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Ecological Impact Assessment

Hollydene
London Road
Blackwater
GU17 0AH

August 2023

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QUALITY CONTROL		
The information which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.		
Prepared By	Ecologist Libby Pinches BSc (Hons)	29/08/23
Reviewed By	Principal Ecologist Olatz Gartzia BSc MSc ACIEEM	30/08/23
This report remains valid for 12 months from date of issue. Survey data are valid for 12-18 months from the date the survey was undertaken.		

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living creatures are capable of migration and whilst protected species may not have been located during the survey duration, their presence may be found on site at a later date.

The views and opinions contained within the document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to works.

1. EXECUTIVE SUMMARY

1.1. Darwin Ecology Ltd was commissioned by the homeowner to undertake an Ecological Impact Assessment (EcIA) of proposals for the buildings at Hollydene, London Road, Blackwater, GU17 0AH. The surveys were required to support a planning application for the construction of a two-storey extension to the main house. This assessment was informed by a desk study, internal / external building inspection and emergence surveys for bats.

1.2. The building inspection assessed the main dwelling to hold a **high potential** to support roosting bats, Therefore, in line with the Bat Conservation Trust guidelines (2018) three dusk emergence surveys were carried out in 2023.

1.3. During these surveys, no bats were observed roosting on the area of the main dwelling to be impacted. Activity in the surrounding area was low to moderate with four different species recorded in total. The most regular activity was foraging along the adjacent woodland edge by *Pipistrellus* species.

1.4. Therefore, proposed plans will not directly impact any bat roosts and works can proceed without precautionary measures.

1.5. In the unlikely event that a bat is discovered during the works, all works must cease and a bat licensed ecologist contacted for advice.

1.6. Recommendations for enhancements have also been made which include the installation of bat and bird boxes.

2. INTRODUCTION AND BACKGROUND

2.1. Darwin Ecology Ltd was commissioned by the homeowner to undertake an EcIA of proposals for the buildings at Hollydene, London Road, Blackwater, GU17 0AH[1]. The surveys were required to support a planning application for the construction of a two-storey extension to the main house. This assessment was informed by a desk study, internal / external building inspection and emergence surveys for bats.

2.2. The proposed drawings on which this assessment is based are provided at **Appendix 1, Proposed Plans**.

2.3. The survey and report follow the Bat Conservation Trust (BCT) Good Practice Guidelines (2016).

2.4. The subsequent EcIA follows the roost assessment methodology set out by Wray *et al*. (2010) and the CIEEM Guidelines for EcIA in the UK and Ireland (2018).

Site Overview

2.5. The site is located in the residential town of Blackwater. The larger towns of Camberley and Frimley are located 2.88km northeast and 3.5km southeast, respectively.

2.6. The site comprises a residential property surrounded by an amenity garden. The site is immediately bordered by other detached residential properties with gardens to the east, a commercial property to the south, and a mature tree line to the north and west. Beyond the industrial property to the south is the busy London Road which leads to a large roundabout, 200m southwest of the site, that separates the site from Yateley and Hawley Commons (see **Figure 1**).

2.7. In the wider landscape, dense residential areas extent to the north, east and south. The heathland and woodland which comprises Yateley and Hawley Commons extents to the west and beyond the developed area to the south of the site. The Blackwater River runs through the landscape 550m to the north of the site and along its north and east banks are areas of woodland and grassland (see **Figure 2**).

Scope of Assessment

2.8. The process of EcIA aims to identify, quantify and evaluate the potential effects of development-related or other proposed actions on habitats, species and ecosystems.

2.9. Potential effects on the following ecologically sensitive receptors have been considered during the EcIA of Hollydene:

- Statutory designated sites; and
- Features of potential importance (such as loft voids or external crevice features).

[1] Ordnance Survey (OS) Grid Reference: SU 84743 59751

Figure 1: Site location within the local landscape (Copyright Google Earth Pro, 2023)

Figure 2: Site location within the wider landscape (Copyright Google Earth Pro, 2023)

3. LEGISLATION & POLICY

General Wildlife Legislation

3.1. Wildlife in the United Kingdom (UK) is protected through European and national legislation, supported by national and local policy and guidance. Development can contribute to conservation and enhancement goals outlined by these various legislation and policy by retaining and protecting the most valuable ecological features within a site and incorporating enhancements to provide biodiversity net gain.

3.2. This section provides a brief summary of the principle legalisation and policy that triggers the requirement for PRA and further ecological assessments in the UK. The presence of protected species within a site are a material consideration during the planning process. PRAs and any necessary further ecological assessments provide an ecological baseline for a site and evaluation of the potential impact of proposals.

3.3. It is the responsibility of those involved with development works to ensure that the relevant legislation is complied with at every stage of a project. Such legislation applies even in the absence of related planning conditions or projects outside the scope of the usual planning process (i.e. permitted development projects or projects requiring Listed Building Consent only).

Bat Legislation

3.4. In England and Wales, all bat species and their roosts are legally protected under the European *Habitats Directive (1992)*; the *Conservation of Habitats and Species Regulations (2017)*; the *Wildlife and Countryside Act (1981) (as amended)*; the *Countryside and Rights of Way Act, 2000*; and the *Natural Environment and Rural Communities Act (NERC, 2006)*.

3.5. Barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), greater horseshoe (*Rhinolophus ferrumequinum*), lesser horseshoe (*Rhinolophus hipposideros*), brown long-eared (*Plecotus auritus*), soprano pipistrelle (*Pipistrellus pygmaeus*), and noctule (*Nyctalus noctula*) bats are all species of principal importance in England under *Section 41* of the *Natural Environment and Rural Communities Act 2006*.

3.6. You will be committing a criminal offence if you:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat; or
- Intentionally or recklessly obstruct access to a bat roost.

3.7. The government's statutory conservation advisory organisation, Natural England, is responsible for administering European Protected Species (EPS) licences that permit activities that would otherwise lead to an offence.

3.8. A licence can be obtained if the following three tests have been met:

- Regulation 53(9)(a) - there is "no satisfactory alternative" to the derogation, and;
- Regulation 53(9)(b) - the derogation "will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range" and;
- Regulation 53(2)(e) - the derogation is for the purposes of "preserving public health or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment".

National Planning Policy

3.9. The *National Planning Policy Framework (2021)* aims to minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. Chapter 15 'Conserving and enhancing the natural environment' details what local planning policies should seek to consider with regard to planning applications.

3.10. Planning policies and decisions should contribute to and enhance the natural and local environment by:

> *174 a)* Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
>
> *174 b)* Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
>
> *174 d)* Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
>
> *175)* Plans should: distinguish between the hierarchy of international, national and local designated sites; allocate land with the lease environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement

of natural capital at a catchment or landscape scale across local authority boundaries;

176) Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and Broads. The scale and extent of development within all these designated areas should be limited, while development within their settings should be sensitively located and designed to avoid or minimize adverse impacts on the designated area.

3.11. Specific policies regarding habitats and biodiversity comprise:

179) To protect and enhance biodiversity and geodiversity, plans should:

a) identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species and identify and pursue opportunities for securing measurable net gains for biodiversity.

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

a) if significant harm to biodiversity resulting from a development cannot be avoid (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 of Sites 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 feature 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 and a suitable compensation strategy exists; and

d) development whose primary objective is to conserved or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around development 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.

