but they may access the site as part of a wider territory. In addition, a robin (*Erithacus rubecula*) nest was found amongst a climbing Jasmine (*Jasminum* sp.) growing on the western elevation of Bentley Cottage.

Given the suburban context, small size and ubiquitous nature of the habitats present, the site is considered unlikely to be of critical importance to local bird populations, and is unlikely to support important populations of conservation priority bird species. However, it must be noted that the ornamental shrubs within the survey area have potential to support nesting birds, and precautionary measures are required to ensure nesting birds are not affected by the proposed development.

### 3.3.6 Mammals

The survey area was not considered suitable for any protected or notable mammal species (apart from European hedgehog (*Erinaceus europaeus*) and bats which are discussed below) on account of the lack of suitable habitats and / or no evidence of their presence during the survey.

#### Hedgehog

The site itself is considered inaccessible to hedgehog on account of the walls and buildings on all boundaries preventing access. Only the southern part of the survey area (outside of the site boundary) is considered suitable and accessible by hedgehog. This area provides potential foraging opportunities for hedgehogs with some shelter and cover provided by shrubs. Hibernation opportunities within the survey area are limited though due to the lack of debris piles or deep leaf litter. Thus, whilst hedgehogs may forage within this part of the survey area it is considered unlikely that it is of special significance for hedgehogs or supports a permanent population. Hedgehogs are therefore not considered a constraint to the proposed development and will not be considered further within this assessment.

#### Bats

##### Preliminary Roost Appraisal (PRA) Survey

Bentley Cottage (the only building within the site) was considered potentially suitable for roosting bats and thus was subject to a detailed PRA survey. The PRA survey did not record any bats or evidence of roosting bats during the external or internal inspection of the building. However, the PRA survey did identify the presence of a number of potential bat access and / or roost features, including: gaps under roof tiles and lead flashing, gaps in mortar and masonry, and gaps between the roof and wall tops. Evidence of roosting bats would not be visible in a number of these locations (if present) as the locations were concealed (e.g. areas between roof lining and roof tiles) and could not therefore be inspected. Overall, given the number and type of potential bat access points / potential roost features present, and the conditions within the roof void of the building, Bentley Cottage was considered to have 'moderate' suitability for roosting bats. The full results of the PRA survey are described in Appendix 03, with photographs showing the location of potential bat access points and / or roost features provided in Appendix 04.

The habitats within the site were considered of negligible value to commuting and foraging bats due to their regular management, small size and lack of connectivity. The adjacent garden habitats to the south of the site are likely to be more frequently used by commuting and foraging bats as the habitats are more extensive and diverse with shrubs, small trees etc. The habitats to the south of the site are also largely unaffected by artificial lighting as the area forms part of a garden associated with another property and it is away from houses and roads.

### Dusk Emergence Surveys

As Bentley Cottage was considered to be of 'moderate' suitability for roosting bats, two dusk emergence surveys were completed in accordance with good practice guidelines<sup>5 7 9</sup>. The dusk emergence surveys completed on the 11<sup>th</sup> August and 1<sup>st</sup> September 2023 did not record any bats emerging or re-entering the building, and no bats were observed interacting with building (i.e. flanking behaviour) in a way that would suggest that any of the potential roost features would be used at other times. Full details of the dusk emergence surveys are provided in Appendix 05.

The dusk emergence surveys did not identify any obvious and well-used flight lines, commuting routes or foraging areas, with the vast majority of bat activity attributed to common pipistrelle (*Pipistrellus pipistrellus*). During the surveys infrequent passes of soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*) and serotine (*Eptesicus serotinus*) were also recorded. Only one or two passes of brown long-eared bat (*Plecotus auritus*), Leisler's bat (*Nyctalus leisleri*) and Lesser horseshoe (*Rhinolophus hipposideros*) were recorded in total over the course of both surveys.

### Static Detector Monitoring

The static bat detector left inside the roof void of Bentley Cottage successfully recorded between the 11<sup>th</sup> August and the 1<sup>st</sup> September 2023 (21 days/nights in total). No bat echolocation calls were recorded on the detector during this period, indicating that there had been no bats flying or roosting within the roof void during this time.

## 4.0 Ecological Constraints and Opportunities

### 4.1 Habitats

The proposed development at the site will have no impact on any habitats considered to be of conservation importance. The only semi-natural habitats within the site are managed amenity lawn and ornamental flower beds. Considering the small size of the site, partial loss of these habitats to the proposed development is not predicted to result in any significant habitat or biodiversity impact.

### 4.2 Nesting Birds

The ornamental planting and shrubs within the site and on the site boundaries have potential to be used for nesting by common and widespread bird species. The nests of all wild birds are protected whilst they are active, and thus precautions should be taken to ensure the proposed development works do not damage or destroy any active bird nests.

It is therefore recommended that if the proposed development is likely to impact any ornamental planting or shrubs as part of the works, the planting / shrubs should be cut back or removed outside of the nesting bird season (considered to be March to September inclusive). If clearance during this time is not feasible, any suitable habitat should be searched for active nests by an ecologist immediately prior to removal. Should an active nest be found during a search, the nest would need to be retained in-situ until any young birds had fledged.

With the above mitigation measures in place, no negative impacts or legal offences relating to nesting birds are predicted as a result of the proposed development.

### 4.3 Bats

#### 4.3.1 Roosting Bats

A range of bat surveys completed in accordance with good practice guidelines<sup>59</sup> indicate the likely absence of bat roosts within Bentley Cottage. Roosting bats are therefore considered unlikely to be affected by the proposed development plans.

However, it should be recognised that bats frequently change roosts and may use some roost sites only very occasionally. The potential presence of individual or very low numbers of bats roosting occasionally within the potential roost features cannot therefore be completely ruled out. Thus, it is recommended that a Precautionary Method of Works (PMoW) is implemented during initial works to the roof of Bentley Cottage to minimise any residual risk to bats, in the unlikely event of their presence. The PMoW should comprise the following steps:

- Contractors involved in the renovation and / or extension of Bentley Cottage will be asked to read and sign a 'toolbox talk' about bats which details including: legal protection, how to identify signs of bat presence and explains each of the steps within the PMoW;
- The roof tiles of the building would then be removed by hand and with care. Each tile should be lifted in an upwards motion and the back of each tile checked visually for bats before being discarded or stacked for re-use;
- In the unlikely event that a bat is discovered at any point during the works, all works must cease immediately and Hillcrest Ecology be contacted for further advice ( [REDACTED] ). All bat

roosts are subject to legal protection (see Appendix 02) and an EPS Licence would likely be required from Natural England in order to allow works to proceed further. Contractors are forbidden to handle bats discovered during works unless the bat is in immediate danger; and  
A hard copy of the PMoW will be available at all times whilst the proposed development works are completed.

### 4.3.2 Commuting and Foraging Bats

The site itself is of negligible value to commuting and foraging bats given its small size and the types of habitat present. The adjacent garden habitats to the south of the site are likely to represent better commuting and foraging habitats for bats given their greater size, general lack of artificial lighting and presence of trees and shrubs etc. Thus, the proposed development should seek to minimise artificial lighting impacts upon this area via sensitive design of any external lighting within the proposed development to ensure they do not inadvertently illuminate areas to the south of the site.

## 4.4 Recommendations for Further Survey

No further surveys are recommended or considered necessary to determine the ecological impacts of the proposed development at the site.

This report is considered valid for a period of 12 months. If proposed development works have not commenced within this time, an update survey may be required to ensure conditions at the site remain the same.

## 4.5 Opportunities for Biodiversity Enhancement

Whilst the proposed development is not considered to have any significant ecological impacts, biodiversity enhancements are recommended for inclusion within the development proposals in order to provide biodiversity benefits in line with local and national planning policy. The following ecological enhancements are recommended, with the locations of each enhancement shown on the plan in Appendix 06:

Bat access slates and ‘bat-safe’ breathable roofing membrane incorporated into the new roof – The installation of three bat access slates would allow bats access to the gap between the roof tiles and the roof lining and would recreate the predominant type of roost feature (i.e. crevice features) lost as part of proposed development. As part of this enhancement a ‘bat-safe’ breathable roofing membrane<sup>12</sup> will be used in construction of the new roof. However, it is imperative that if bat access slates<sup>13</sup> are fitted, the roof can only be lined with ‘bat-safe’ breathable roofing membrane or traditional 1F bitumen felt and not other types of breathable roofing membrane<sup>14</sup>;

Bat Box – There are a number of different designs available that can be retro-fitted to the walls of new buildings post-construction to give a discrete but long-lasting enhancement. The installation of a single ‘woodstone’ bat box (Beaumaris Woodstone Maxi Bat Box or similar-sized equivalent) suitable for crevice dwelling bat species is recommended to replicate the nature of potential roost features lost as part of the

---

<sup>12</sup> <https://tlxinsulation.co.uk/tlx-batsafe/>

<sup>13</sup> <https://www.leadworx.com/shop/bat-access-vents/bat-access-vent/>

<sup>14</sup> Typical breathable roofing membranes (or BRM) should not be used in roof spaces accessible by bats. Over time bat roosting activity on the BRM can cause the fibres of the membrane to loosen (forming loops of fibre) and thus create a risk of entanglement/mortality to bats.

development. It is recommended that one box is installed immediately below the soffit box on the wood clad section of western elevation to ensure the box is located away from windows;

Sparrow Boxes - Sparrow terraces are considered an appropriate ecological enhancement due to the sub-urban location of the site and the species being listed as a Bird of Conservation Concern due to a recent significant decline in numbers. The installation of two 'woodstone' sparrow terraces is therefore recommended (Vivara Pro WoodStone House Sparrow Nest Box or equivalent) to the western end of the building's southern elevation; and

Swift Boxes - The installation of two 'woodstone' swift boxes is also recommended (Vivara Pro Madrid Swift Box or equivalent) in the central section of the building's southern elevation. Swifts are listed as a Bird of Conservation Concern with the decline of the species partly linked to a lack of suitable nesting sites.