3.12. *Circular 06/05: Biodiversity and Geological Conservation* provides guidance on the application of the law relating to planning and nature conservation and complements the *National Planning Policy Framework*.

3.13. *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* provides the *UK Biodiversity Action Plan* and country level biodiversity strategies for England, based on the list of habitats and species listed on *Section 41* of the *Natural Environment and Rural Communities Act 2006*. These are considered the habitats and species of principal importance requiring conservation action.

Local Planning Policy

3.14. The local planning policy for the site is the Hart Local Plan, adopted 2020, with relevant policies comprising:

Policy NBE2 Landscape: Development proposals must respect and wherever possible enhance the special characteristics, value or visual amenity of the District's landscapes. Development proposals will be supported where there will be no adverse impact to:

- The particular qualities identified within the relevant landscape character assessments and relevant guidance;
- The visual amenity and scenic quality of the landscape;
- Historic landscapes, parks, gardens and features;
- Important local, natural and historic features such as trees, woodlands, hedgerows, water features e.g. rivers and other landscape features and their function as ecological networks; and
- It does not lead to the physical or visual coalescence of settlements, or damage their separate identity, either individually or cumulatively with other existing or proposed development.

An assessment of the impact on landscape character and visual quality should be carried out proportionate to the scale and nature of the development proposed. Where

appropriate, proposals will be required to include a comprehensive landscaping scheme to ensure that the development would successfully integrate with the landscape and surroundings.

Policy NBE3 Thames Basin Heaths Special Protection Area: New development which is considered to have a likely significant effect on the ecological integrity of the Thames Basin Heaths Special Protection Area (SPA) will be required to demonstrate that adequate measures will be put in place to avoid or mitigate any potential adverse effects. When considering development proposals for residential or similar forms of development the following principles will apply:

- There is an 'exclusion zone' set at 400m linear distance from the Thames Basin Heath SPA boundary. Permission will not be granted for development that results in a net increase in residential units within this zone unless it can be demonstrated through an appropriate assessment that there will be no adverse effect on the integrity of the Thames Basin Heath SPA;
- There is a "zone of influence" set at between 400m and 5km linear distance from the Thames Basin Heath SPA boundary. mitigation measures will be required for all net new dwellings and must be delivered prior to occupation and in perpetuity.
- Residential development of over 50 net new dwellings that falls between five and seven kilometres from the Thames Basin Heath SPA may be required to provide mitigation measures.

Policy NBE 4 Biodiversity: In order to conserve and enhance biodiversity, new development will be permitted provided:

- It will not have an adverse effect on the integrity of an international, national or locally designated site;
- It does not result in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss;
- Opportunities to protect and enhance biodiversity and contribute to wildlife and habitat connectivity are taken where possible. All development proposals will be expected to avoid negative impacts on existing biodiversity and provide a net gain where possible.

Policy INF 2 Green Infrastructure: Development will be supported provided that:

- It protects the green infrastructure network as shown on the Policies map, avoiding any loss, fragmentation or significant impact on the function of the network;
- Where possible it enhances green infrastructure, through provision within the site, or where appropriate provision for off-site improvements in line with the green infrastructure Strategy;

- Any adverse impacts on the green infrastructure network are fully mitigated through the provision of green infrastructure on site or, where this is not possible, through appropriate off-site compensatory measures; and
- Where new green infrastructure is provided with new development, suitable arrangements are put in place for its future maintenance and management.

3.15. The Biodiversity Action Plan (BAP) for Hart is also relevant to this site. This document aims to build on the previous plan while reflecting new opportunities and areas of focus for the period until 2023. The BAP will seek to deliver specific projects, many of which will be linked to the aspirations within the Corporate Plan for protecting and enhancing biodiversity in Hart. The BAP and its associated actions is also a key part of delivering national biodiversity targets at a local level and to facilitate Hart meeting its statutory biodiversity duties. The broad aims of this Plan are:

- To continue protecting habitats and species within the district and enhance existing areas for wildlife;
- To ensure that all council owned or managed designated nature conservation sites are managed favourably and monitored accurately;
- To action the creation of new habitats through planning policy, including investigating the feasibility of introducing a biodiversity offsetting scheme;
- To continue raising awareness of biodiversity within the community;
- To raise awareness of biodiversity among council staff and members and work to make biodiversity a key consideration in council decision making;
- To monitor and review local biodiversity and this action plan.

Hampshire Biodiversity Action Plan

3.16. To advance biodiversity conservation in Hampshire, the following objectives have been identified:

- to audit the nature conservation resource of Hampshire;
- to identify from the audit habitats and species of priority nature conservation concern, including those which are locally distinct;
- to prepare action plans for habitats and species of priority concern and follow through with programmes of implementation and monitoring;
- to ensure that data on habitats and species is sufficient to enable effective implementation and monitoring of biodiversity objectives;
- to review general issues affecting biodiversity, such as agriculture and development, and chart a course of appropriate action;
- to raise awareness and involvement in biodiversity conservation across all sectors;

- to encourage individuals and organisations to review their role in biodiversity conservation and the resources required, and develop their own action in response to the Biodiversity Action Plan for Hampshire;
- to maintain an ongoing partnership which will co-ordinate, develop and support action for biodiversity;
- to monitor and review progress towards meeting the above objectives and the targets set out in the habitat and species action plans; and
- to periodically update the Biodiversity Action Plan for Hampshire and its component habitat and species action plans to take account of changing circumstances.

4. METHODOLOGY

Desk Study

4.1. A desk study was undertaken for designated sites, EPS licences and habitat records within 2 km of the site:

- The MagicMap website was reviewed, to obtain information on any designated sites of nature conservation interest and details of any EPS licences for bats issued within 2 km of the site;
- The Hart District Council Planning Portal was searched for past and pending planning applications that may have associated ecological documents detailing results of bat surveys; and
- Google Maps and OS Leisure Maps was utilised to view aerial photographs and maps to assess the ecological context of the site within the wider landscape.

4.2. Natural England has developed a tool to help assess the potential risks to SSSIs by proposed developments. These are known as 'Impact Risk Zones' (IRZs) and they define the area around a SSSI that could be sensitive to development, considering the particular sensitivities of the feature for which the site is designated.

4.3. The IRZs help inform whether a development proposal may affect a SSSI and if so, whether it is necessary for the Local Planning Authority to seek pre-application advice from Natural England. Information on the IRZs was determined from the MAGIC website to determine if the LPA is required to seek consultation for the current development.

Building Inspection

4.4. Licensed Ecologist Rob Schwar BSc (Hons) MSc[2] conducted a site visit at Hollydene on 11th May 2023 in accordance with the following methodology:

External Survey

4.5. An investigation was carried out of external features with potential for use by roosting bats, such as gaps under roof and ridge tiles, gaps at soffit boxes or fascias. A search for bat droppings was made beneath each potential entry/exit point identified where accessible. The surveyor used binoculars and powerful, low-heat LED torch.

Internal Survey

4.6. An investigation was carried out of the roof void (including the floor and walls) for signs of bats roosting and the access potential into the roof void for bats. The surveyor looked for bats, bat droppings, likely access points, signs of feeding, dead bats, scratch marks and staining, and made a suitability assessment of the structure of the roof.