## 5.0 Summary and Conclusions

The site comprises a two-storey building (Bentley Cottage) and associated small garden which includes mown amenity grass, patio areas and ornamental flower beds. The site is approximately 150m<sup>2</sup> in size (0.015 hectares). The site is isolated from adjacent areas by garden walls to the north and east, by Bentley Cottage itself to the west, and by a 2-3m high retaining wall to the south. Habitats within the site are small, isolated and ubiquitous in the local area. Thus, the habitats within the site are considered to have negligible value to wildlife and partial loss of these habitats as a result of the proposed development will not have any appreciable impact on biodiversity.

Proposed development at site is not expected to affect any designated sites due to the small-scale of the proposed development works and the distance from the closest designated site (approximately 740m north of the site).

Proposed development at the site is not considered to result in any significant negative impacts to protected species. However, precautionary measures are proposed for nesting birds and roosting bats to minimise any residual risks and ensure compliance with relevant wildlife legislation.

The ornamental planting and shrubs within the site and on the site boundaries have potential to be used for nesting by common and widespread bird species. It is therefore recommended that if the proposed development is to impact any nesting bird habitat as part of the works, the planting / shrubs should be cut back or removed outside of the nesting bird season (considered to be March to September inclusive). If clearance during this time is not feasible, any suitable habitat should be searched for active nests by an ecologist immediately prior to removal.

Bentley Cottage was considered to have 'moderate' suitability for roosting bats. However, further surveys (comprising PRA survey, two dusk emergence surveys and static detector monitoring of the roof void) found no evidence of roosting bats and thus bat roosts are considered likely to be absent from the site. However, as bat roosts can change location or be used only occasionally, a Precautionary Method of Works (PMoW) is recommended during removal of the existing roof to ensure the risk to roosting bats is minimised, in the unlikely event they are present.

The site is considered to have negligible value for commuting and foraging bats. However, areas immediately south of the site are likely to be more frequently used by commuting and foraging bats. Impacts to commuting and foraging bats can therefore be avoided via sensitive design of any external lighting to ensure they do not inadvertently illuminate areas to the south of the site.

A range of easy to implement and cost-effective wildlife enhancement measures have been proposed for incorporation into the proposed development plans as detailed in Section 4.5 and Appendix 06. These enhancements include: bat access slates and 'bat-safe' breathable roofing membrane and bat and bird boxes. These recommendations will help ensure that potential bat roosting and / or bird nesting features are available post-development and target the species most likely to access the site.

Subject to the mitigation and enhancement measures detailed within this report, the proposed development at the site is capable of complying with relevant legislations and planning policy, and no negative impacts on protected species are anticipated as a result of the proposed development.

## DRAWING 01

# UK Hab Classification Plan of Survey Area



Drawing 01 – UK Hab Classification Plan

Preliminary Ecological Appraisal: Bentley Cottage,  
Painswick

2<sup>nd</sup> October 2023

Google Earth, 2023.





## APPENDIX 01

# Proposed Development Plans

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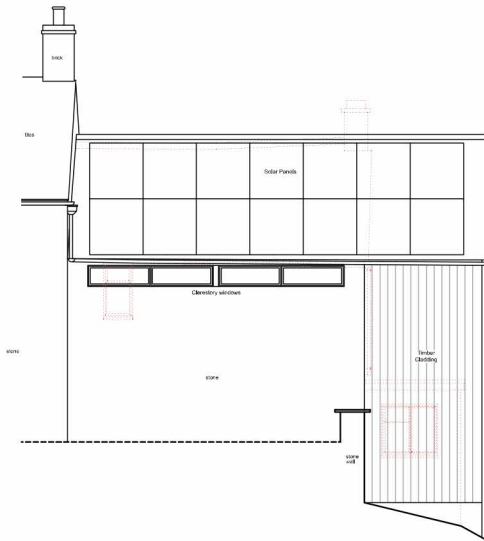
Scale: 1:50

EAST ELEVATION



Scale: 1:50

SOUTH ELEVATION



Scale: 1:50

WEST ELEVATION



SCALE MEASUREMENTS SHOWN IN METRES.  
ACCURACY OF SCALE CAN ONLY BE ASSURED ON  
PROPERLY CALIBRATED MACHINERY

PLANNING NOTES

DEMOLITION NOTES

CONSTRUCTION NOTES

-All dimensions must be checked on site and not scaled from this drawing.  
-Responsibility is not accepted for errors made by others in scaling from this drawing. All construction information should be taken from figured dimensions only.

MAINTENANCE NOTES

Revisions

PRELIMINARY  
3

**VERITY & BEVERLEY**  
ARCHITECTS DESIGNERS

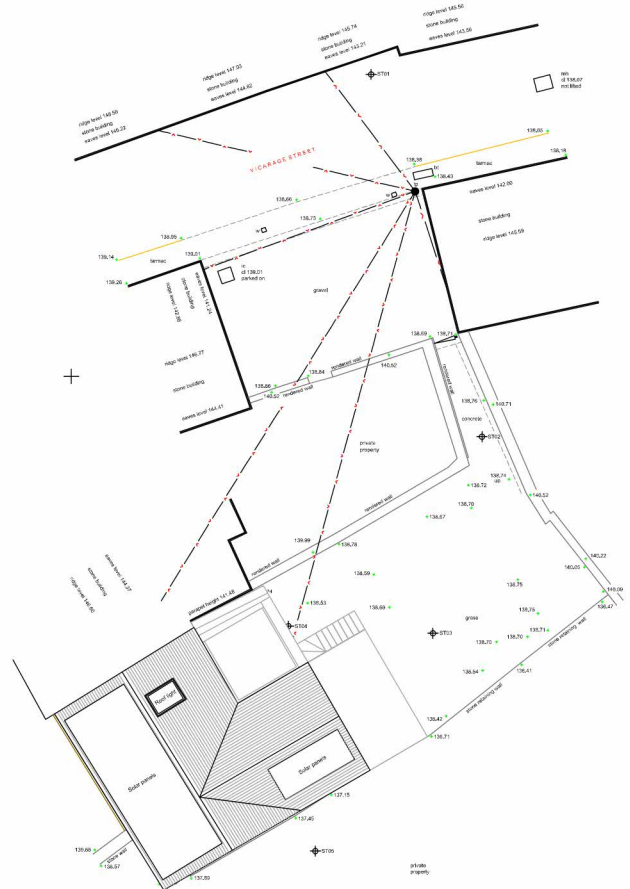
The Coach House | 4 The Chipping | Tetbury | Glos. | GL8 8ET  
Telephone: [REDACTED] | www.verity-beverley.co.uk

BENTLEY COTTAGE  
PAINSWICK

**PROPOSED ALTERATIONS & EXTENSION**

ELEVATIONS  
AS PROPOSED

Scale: 1:50	23.1557/06
Date: Nov 2023	Revision
Drawn: MAL	
Size: A1	



SITE PLAN

0 1 2 3 4 5 6 7 8 9 10 M  
 SCALE MEASUREMENTS SHOWN IN METRES.  
 ACCURACY OF SCALE CAN ONLY BE ASSURED ON  
 PROPERLY CALIBRATED MACHINERY

PLANNING NOTES  
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 DEMOLITION NOTES  
 -  
 CONSTRUCTION NOTES  
 -All dimensions must be checked on site and not scaled from this drawing.  
 -Responsibility is not accepted for errors made by others in scaling from this drawing. All construction information should be taken from figured dimensions only.  
 MAINTENANCE NOTES  
 -

Revisions

A	08.02.24	Drawing amended.
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**BENTLEY COTTAGE  
 PAINSWICK  
 ALTERATIONS & EXTENSION  
 SITE PLAN & ROOF PLAN  
 AS PROPOSED**



Scale: 1:100	
Date: 14.07.23	23.1557/04
Drawn: MAL	Revision
Size: A1	A

Copyright

## APPENDIX 02

# Relevant Legislation & Planning Policy

## Relevant Legislation<sup>15</sup>

### Conservation of Habitats and Species Regulations 2019

The Conservation of Habitats and Species Regulations 2019 (as amended) (EU Exit) transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

### Wildlife & Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act;
- Intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- Intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

### Natural Environment & Rural Communities (NERC) Act 2006

The NERC Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations. Section 41 of the Act (Section 42 in Wales) requires the publication of a list of habitats and species published which are of principal importance for the purpose of conserving biodiversity. The

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<sup>15</sup> Please note that the summary of relevant legislation provided here is intended for general guidance only. The original legislation should be consulted for definitive information.

Section 41 list (Section 42 in Wales) is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity.

## National Planning Policy

The National Planning Policy Framework (NPPF)<sup>16</sup> sets out guidance for local planning authorities and decision-makers in how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/05<sup>17</sup>, the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out.

Paragraph 174 of the NPPF states that:

“Planning policies and decisions should contribute to and enhance the natural and local 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.”

Further to this in Paragraph 180 it states that:

“When determining planning applications, local planning authorities should apply the following principles:-

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons<sup>63</sup> and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”

## Local Planning Policy

Planning policy at the local level is currently provided by the Stroud District Local Plan<sup>18</sup> which was adopted in 2019. The local plan policies relevant to ecology and nature conservation at a local level are as follows:

Policy ES6 (Providing for Biodiversity and Geodiversity) sets out that:

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<sup>16</sup> Department for Communities and Local Government. 2023. National Planning Policy Framework.

<sup>17</sup> Office of the Deputy Prime Minister. 2005. Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System. ODPM Circular 06/2005.

<sup>18</sup> [https://www.stroud.gov.uk/media/1455/stroud-district-local-plan\\_november-2015\\_low-res\\_for-web.pdf](https://www.stroud.gov.uk/media/1455/stroud-district-local-plan_november-2015_low-res_for-web.pdf)

## “European Sites

Development will safeguard and protect all sites of European and Global importance, designated as Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar sites. Development must not result in significant adverse effects on these internationally important nature conservation sites, either alone or in combination with other projects and plans. The Council will expect development proposals to demonstrate and contribute to appropriate mitigation and management measures to maintain the ecological integrity of the relevant European site(s).

With specific regard to recreational impacts, the Council will use core catchment zones that identify potential impact areas which extend beyond the relevant European site itself. Development proposals within such areas will take account of any relevant published findings and recommendations. There will be further assessment work on the Severn Estuary SPA and SAC that shall include recreational pressure.