Potential to support roosting bats

[2] Class 1 Bat Licence: 2023-11171-CL17-BAT

4.7. Each building and tree was assessed for its potential to support roosting bats as detailed in **Table 1** below which is taken from the Bat Conservation Trust 2016 guidelines Table 4.1 and Table 7.3.

Table 1: Roost Classification from the Bat Conservation Trust (2016) guidelines.

Category	Description of Roosting habitat
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure 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, protection, appropriate conditions and or suitable surrounding habitat to be used on a regular basis by large numbers of bats.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, condition and surrounding habitat but unlikely to support a roost of high conservation status.
High	A structure with one or more potential roost sites that are obviously suitable for use by a larger number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Emergence Surveys

4.8. Three dusk emergence surveys were conducted during the 2023 survey season. Surveys were undertaken in line with BCT Good Practice Guidelines (2016), with any limitations outlined below.

4.9. A summary of the survey dates, surveyor details, and weather conditions are provided in **Table 2**.

4.10. Surveyors were positioned strategically around the building(s) in order to provide adequate coverage of all elevations. Surveyors focused on any features identified during the building inspection as having potential to be used as bat access points. The location of the surveyors and building numbers / names are shown on **Figure 3, Bat Survey Results**.

4.11. The dusk surveys began 15 minutes prior to sunset and lasted 1.5 hours after sunset. Surveyors recorded bat activity using hand-held Echometer Touch detectors connected to Android or iPhone devices. Analysis of recordings was undertaken after the surveys to confirm species identification. Observations recorded during surveys included bat access points, bat species, time, and type of activity (e.g. emergence, re-entry, commuting, foraging, etc.). Incidental records of bats within the vicinity of the building (but not necessarily roosting) were also recorded.

4.12. A Canon AX20 video camera and Black Sun 2 B502 infra-red illuminator were also used to film bat activity at a fixed position. The video footage was reviewed following the survey to identify any bat activity captured and any significant activity patterns and any access points were identified.

Table 2: Emergence and re-entry survey dates and weather conditions

Date	Survey type	Sunset time	Start weather conditions	End weather conditions	Surveyors
20/6/23	Dusk	21:23	Rain: 0 Wind: 0 Cloud cover: 10% Temperature: 19ºc	Rain: 0 Wind: 0 Cloud cover: 0% Temperature: 18ºc	Abigail Harrington BSc (Hons) Eleanor Kemp BSc MSc
12/7/23	Dusk	21:16	Rain: 0 Wind: 0 Cloud cover: 10% Temperature: 18ºc	Rain: 0 Wind: 1 Cloud cover: 25% Temperature: 16.5ºc	Jenny Denny BA Emma Hansford
31/7/23	Dusk	20:50	Rain: 0 Wind: 1 Cloud cover: 80% Temperature: 17ºc	Rain: 0 Wind: 0 Cloud cover: 80% Temperature: 15ºc	Jenny Denny Eleanor Kemp

Limitations

4.13. The surveys were undertaken in accordance with the best practice guidelines within the peak bat activity period (May to September inclusive). The results are therefore considered to be an accurate representation of the general use of the building by roosting bats.

4.14. Nevertheless, bats may use roosting features intermittently throughout the year and may be present in larger or smaller numbers depending on their breeding cycle, weather conditions and in response to disturbance. Bats may be present at other times of the year and the results in this report should therefore be viewed in the context intended.

4.15. During the emergence surveys, the eastern elevation was not visible to the surveyors due to the boundary of the site running directly along the eastern wall of the building as well as vegetation coverage. This is not considered to be a limitation to the impact assessment as the works do not effect the eastern elevation. Therefore, if any bat roosts are present on this elevation they will be retained and will not be impacted by the proposals.

4.16. The desk study does not include data from the local environmental records centre (LERC). However, following Bat Conservation Trust guidelines a full data search is not necessary for smaller projects e.g. projects impacting a single house or barn.

4.17. This is a small scale project where the proposed works are restricted to the single building on site. Therefore the lack of LERC data is not considered a limitation to the ecological assessment of the site.

5. SURVEY RESULTS

Desk Study

5.1. There are two statutory sites designated for biological (rather than geological) reasons, including a SSSI and a Local Nature Reserve (LNR). These sites are detailed further in **Table 3**.

Table 3: Statutory designated sites within 2km of the site at Hollydene.

Designated sites	Name and designation type	Reason for designation	Approximate distance from site
Within Site Boundaries	There are no designated sites within the site boundaries		
Within 2km of Site	Castle Bottom to Yateley and Hawley Commons SSSI	Notified for its heathland and young conifer plantation which supports an internationally important population of Dartford warbler *Sylvia undata* and populations of two other internationally important species, woodlark *Lullula Arborea* and nightjar *Caprimulgus Europaeus.* The scrub/heathland interface supports a particularly rich invertebrate fauna including a number of nationally scarce species. It also supports an outstanding dragonfly assemblage.	242m southwest
	Thames Basin Heaths SPA	This site forms part of Natura 2000, a European-wide network of sites of international importance for nature conservation established under the European Community Wild Birds and Habitat directives. The site is one of the South East's most important natural assets with the lowland heath supporting important populations of woodlark, nightjar and Dartford warbler - vulnerable ground-nesting birds.	242m southwest
	Blackwater Valley SSSI	The site comprises an area of unimproved alluvial meadows, swamp and wet valley alderwood. The meadows are grazed by stock and support rich plant communities, with a number of species associated with ancient grassland sites. Such meadows are a nationally rare and threatened habitat. The meadows are bounded by hedgerows, streams and ditches, and the River Blackwater runs through the site. An area of wet deciduous woodland supports a rare species of sedge. The structural and floristic diversity of the site provides habitats suitable for a wide range of insects and other invertebrates.	505m northeast

5.2. The site is also within the Impact Risk Zone (IRZ) for Basingstoke Canal SSSI and the Ash to Brookwood Heaths SSSI.

5.3. There are four records on MagicMap of EPS licences for works impacting bats within 2km of the site:

- EPS mitigation licence (EPSM2012-4279) to allow the destruction of a resting place for brown long-eared bat, approximately 1.192km north of the site.
- EPS mitigation licence (2019-39219-EPS-MIT) to allow the destruction of a resting place for common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrelle, and brown long-eared bat, approximately 1.44km west of the site.

- EPS mitigation licence (EPSM2013-5674) to allow the destruction of a resting place for brown long-eared bat, approximately 1.7km south of the site.
- EPS mitigation licence (EPSM2012-5136) to allow the destruction of a resting place for soprano pipistrelle, approximately 1.75km south of the site.

5.4. A review of records held by the Hart District Council planning portal did not identify any records of bats or records of ecological surveys in regards to bats or other protected species in the previous two years.

5.5. There are numerous areas of priority habitat deciduous woodland within 1km of the site, the closest of which is an unnamed woodland immediately adjacent to the property boundary of the site to the northwest. Other priority habitats located within 1km of the site include lowland dry acid grassland, coastal and floodplain grazing marsh, good quality semi-improve grassland, lowland meadows, purple moor grass and rush pasture, lowland heathland, lowland fens, and wood pasture and parkland BAP.