## National Sites

Nationally important sites, including Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR), will be safeguarded from development, unless the benefits of the development can be demonstrated to outweigh the identified national importance of the nature conservation interest or scientific interest of the site.

## Local Sites

Local sites, including Local Nature Reserves (LNR), Key Wildlife Sites (KWS) and Regionally Important Geological and Geomorphological Sites (RIGS) will be safeguarded from development, unless the benefits of the development outweigh the nature conservation or scientific interest of the site. Where development is considered necessary, adequate mitigation measures or, exceptionally, compensatory measures, will be required, with the aim of providing an overall improvement in local biodiversity and/or geodiversity. Opportunities will be sought to access and enhance the value of such sites for educational purposes, particularly in relation to promoting public awareness as well as appreciation of their historic and aesthetic value.

## New Development and the Natural Environment

All new development will be required to conserve and enhance the natural environment, including all sites of biodiversity or geodiversity value (whether or not they have statutory protection) and all legally protected or priority habitats and species. The Council will support development that enhances existing sites and features of nature conservation value (including wildlife corridors and geological exposures) that contribute to the priorities established through the Local Nature Partnership. Consideration of the ecological networks in the District that may be affected by development should take account of the Gloucestershire Nature Map, river systems and any locally agreed Nature Improvement Areas, which represent priority places for the conservation and enhancement of the natural environment. In this respect, all developments should also enable and not reduce species' ability to move through the environment in response to predicted climate change, and to prevent isolation of significant populations of species.

The District will have a number of undesignated sites, which may nevertheless have rare species or valuable habitats. Where a site is indicated to have such an interest, the applicant should observe the precautionary principle and the Council will seek to ensure that the intrinsic value of the site for biodiversity and any community interest is enhanced or, at least, maintained. Where an impact cannot be avoided or mitigated (including post-development management and monitoring), compensatory measures will be sought. The Council may, in exceptional circumstances, allow for biodiversity offsets, to prevent loss of biodiversity at the District level.

## Protected Species

Development proposals that would adversely affect European Protected Species (EPS) or Nationally Protected Species will not be supported, unless appropriate safeguarding measures can be provided (which may include brownfield or previously developed land (PDL) that can support priority habitats and/or be of value to protected species).”

Policy ES8 (Trees, hedgerows and woodlands) also sets out:

“Development should seek where appropriate to enhance and expand the District’s tree and woodland resource.

Development that would result in the unacceptable loss of, or damage to, or threaten the continued well-being of protected trees, hedgerows, community orchards, veteran trees or woodland (including those that are not protected but are considered to be worthy of protection) will not be permitted.

Where the loss of trees is considered acceptable, adequate replacement provision will be required that utilise species that are in sympathy with the character of the existing tree species in the locality and the site.”

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## APPENDIX 03

# Preliminary Roost Appraisal (PRA) Survey Results


### External Inspection Results

Bentley Cottage is a two storey Cotswold stone cottage with a small single storey extension to the southern elevation of the building. The cottage is attached to neighbouring houses along its northern side, with the front of the cottage facing eastwards and the rear of the cottage facing westwards. There are no doors on the western elevation of the building, with this elevation forming the western boundary of the site.





The main house appears to be of solid wall construction, whilst the single storey extension appears to have a cavity wall construction. The roof of the main house is pitched with the eastern half being covered with original Cotswold stone tiles, whilst the western half is covered with more modern concrete tiles and ridge. The roof is intact but the Cotswold stone tile portion of the roof has numerous gaps of varying sizes which is typical of this type of roof. There is also a small open porch above the main door to Bentley Cottage (on the eastern elevation) which is also covered with Cotswold stone tiles. The single storey extension has a flat roof covered with bitumen felt.





No evidence of bats or bat roosts was identified during the external inspection of the building. However, a number of potential bat access and / or roosting locations were noted and these are detailed in Table A3-1 below. The locations of these potential access and / or roosting features are shown in Appendix 04, with the 'Feature No.' from Table A3-1 corresponding to numbered locations shown on the photographs in Appendix 04.





Table A3-1: Potential bat access and / or roosting locations noted during the external inspection of Bentley Cottage.

Building Elevation:	Feature No:	Notes:	Photograph:
Northern Elevation	-	No features – Building joined to neighbouring property along this elevation.	N/A
Eastern Elevation	1	Gaps beneath roof tiles – Multiple gaps of varying sizes beneath the irregular Cotswold stone roof tiles. Gaps are present throughout the main roof on the eastern elevation of the building. Such gaps may represent potential roost features for bats, as well as providing access to potential roosting areas between the tiles and roof lining.	



2	<p>Gaps beneath porch roof tiles – Multiple gaps of varying sizes beneath the irregular Cotswold stone tiles on the porch. Gaps are present throughout the small porch roof above the main door to Bentley Cottage. Such gaps may represent potential roost features for bats, as well as providing access to potential roosting areas between the tiles and the bitumen felt roof lining.</p>	
3	<p>Gap in cracked mortar – This gap is located at the wall top beneath the first row of roof tiles. The gap may form a suitable roost feature, or provide bat access to the roof void or areas between the roof tiles and roof lining.</p>	
4	<p>Gap beneath lead flashing – small gap beneath lifted flashing that may provide a suitable roost feature for individual bats.</p>	
5	<p>Gaps between fascia board and wall – These gaps are on the single storey extension and are too wide to be used as a roost feature. However, the gaps may provide bat access to potential roost locations within the flat roof of the extension.</p>	

Southern Elevation	6	Gaps between fascia board and wall – These gaps are on the single storey extension and are too wide to be used as a roost feature. However, the gaps may provide bat access to potential roost locations within the flat roof of the extension.	
Western Elevation	7	Gap between wall top and roof – Gap / crevice that extends inwards and may provide bat access to the roof void or areas between the roof tiles and roof lining.	
	8	Gap in mortar – Small cavity in masonry wall due to missing mortar. The cavity extends inwards a short way, but does not have any evidence of bat roosting.	
	9	Gap beneath roof tile – Small gap between one of the concrete roof tiles that may be wide enough for a bat to roost.	

10	<p>Gaps behind loose mortar – This feature is located on the gable end of the neighbouring property but would potentially be affected / disturbed by any development works to Bentley Cottage (and thus has been included here). The feature may provide sufficient space for a single bat to roost.</p>	
11	<p>Small mortar gap in chimney – There is a small mortar gap in the chimney that may extend in far enough to provide a potential roost feature. However, the gap may be too narrow to permit access by bats.</p>	
12	<p>Gaps beneath roof tiles – A series of small gaps between concrete roof tiles around the chimney area. The gaps may however not be wide enough for bats to access.</p>	
13	<p>Gaps between fascia board and wall – These gaps are on the single storey extension and are too wide to be used as a roost feature. However, the gaps may provide bat access to potential roost locations within the flat roof of the extension.</p>	


## Internal Inspection Results

Bentley Cottage has a single roof void within the main house and there are no roof voids in the single storey extension due to it having a flat roof. No evidence of bats or bat roosting was identified during the internal inspection of the roof void.

The roof is a traditional timber framed roof with a degraded bitumen-felt roof lining. The roof void is relatively small and is dominated by the water tank which is located in the centre of the roof void. The roof void is not used for storage and was covered in cobwebs throughout (including along the ridge beam). Many of the roof timbers are subject to extensive wood worm activity, and the resulting frass means that the roof void is also particularly dusty. There was extensive evidence (i.e. droppings and gnawed items) of both brown rat (*Rattus norvegicus*) and house mouse (*Mus musculus*) throughout the roof void, as well as several old wasp nests. Light from outside was visible in a number of places within the roof void, indicating that there are potential access routes into the roof void from the exterior of the building. The roof void was 19.9°C and 55% relative humidity at the time of survey on 3<sup>rd</sup> July 2023.

A number of potential bat access / roosting locations were noted during the internal assessment of the roof void. Further details are provided in Table A3-2 below.

Table A3-2: Potential bat access / roost features noted during the internal inspection of the roof void.

Building Section:	Notes:	Photograph:
Roof Void	<p><u>Potential Bat Access Locations:</u></p> <ul style="list-style-type: none"> <li>Tears in the bitumen felt roof lining (circled in red)</li> <li>Gap between the wall top and roof (Feature 7 in Table A3-1 above) which allows light into the roof void interior (circled in green)</li> <li>Gaps in bitumen felt along the ridge beam with light visible (circled in blue).</li> </ul> <p><u>Potential Bat Roost Features:</u></p> <ul style="list-style-type: none"> <li>Along the ridge beam (although the presence of extensive cobwebs throughout the roof void would suggest that there has been little or no bat activity).</li> <li>Between the roof tiles and bitumen felt roof lining.</li> </ul>	



Evidence of Bat Activity:  
There was no evidence of bat activity in the roof void. Brown rat and mouse droppings were both present.