Habitats

5.6. The predominant habitat on the site was a regularly mown improved grassland which was used as an amenity lawn with a sward height of around 5-10cm. In addition to this, there are areas of hardstanding, making up a path, a driveway, and a patio area. The garden also contained some ornamental trees and ornamental planting.

Building Inspection

Main House

External Assessment

5.7. The main building on site was a two storey detached residential dwelling of rendered brick and breeze block construction. The roof has hipped and gabled ends with clay roof and ridge tiles which were in good condition with limited lifting. A brick chimney was present with lead flashing at its base which was flat. Clay hanging tiles are present on the first floor of the building and offer numerous roosting opportunities due to gapping. On the north facing gable end there are clay tiles in place of a barge board which also offers roosting opportunities. A single storey extension is present on the north elevation and a porch is present on the south elevation. Both had gabled roofs of clay tiles and hanging tiles on the small gable ends. A dormer window to the north also featured hanging tiles.

Internal Assessment

5.8. There are two loft voids within the dwelling, one in the main section of the house and one in the north single-story extension.

5.9. The main loft void is an L-shape measuring 8m and 7m along the lengths, 4m wide, and 2.5m high to the apex. This void is regularly used for storage and had a halogen light strip. The void had a timber A-frame with queen posts and a central ridge beam. Bitumen felt lining is present and in good condition. No light ingress was identified. Rodent droppings were identified throughout the void. No evidence of bats was identified.

5.10. A portion of the roof space in the north extension consists of a distinct void. The other portion has been converted with skylights present. The void space measures 2.5m long, 5m wide and 1m high to the apex. The void had a timber A-frame with chip boarding on the floor and backing the tiles with fibreglass insulation behind. No light ingress was identified. Rodent droppings were present but no evidence of bats was identified.

5.11. No evidence of bat presence was identified in the main house. This building was assessed to have **high potential** to support roosting bats due to the external crevice roosting opportunities present under the hanging tiles.

BUILDING INSPECTION PHOTOS - MAIN DWELLING

Image 1: South and west elevation of the main house.

Image 2: North elevation of the main house and existing extension to be renovated.

Image 3: The hanging tiles on the north elevation which will be impacted by the works.

Image 4: Internal view of the main void.

Image 5: Internal view of extension void.

Emergence Survey Results

5.12. **Figure 3** illustrates a summary of the results.

Survey 1 - 20th June 2023

5.13. During the emergence survey on the 20th June 2023, no bats were recorded emerging from the building.

5.14. Overall, there was low to moderate activity in the area. Activity earlier on in the survey consisted of common pipistrelle and soprano pipistrelle passing through the site from the direction of the woodland along the northern boundary. Occasional foraging activity was recorded from these species throughout the survey. Brief foraging passes were also recorded from serotine *Eptesicus serotinus* and noctule.

Survey 2 - 12th July 2023

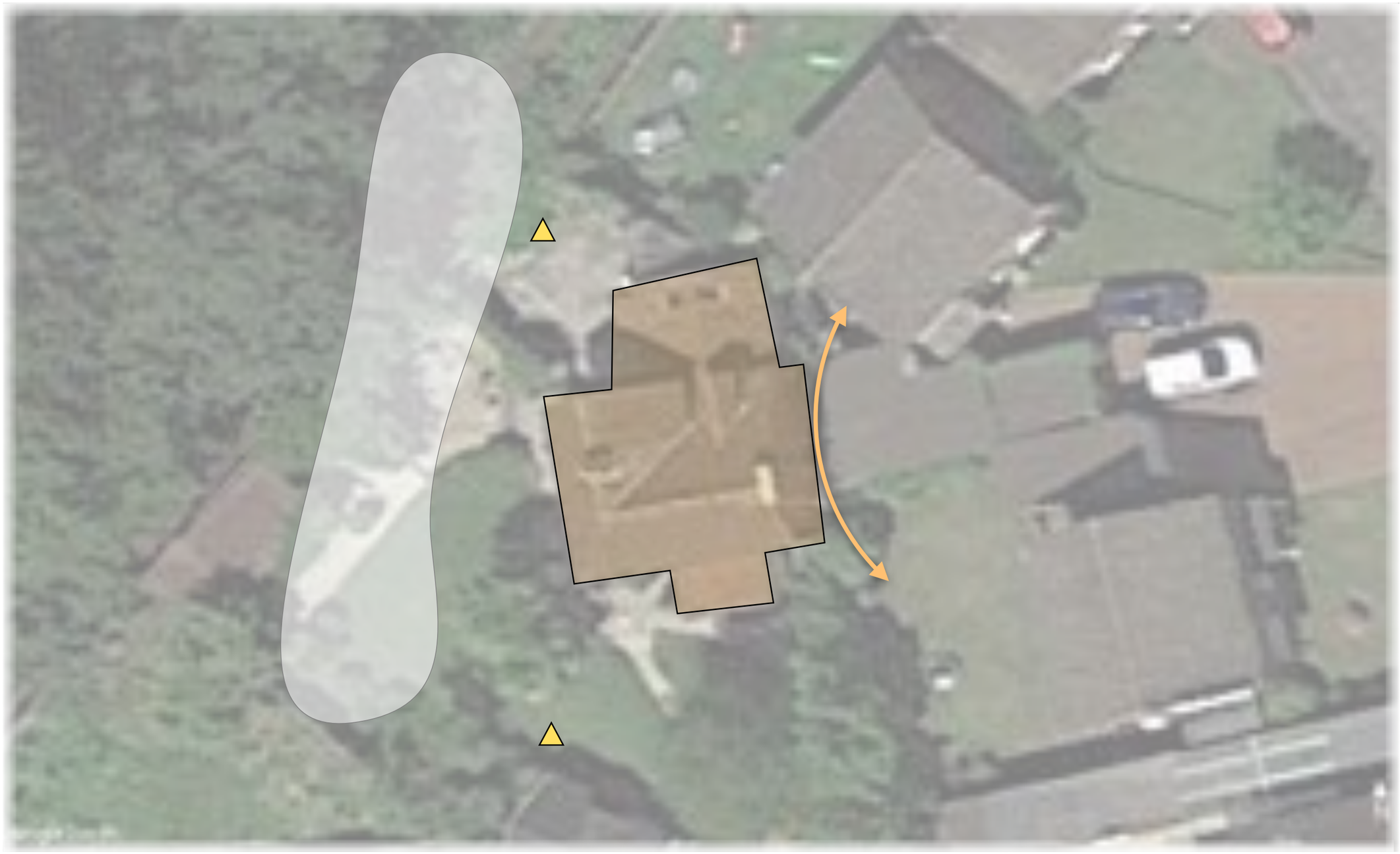
5.15. During the emergence survey on the 12th July 2023, no bats were recorded emerging from the building.

5.16. Overall, there was moderate activity in the area. Foraging activity was recorded from soprano pipistrelle around the woodland edge to the north of the site. Two individual bats were observed passing over the site at 21:44. No calls were recorded from these bats but the surveyor visually identified these bats as a myotis species due to their size and flight pattern. At 21:59, four individual soprano pipistrelle were recorded swarming around the building on the east elevation. From 22:15 onwards, only two soprano pipistrelle were recorded foraging in the area. Therefore, it is possible that two soprano pipistrelle re-entered a roost on the east elevation. No other species were recorded during the survey.