No Photograph Available

## APPENDIX 04

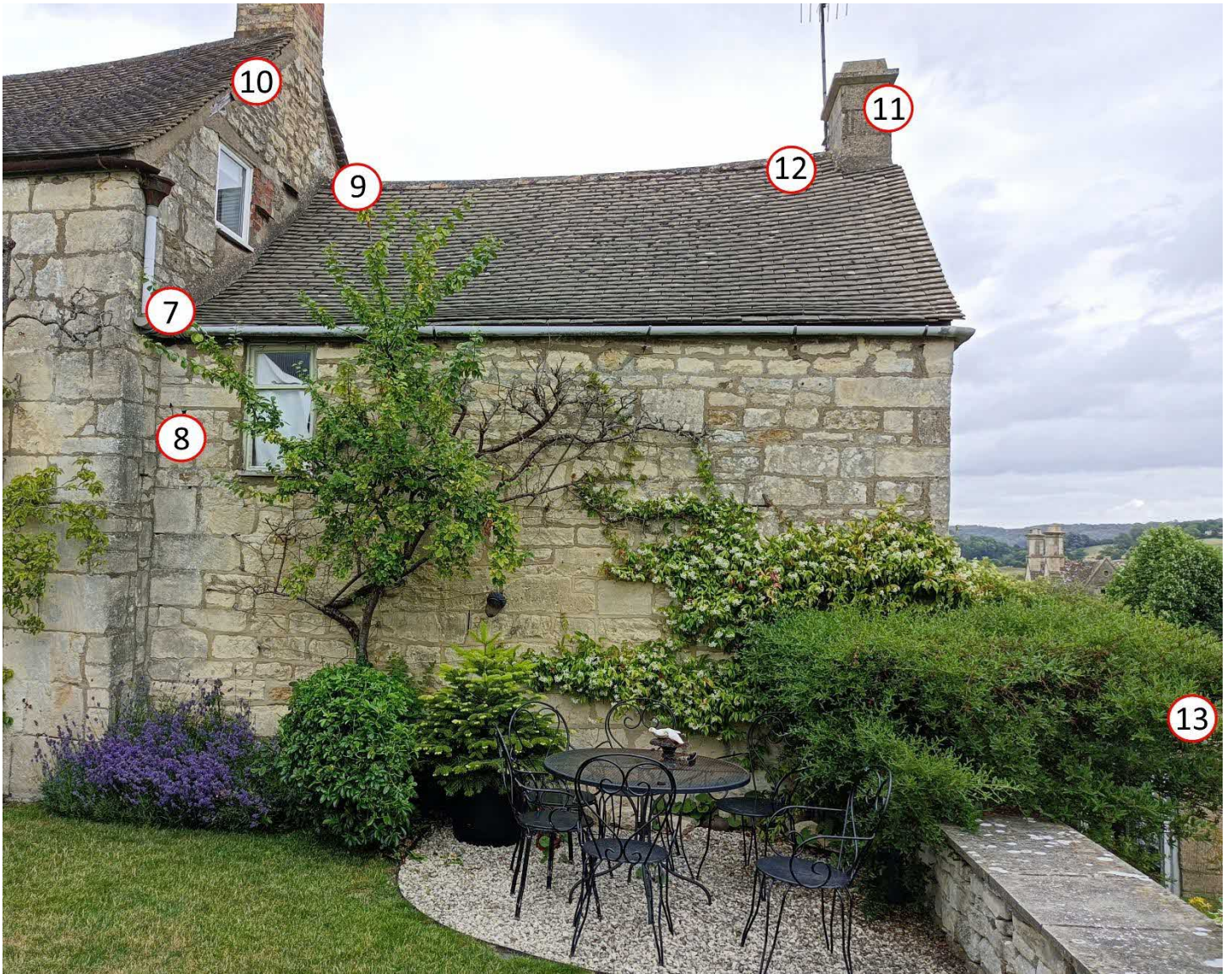
# Locations of Potential Bat Access and Roosting Locations

Eastern Building Elevation – Numbering refers to the 'Feature No.' contained in Table A3-1 within Appendix 03



Southern Building Elevation – Numbering refers to the 'Feature No.' contained in Table A3-1 within Appendix 03








## APPENDIX 05

### Dusk Emergence Survey Results

The results of the dusk emergence surveys completed on the 11<sup>th</sup> August and 1<sup>st</sup> September 2023 are presented in Tables A5-1 and A5-2 below. In summary, the surveys did not record any bats emerging from or re-entering the building, and no bats were observed interacting with building (i.e. flanking behaviour) in a way that would suggest that any of the potential roost features would be used at other times.

Table A5-1: Summary of Dusk Emergence Survey Results from the evening of 11<sup>th</sup> August 2023

Surveyor:	Bat Activity Time:	Key Notes on Bat Activity:
Surveyor A	20:58	Common pipistrelle – Seen commuting over the western part of the survey area in a south westerly direction (1 pass).
	21:00	Common pipistrelle – Several foraging passes. Bat was heard but not seen, but suspected to be foraging in garden to the south of the site.
	21:04 – 21:06	Common pipistrelle – Foraging for several minutes in the garden in the west of the survey area around the location of Surveyor A.
	21:20	Common pipistrelle – As above, foraging briefly in garden around Surveyor A.
	21:23	Serotine – High commuting pass over the western part of the survey area. Bat flying in a north westerly direction.
	21:39	Leisler’s – Single brief commuting pass, bat was heard but not seen.
	21:43	Soprano pipistrelle - Single brief commuting pass, bat was heard but not seen.
	21:53	Noctule – Single distant pass, bat was heard but not seen.
Summary:	No bat emergence recorded. Overall, relatively low levels of bat activity, with mostly common pipistrelle passes recorded. Occasional passes of Leisler’s, serotine, noctule and soprano pipistrelle.	
Infra-red Camera View (taken at end of survey):		
Surveyor B	21:05– 21:06	Common pipistrelle – Single bat commuting southwards over garden within the site recorded at 21:05 and again at 21:06.



	21:08	Common pipistrelle – Single bat commuting past the gable end of Bentley Cottage in an easterly direction.
	21:28 & 21:30	Common pipistrelle – Several foraging passes, bat was heard not seen, but suspected to be flying over garden area to the south of the site.
	21:32	Noctule - Several foraging passes, bat was heard not seen, but suspected to be flying over garden area to the south of the site.
	21:39	Leisler’s – Single brief commuting pass, bat was heard but not seen.
	21:48	Common pipistrelle – Two bats flying after each other in the garden within the site, before then both flying northwards.
	21:53	Noctule – One brief commuting pass, bat heard but not seen.
	22:04	Common pipistrelle – Seen foraging southwards over site and survey area.
	Summary:	No bat emergence recorded and no obvious flight lines or commuting routes identified. Relatively low levels of bat activity recorded, mostly comprising common pipistrelle commuting / foraging passes. Occasional passes of Leisler’s and noctule.
Infra-red Camera View (taken at end of survey):		

Table A5-2: Summary of Dusk Emergence Survey Results from the evening of 1<sup>st</sup> September 2023

Surveyor:	Bat Activity Time:	Key Notes on Bat Activity:
Surveyor A	20:07	Noctule – Single commuting pass, bat flying westward high over site.
	20:12	Common pipistrelle – Single brief commuting pass over garden. Bat flying in an easterly direction.
	20:30	Common pipistrelle – Foraging within the garden around the survey location.
	20:35	Soprano pipistrelle – Foraging to the south of the site, then flew of in an easterly direction.
	21:24	Brown long-eared - Single brief pass, bat heard but not seen.
	Summary:	No bat emergence recorded. Overall, relatively low levels of bat activity, with mostly common pipistrelle passes recorded. Occasional passes of noctule and soprano pipistrelle, with a single brown long-eared bat pass at the end of the survey.

<p>Infra-red Camera View (taken at end of survey):</p>		
<p>Surveyor B</p>	<p>19:57 20:07 20:19 20:23 20:39 20:40 20:42 21:19 21:24</p>	<p>Noctule – Single faint pass. Bat was heard but not seen. Noctule – Single faint pass. Bat was heard but not seen. Noctule – Single faint pass. Bat was heard but not seen. Brown long-eared – Presumed brown long-eared bat (due to no echolocation) flying southward low over rooftops of neighbouring houses and then over the garden within the site. The flight behaviour and timing would suggest that the bat might have recently emerged somewhere outside of the site. Common pipistrelle – Foraging briefly in the garden within the site. Common pipistrelle – Foraging in an easterly direction along the southern boundary of the site. Noctule – Single pass. Bat was heard but not seen. Serotine – Single pass. Bat was heard but not seen Lesser horseshoe – Single pass. Bat was heard but not seen, but presumed likely to be foraging in the garden area to the south of the site.</p>
<p>Summary:</p>	<p>No bat emergence recorded and no obvious flight lines or commuting routes identified. Relatively low levels of bat activity recorded, mostly comprising common pipistrelle commuting / foraging passes. Occasional passes of noctule, with single passes of serotine, lesser horseshoe and brown long-eared bat.</p>	
<p>Infra-red Camera View (taken at end of survey):</p>		

## APPENDIX 06

# Biodiversity Enhancement Plan

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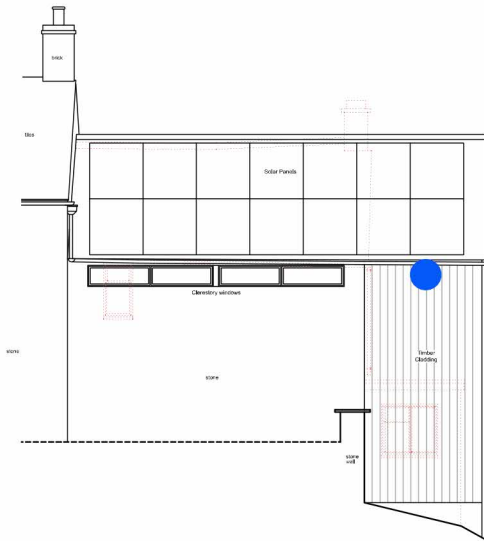
Scale: 1:20

EAST ELEVATION



Scale: 1:20

SOUTH ELEVATION



Scale: 1:20

WEST ELEVATION

Biodiversity Enhancement Legend:

● = Proposed location for a single 'woodstone' bat box (Beaumaris Woodstone Maxi Bat Box or similar-sized 'woodstone' equivalent)



■ = Proposed location of each bat access slate, with the roof to be lined with 'Bat-safe' breathable roofing membrane (TLX BatSafe Membrane) (three bat access slates installed in total)



● = Proposed location for a single sparrow terrace (Vivara Pro WoodStone House Sparrow Nest Box or equivalent 'woodstone' box) (two sparrow terraces to be installed in total)



● = Proposed location for a single swift box (Vivara Pro Madrid Swift Box or equivalent 'woodstone' box) (two swift boxes to be installed in total)



SCALE MEASUREMENTS SHOWN IN METRES.  
ACCURACY OF SCALE CAN ONLY BE ASSURED ON PROPERLY CALIBRATED MACHINERY

PLANNING NOTES  
-  
DEMOLITION NOTES  
-  
CONSTRUCTION NOTES  
-All dimensions must be checked on site and not scaled from this drawing.  
-Responsibility is not accepted for errors made by others in scaling from this drawing. All construction information should be taken from figured dimensions only.  
MAINTENANCE NOTES  
-

Revisions

No.	Description

VERITY & BEVERLEY  
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BENTLEY COTTAGE  
PAINSWICK

Scale: 1:50	23.1557/06
Date: Nov 2023	
Drawn: MAL	Revision
Size: A1	



**HILLCREST  
ECOLOGY**