Survey 3 - 31st July 2023

5.17. During the emergence survey on the 31st July 2023, no bats were recorded emerging from the building.

5.18. Overall, there was low activity in the area. Regular foraging activity was recorded from common pipistrelle and soprano pipistrelle throughout the survey. A single pass from a myotis species was also recorded along with a pass from a serotine.



***NOTE Areas are indicative and are not shown to exact scale.**

Building surveyed

Surveyor Location

Bat Emergence/ Re-entry Location and Flight Path (coloured by species)

Area of Continuous Bat Activity (coloured by species)

Bat Species

Soprano Pipistrelle

Multiple species including common pipistrelle and soprano pipistrelle.

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Project: Hollydene

Figure 3: Emergence Survey Results

Date: August 2023

6. IMPACT ASSESSMENT

Designated Sites

6.1. The site is located within the IRZ for the Basingstoke Canal SSSI and the Ash to Brookwood Heaths SSSI, which applies restrictions to transport proposals, solar schemes, combustion processes, quarries, industrial/agricultural development, and residential proposals where more than 50 units are being built or more than 10 units are being built outside existing settlement areas. However the proposed works do not come under any description which would require the local planning authority to consult Natural England.

6.2. It is not anticipated that the proposed works will impact any statutory designated sites, priority habitats or ancient woodlands through land take. There will be no increase in residential units and therefore no resulting impacts to surrounding designated sites, green space and wildlife sites through increased footfall.

6.3. Considering the scale of the proposed, and the distance to any protected areas, there are no anticipated direct or indirect impacts and no recommended mitigation for designated areas or priority habitats.

Habitats

Evaluation of Habitats on Site

6.4. The habitats within the site to be impacted, primarily hardstanding and amenity grassland, are common, widespread and have little ecological value. The trees within the site also have low value due to being small, non-native and ornamental species.

6.5. The site is immediately adjacent to priority deciduous woodland on the northern boundary.

Impact Assessment

6.6. The footprint of the proposed extension is primarily located on an area of patio. A small area of amenity grassland and ornamental planting is likely to be lost under the footprint as well. A single, low value tree will be removed to facilitate the works.

6.7. The works will likely encroach upon the root protection zones of the trees in the adjacent priority deciduous woodland. However, the extent of compaction on the roots will be reduced as the footprint of the extension is primarily on an area of patio and so the ground in this area has already been compacted.

Recommendations

6.8. *Habitat Screening:* Heras fencing will be installed along the outer edge of the development footprint to ensure that the adjacent woodland is not negatively impacted by construction activities. Screening barriers will be implemented on habitat protection fencing during the construction phase of the development, to prevent dust and waste from the construction site from contaminating the habitat. No surface run-off from the construction site will be allowed to flow towards the woodland.

Bats

Evaluation of Bat Roosts on Site

6.9. Based on the results of the building inspection and phase 2 emergence surveys conducted at Hollydene, the area of the dwelling to be impacted does not support a bat roost. It is possible that there is a soprano pipistrelle day roost located on the east elevation, however this could not be confirmed through the surveys.

Impact Assessment

6.10. The proposed plans at Hollydene comprise the construction of a two-storey extension on the north and west elevations of the main house. The porch will also be subject to some renovation works. The east elevation will not be impacted by the works.

6.11. The proposed works will not result in the destruction of a bat roost, and therefore, works can proceed without any requirement of a protected species licence or further surveys.

6.12. No precautionary measures are recommended in this instance.

6.13. In the unlikely event that a bat is discovered during the works, all works must cease and a bat licensed ecologist contacted for advice.

6.14. *Lighting:* The lighting on site must be directed to avoid light spillage onto vegetation, particularly linear habitat features such as the woodland strip to the north of the site. Bats are sensitive to light and could potentially avoid the area if access points or the surrounding areas become lit. During the surveys, bat activity was highest along the woodland edge. Appropriate lighting options will prevent a negative impact on bats potentially using the habitats on site and should be approved by a suitably qualified and licensed bat ecologist. If appropriate measures are taken to reduce light spillage from the development, it is likely that there will be no negative impacts on local bat populations. In particular, any external lighting should have passive infrared sensors to ensure that any light pollution is restricted to small amounts of time. See the **Appendix** for further information on designing lighting to minimise impacts on bats.

7. ENHANCEMENT RECOMMENDATIONS

7.1. National planning policy states that all developments should seek to enhance onsite biodiversity whether impacts on protected species are recorded or not. Incorporating enhancement features into new or renovated buildings should be carefully considered. These features can be simple and inexpensive, please see below for specific recommendations.

Bats

7.2. To increase the roosting opportunities for bats in the area, at least one roosting feature will be integrated into the new extension. This could be an integrated bat box such as a Schwegler 1FR bat tube or Green&Blue Bat Brick, which are built into the external brickwork of the new extension in order to provide new roost locations. Alternatively, where traditional building methods are to be used, discrete features can be built into a wet ridge. This is done by providing a gap in the mortar allowing access for bats. By linking together a couple of ridge tiles, the feature becomes more suitable for a greater range of species and number of bats (see the **Appendix**).

7.3. Where discrete features are being created, breathable roofing membrane must **NOT** be used in order to avoid hazards to bats.

7.4. Alternatively, at least one external bat box, such as Greenwoods Small Hollow or Vivara Pro Beaumaris bat box will be installed on the external elevations of the extension or on any mature trees on site. Bat boxes should be installed at a height of at least 4m, preferably on a southern un-cluttered aspect with good connectivity to linear features such as other mature trees and hedgerows. The location should be determined by a licensed bat ecologist to ensure likelihood of repeated use is increased (see the **Appendix**).

Breeding Birds

7.5. At least one bird box should be installed on the new extension or any retained trees. Bird boxes should be installed at least 4 m from ground level and with unobstructed air space in front (see the **Appendix**).

8. REFERENCES

CIEEM (2012) Guidelines for Preliminary Ecological Appraisal. *Technical Guidance Series*.

Collins, J. (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)* The Bat Conservation Trust, London.

Mitchell-Jones, A.J., (2002). *Bat Mitigation Guidelines*. English Nature, Peterborough.

Mitchell-Jones, A. J. & McLeish, A. P. (2004). *Bat Workers' Manual (3rd Edition)*. JNCC, Peterborough.

Ordnance Survey Maps [online] www.osmaps.ordnancesurvey.co.uk [August 2023].

Schofield, H. W. & Mitchell-Jones, A.J. (2004). The Bats of Britain and Ireland. Vincent Wildlife Trust, Ledbury.

UK Government's Countryside Geographic Information Website [online] www.magic.gov.uk [August 2023].

Wray, S., Wells, D., Long, E. & Mitchell-Jones, T. (2010) Valuing Bats in Ecological Impact Assessment. In Practice, No. 70.

Legislation and Policy

Council of the European Communities (1992) *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (EN).* Official Journal of the European Communities [online] www.eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:1992:206:TOC [August 2023].

Council of the European Communities (2009) *Council Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds (EN).* Official Journal of the European Union [online] eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:020:0007:0025:EN:PDF [August 2023].

Department for Environment, Food and Rural Affairs (2011) *Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services* [online] www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf [August 2023].

Ministry of Housing, Communities & Local Governments (2021) National Planning Policy [online] assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf [August 2023].

Natural Environment and Rural Communities Act 2006 (UK Parliament). *The National Archives* [online] www.legislation.gov.uk/ukpga/2006/16/contents [August 2023].

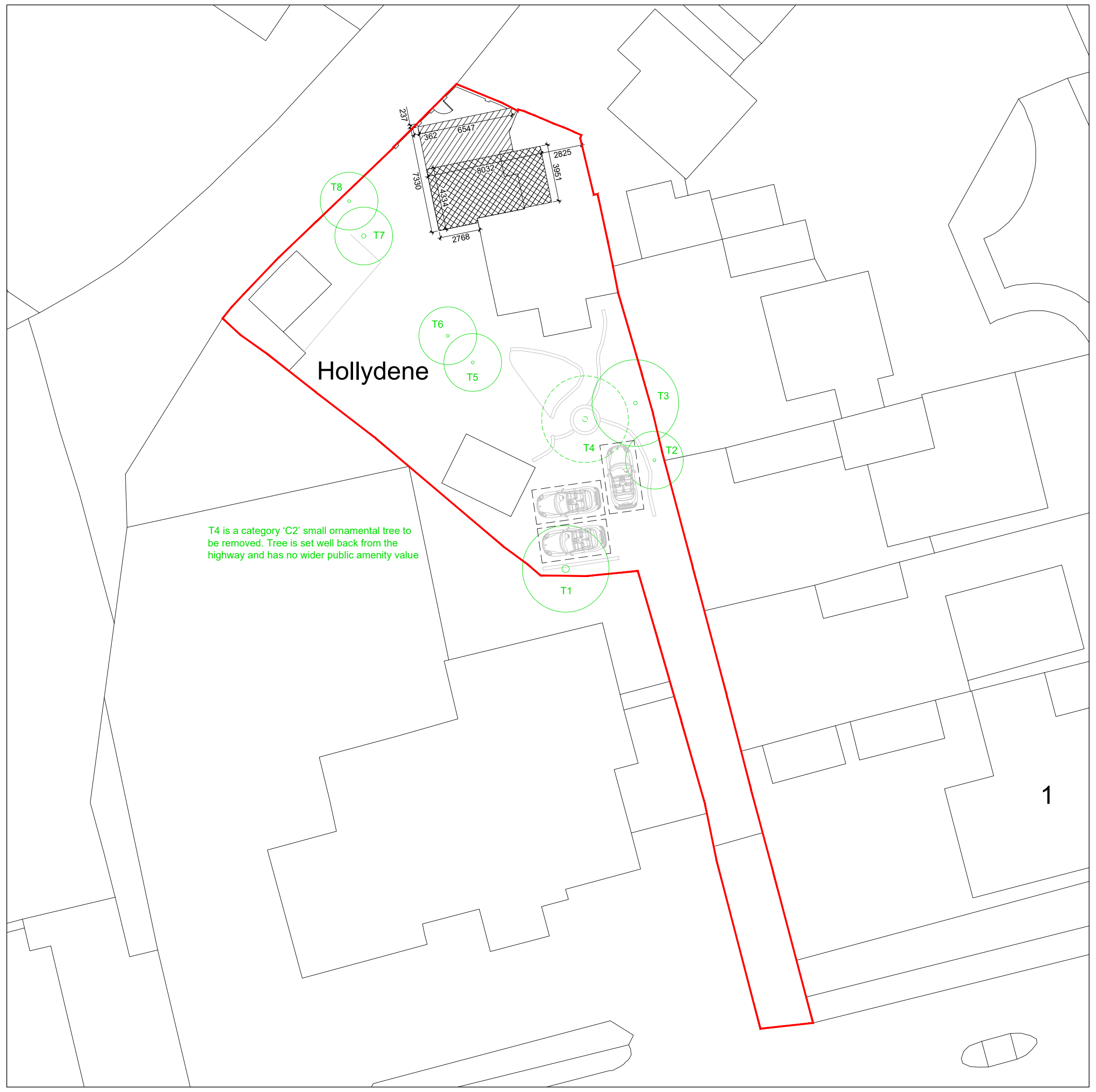
Office of the Deputy Prime Minister Circular (2005) *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System* [online] www.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf [August 2023].

The Conservation of Habitats and Species (Amendment) Regulations 2017 (UK Parliament). *The National Archives* [online] www.legislation.gov.uk/uksi/2017/1927/contents/made [August 2023].

The Hunting Act (2004) The National Archives [online] www.legislation.gov.uk/uksi/2012/1927/contents/made [August 2023].

The Wildlife and Countryside Act 1981 (England and Wales) (Amendment) Regulations 2004 (UK Parliament). *The National Archives* [online] www.legislation.gov.uk/ukpga/1991/39/contents*Countryside and Rights of Way Act, 2000* [August 2023].

APPENDICES



Scale (1:500)

0m 10m 20m

5m 15m

Notes

This drawing is to be read in conjunction with the other drawing(s) and specification(s).

Do not scale from this drawing, except for Planning purposes.

All dimensions are to be checked on site.

Single storey extensions/alterations

Two storey extensions/alterations

N

Rev.	Description	Date
A	Parking indicated as per LPA's requirements	06.02.23

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Mr and Mrs Brock

Project

Hollydene
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Drawing Title

Block Plan

Date	Drawn	Scale
October 2022	DH	1:500 @ A3

Drawing No.	Rev.
2022/95/L02	A

☐ Feasibility ■ Planning ☐ Building Regulations

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Bats & Lighting

THE IMPACT OF LIGHTING ON BATS

Bats favour a dark environment for both roosting and foraging as they are adapted to low-light conditions. Artificial lighting will disturb bats if the lighting covers roost access points, flight paths or foraging habitats.

The main peak of nocturnal insect abundance occurs at dusk and a delay in emergence results in a lower foraging rate for bats.

Artificial lighting creates a 'vacuum effect' for nocturnal insects. During the night nocturnal insects use the light of the moon* to navigate. However, artificial lighting and even sky glow above cities obscures the natural moonlight as it is closer and radiates light in multiple directions.

Some species of bats have been recorded foraging around street lights such as Pipistrelle species and Nyctalus species. However, species that are less tolerant of artificial light are at a disadvantage when foraging as insects are drawn away from these species usual foraging grounds into the zones of artificial light.

Lighting must be considered in context to any development as increased lighting may cause roost abandonment, reduced reproductive success, and reduced foraging. Mitigation to reduce the impacts of lighting for bats is therefore of great importance in bat conservation.

Table 1: Summary of predicted impact of lighting for each species/genus

Impact Behaviour	High	Medium	Low
Maternity roosts	All species	-	-
Night roost	*Rhinolophus hipposideros* *Rhinolophus ferrumequinum* *Myotis spp.* *Plecotus spp.*	*Pipistrellus spp.* *Nyctalus spp.* *Eptesicus serotinus* *Barbastella barbastellus*	-
Emergence	All species	-	-
Foraging	*Rhinolophus hipposideros* *Rhinolophus ferrumequinum* *Myotis spp.* *Plecotus spp.*	-	*Pipistrellus spp.* *Nyctalus spp.* *Eptesicus serotinus* *Barbastella barbastellus*
Commuting	*Rhinolophus hipposideros* *Rhinolophus ferrumequinum* *Myotis spp.* *Plecotus spp.*	-	*Pipistrellus spp.* *Nyctalus spp.* *Eptesicus serotinus* *Barbastella barbastellus*
Swarming	All species	-	-
Hibernation	All species	-	-

*For more information see Warrant, E., and Dacke, M. (2016) Visual Navigation in Nocturnal insects. *Physiology*, 31, 182-196.

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Bats & Lighting

Sources of light that can disturb bats include; light spill via windows, sport floodlighting, car headlights, roadside lighting, security lighting, aesthetic lighting of waterways, and aesthetic illumination of buildings. Glare will affect bats over greater distance than the target area directly illuminated.

Avoidance is the most effective method, but if this is not possible the following measures should be considered.

What lighting should I use?

- Low pressure sodium lights or 'warm' LEDs
- Wavelength above 540nm
- Colour temperature below 2700K
- Shielded lights that prevent light spill above a 70 degree angle
- Passive infrared (PIR) motion sensors

What to avoid:

- Lighting roost entrances, flightpaths, and foraging or commuting routes
- Reflective surfaces beneath lighting
- High level lights
- Non-directional lighting

Lighting should be considered at an early stage allowing impacts to be minimised through the design of the site.

Key Points

- Keep lighting intensity to the minimum level required
- Limit the times that lights are on to provide some dark periods (e.g. switching installations off between midnight and 5am)
- Dim lighting according to demand
- As an alternative to lighting pathways use paving materials that reflect moonlight
- Low level lighting allows darkness to be retained within higher vegetation
- Set dark habitat buffers - lighting should always be a minimum of 25m from vegetated margins and 40m from waterbodies
- Incorporate dark corridors within the site
- Compensate for the loss of dark areas by enhancing other dark areas
- Consider building design - install internal lighting away from windows

Bat Conservation Trust guidance note 08/18 'Bats and artificial lighting in the UK & http://www.cost-lonne.eu/recommendations/

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Integrated Bat Boxes

How to Install

Integrated bat boxes can be installed into the brickwork of buildings to provide a roosting spot for bat species.

Being embedded in the masonry of a building, they do not impact the exterior seal of structure and are commonly integrated in new builds.

With some modification or bespoke design, integrated bat boxes can be installed in such a way that it does not interfere with a building's exterior facade.

The 1FR bat tube has a 45 degree angle for bats to land on and crawl upwards into the bat tube. It has been designed to be installed within or adjacent to the the external skin of the block work or brickwork.

For a rendered finish, the 1FR bat tube can be built into the external skin of breeze blocks (acting as a block) and be rendered over (ensuring the access point is left clear). Ridges should be created in the render immediately below the access point, which will aid the bats when crawling into the bat tube.

For a brickwork finish, the 1FR bat tube should be installed within the brickwork, set back slightly to allow the front to either be rendered over or for a continuity of brick slips to be mortared over the top of the tube. The upper brick slip should overlap the access point and the lower brick slip should be in line with the 45 degree angle of the bat tube.

Alternatively, **Habibat** bat tubes can be purchased that are designed for brickwork design and can be custom made.

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Integrated bat Features

Raised Access Tiles

Location of the Raised Access Tiles

Anywhere that the access is not illuminated by artificial lighting at a height of 2-7m.

Access for summer maternity roosts should be placed on southerly or westerly aspects. Male roosts and winter hibernation roosts on northerly aspect.

Tiles can be flat and “pegged” outwards, or specialised bat access tiles can be purchased.

Raised access tiles can provide two uses; roosts for individual “crevice dweller” species that prefer to roost in narrow gaps or, providing access to larger roosting spaces such as loft voids.

Raised access tiles for bats can be easily incorporated in both roofs and hanging tiles by the methods below.

An Ecologist will advise on the best locations and use for your raised access tiles.

Construction of the Raised Access

The tiles can be pegged out using small amount of mortar/cement/pieces of tile placed under the bottom of the tile to raise it slightly from the one below.

Crevices should be pegged out to 20-30mm wide. However a wider gap may be required for a known maternity roosts

Create a small access hole in the felt that is 20-50mm wide x 15-20mm high. Gaps larger than this can be accessed by birds that may block the gaps with nesting material.

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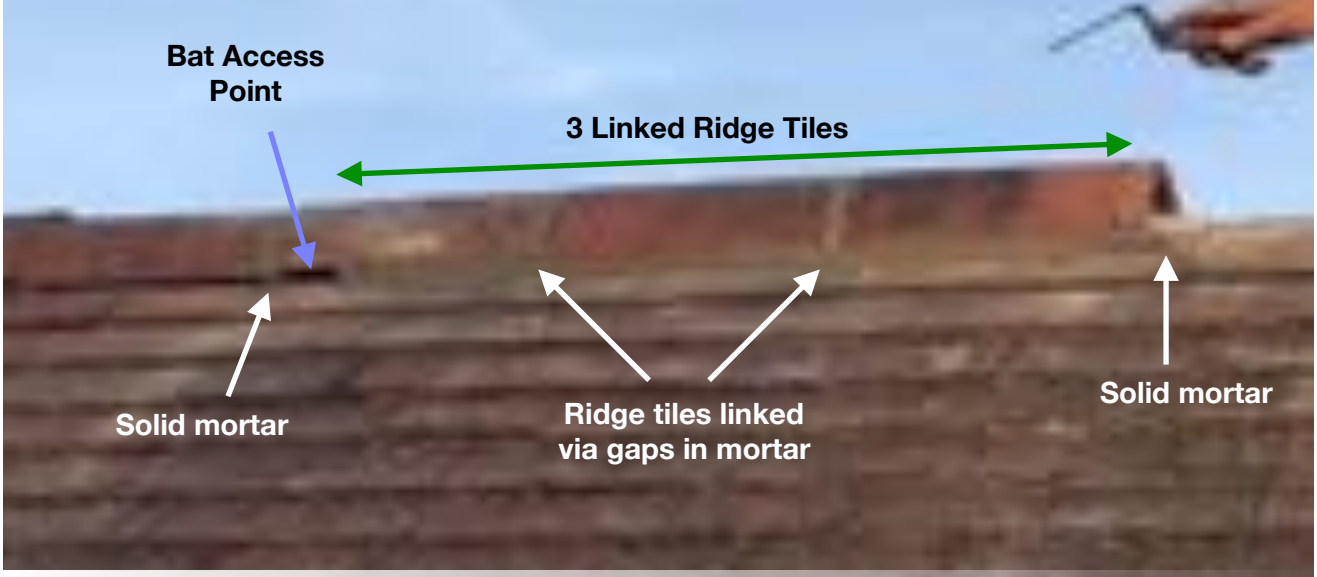
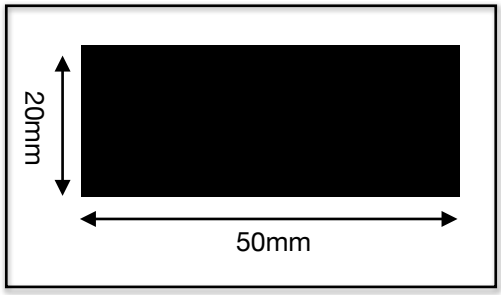
Ridge Tile Crevice Feature



HOW TO CREATE

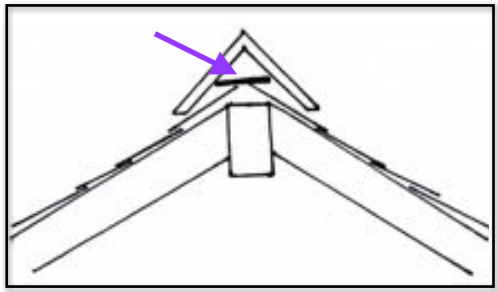
Note: Use three adjacent ridge tiles for one Ridge Tile Crevice Feature

1. Notch out the underside of a ridge tile measuring 20mm high by 50mm wide.

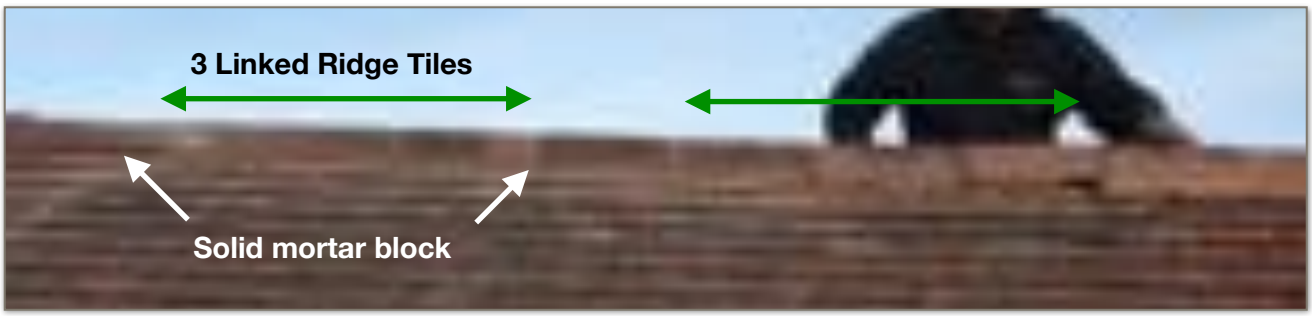


2. Or leave a gap in the mortar of the same size

3. Leave the gap mortar free when bedding the tile onto the ridge.



4. To ensure the three ridge tiles remain linked either; place a broken tile over the ridge and mortar only above the tile (left) or fill one side with mortar and leave the other side empty (do this on alternate sides to ensure the feature does not become draughty) (right).



5. At each end of the three linked ridge tiles insert a solid mortar block to reduce through draughts.

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External Bat Boxes

TYPES OF BAT BOXES

Schwegler 2F Double Front Panel

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for pipistrelle and Myotis species
- A second inner wooden panel is fitted adjacent to the front panel imitating a cavity wall

Schwegler 1FD Double Front Panel

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for pipistrelle and Myotis species
- A second inner wooden panel is fitted adjacent to the front panel imitating a cavity wall
- Small entrance hole discourages birds from using the box

Vincent Pro Bat Box

- Manufactured from timber and recycled plastic
- The front and the top of the box is black, which helps heat absorption
- Suitable for a range of species including pipistrelle species, Myotis species, and brown long-eared bats.
- No maintenance required

Schwegler 2FN

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for pipistrelle species, Myotis species, serotine, brown long-eared, noctule and Leisler's bats
- Dual entrance
- Birds and dormice have also been found using this box
- A newer model is now available, Schwegler 3FN, designed with smaller entrance holes which discourage birds and dormice

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External Bat Boxes

Schwegler 1FS Large Colony Box

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for a range of bats including pipistrelle species, Myotis species, Noctule, and brown long-eared bats
- Three grooved inner wooden panels are connected to the front panel, which are ideal for bats to cling to.
- Accommodates large summer colonies

Schwegler 1FF Colony Box

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for a range of crevice dwelling bats including pipistrelle species, barbastelle, noctule, and brown long-eared bats
- Rough wooden surface for bats to cling onto and climb

Greenwoods Ecohabitats Small Hollow Bat Box

- Manufactured from long-lasting ecostyrocrete
- Lifetime - 20-25 years
- Suitable for a range of bats preferring a cavity space, including pipistrelle species, myotis species, noctule, and brown long-eared bats
- Suitable for hibernating bats

Bark Boxes Large Twin Crevice Bat Box

- Suitable for range of bat species providing roosting opportunities similar to naturally formed tree roosts.
- Thermal mass suitable for spring and autumn roosts.
- Natural and discreet appearance for hanging on trees.
- No maintenance required.
- Made from over 50% recycled materials./

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Bird Boxes

TYPES OF BIRD BOXES

Vivar Pro Seville 32mm WoodStone Nest Box

- Manufactured from woodstone - increases longevity and provides a consistent internal temperature
- The nest box compensates for the lack of natural cavities that are found in trees
- Suitable for blue tits, tree sparrows, house sparrows, great tits, crested tits, nuthatches, coal tits and pied flycatchers
- Should be installed between 1.5m and 3m high

House Martin Nest Cups

Swallow Nest Bowl

- Suitable nest building mud is difficult for house martins and swallows to find
- Alterations to house construction and roof design have resulted in a decrease of suitable nesting sites
- Install swallow nest bowls within an outbuilding or garage that has flight access - 6cm below the ceiling
- Install house martin nest cups under the eaves of a house - minimum of 2m high

Swift Nest Box

- Swift numbers are declining partly due to a loss of nesting sites
- The entrance hole discourages other birds such as starlings and sparrows
- Install a minimum of 5m high with unobstructed airspace in front of the nest
- Integrated models of swift nest boxes are also available

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Bird Boxes

5KL Schwegler Nuthatch Nest Box

- Manufactured from woodcrete
- Nuthatches prefer nest boxes with larger cavities. They will often occupy owl nest boxes and fill the entrance hole with mud reducing the size to approximately 32mm
- Nuthatches plaster mud on the internal walls of the cavity and line the floor with wood chipping and leaves to nest
- To discourage nuthatches from using owl nest boxes try installing the 5KL immediately adjacent

Open-fronted Nest Box

- Manufactured from woodstone - lifetime of 20-25 years
- Suitable for robin, wren, spotted flycatchers, and black redstart
- Best installed hidden from view on the wall of a building or hidden within ivy/honeysuckle as the boxes open-front may attract predators
- Install at a height of 1-3m

Sparrow Terrace Next Box

- Sparrow populations are decreasing due to a lack of nesting sites
- Sparrows are a sociable species and prefer to nest in a colony
- Likelihood of uptake is increased if more nesting chambers are available (the example nest box shown contains three nesting chambers)
- Various other nest box designs are available
- Install at a minimum of 2m high

Tawny Owl Nest Box

- Install on a mature tree within a woodland (not on the outskirts)
- Install a minimum of 3m high
- Face the box entrance away from prevailing wind (generally avoiding west/south-west)

Little Owl Nest Box

- Prefer areas of mixed farmland and orchards
- Essential features; small entrance hole (70mm), narrow tunnel, and a dark nesting chamber
- Install on a horizontal tree branch/wall top or beam so that owlets can walk in/out prior to fledging
- Can be installed on any tree species apart from cherry - the cherry harvest coincides with the little owl breeding season
- Entrance hole should face the tree trunk
- Install at a minimum height of 3m

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