Preliminary Roost Assessment

38 Elgin Road, Poole

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Report	Preliminary Roost Assessment
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Client	Grennall Developments
Date of Issue	April 2024
Status	***Final***

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Executive Summary

Ecosupport Ltd were commissioned to undertake a Preliminary Roost Assessment (PRA) of a residential dwelling at 38 Elgin Road, Poole. This was required in order to identify any potentially important ecological features that may be affected by the proposed development. As part of this assessment, the following surveys were undertaken:

- Preliminary Roost Assessment (April 2024)
- Site-wide Walkover (April 2024)

The following important ecological features were identified on site following the conclusion of the above survey work and may be subject to adverse impacts in the absence of suitable mitigation / compensation:

- (Very) Low potential for roosting bats
- Potential for commuting and foraging Badger

In the absence of any mitigation measures, the proposed development is anticipated to result in ***possible adverse impacts.*** In addition to this, measures are outlined within **Section 6.0** of this document to mitigate where impacts have been identified as well as provide targeted ecological enhancements.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd were commissioned to undertake to a Preliminary Roost Assessment (PRA) of a residential dwelling at 38 Elgin Road, Poole (here after referred to as 'the site'). The purpose of this survey was to assess any ecological impacts that may arise as a result of a proposed residential development. The objectives of the survey were as follows:

- Identify and classify any priority habitats;
- Assess the ecological value of the site;
- Identify any signs of protected species and potential features that may support them
- Make recommendations for further survey work as necessary;
- Make recommendations for any necessary ecological avoidance and mitigation where possible at the initial stage.

NB: If the works do not take place within 18 months of this report[1] then the findings of this survey will no longer be considered valid and may require updating.

1.2 Site Description & Location

The site comprises of residential property at 38 Elgin Road, Poole, Dorset, BH14 8QX (centred on OS grid reference (SZ 04007 90520) (**Fig 1**). The northern aspect of the property is bound by Elgin Road, the eastern and western aspects are bound by residential properties and their associated gardens, and the southern aspect of the site is bound by a pocket of woodland. The immediate surrounding environment is largely residential.

Figure 1. Approximate location of the group of trees (Google Earth, 2024).

[1] https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf

1.3 Proposed Development

The proposal includes extensions, remodelling of the current dwelling and the formation of a new storey (**Fig 2**).

Figure 2. Proposed site plan showing the new extension and remodelled area (EMPERY + CO Ltd, 2024).

Proposed Site Plan
Scale (A1): 1:200

2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

2.1.1 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019)
The Conservation of Habitats and Species Regulations 2017 transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

The Conservation of Habitats and Species Regulations 2019 (EU Exit) makes changes to the three existing instruments which transpose the Habitats and Wild Birds Directives so that they continue to work (are operable) upon the UK's exit from the European Union (EU). These include The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017. This instrument also amends section 27 of the Wildlife and Countryside Act 1981 to ensure existing protections continue. The intention is to ensure habitat and species protection and standards as set out under the Nature Directives are implemented in the same way or an equivalent way when the UK exits the EU.

In order for activities that would be likely to result in a breach of species protection under the regulations to legally take place, a European Protected Species (EPS) licence must first be obtained from Natural England.

2.1.2 The Wildlife and Countryside Act (1981) (as amended)
This is the primary piece of legislation by which biodiversity if protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly, this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

The Wildlife & Countryside Act (1981) states that it is an offence to 'plant or otherwise cause to grow in the wild' any plant listed in Schedule 9 art II of the Act. This list over 30 plants including Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Parrots Feather (*Myriophyllum aquaticum*).

2.1.3 The Countryside and Rights of Way Act (2000)
This Act strengthens the Wildlife & Countryside Act by the addition of "reckless" offences in certain circumstances, such as where there is the likelihood of protected species being present. The Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

2.1.4 Natural Environment and Rural Communities Act (2006)

The Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies have due regard to the conservation of biodiversity. This means that Planning authorities must consider biodiversity when planning or undertaking activities. Section 41 of the Act lists species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the *UK Post – 2010 Biodiversity Framework.*

2.1.5 Protection of Badgers Act

The Protection of Badgers Act (1992) relates to the welfare of Badgers (*Meles meles*) as opposed to nature conservation considerations. The Act prevents:

- The wilful killing, injury, ill treatment or taking of Badgers and / or
- Interference with a Badger sett
- Damaging or destroying all or part of a sett
- Causing a dog to enter a set and
- Disturbing a Badger while it is occupying a sett

Provisions are included within the Act to allow for the lawful licensing of certain activities that would otherwise constitute an offence under the Act.

2.1.6 The Environment Act (2021)

The Environment Act 2021 is the UK's new legislation for environmental protection in the UK, which includes protection of water quality, clean air, and biodiversity among other key protections. This Act provides the government power to set targets to reach long-term aims relating to the environment, which will be periodically reviewed and updated. This legislation also establishes a new environmental watchdog organisation, the Office for Environmental Protection (OEP), which will hold the government accountable on environmental issues.

Part 6 of The Environment Act relates to nature and biodiversity. This section makes provision for biodiversity net gain to be a condition of planning permission in England and a requirement for nationally significant infrastructure projects. Biodiversity net gain will require maintenance for a period of at least 30 years after the completion of enhancement works to be achieved.

The legislation also includes updates to existing environmental legislation, such as the NERC Act 2006, to strengthen biodiversity enhancement rather than just conservation and includes a requirement for local, or relevant, authorities to publish biodiversity reports. Further, The Environment Act places a requirement on responsible authorities to prepare local nature recovery strategies, which will outline nature conservation sites and priorities and opportunities for recovering or enhancing biodiversity within the local area. Within England, the legislation also provides Natural England with the power to publish 'species conservation strategies' and 'protected site strategies' to identify activities that may affect a species or site's status and outline their opinions on measures that would be appropriate to avoid, mitigate or compensate any adverse impacts.

2.2 Policy

2.2.1 National

The National Planning Policy Framework (NPPF) (2023) sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced.

Chapter 15 'Conserving and enhancing the natural environment' states that planning policies and decisions should contribute to and enhance the natural and local environment by protecting and enhancing sites of biodiversity, the wider benefits from natural capital and ecosystem services, minimising impacts on and providing net gains for biodiversity.

The NPPF states that plans should distinguish between the hierarchy of international, national and locally designated sites and that the scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

To protect and enhance biodiversity plans should:

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 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.

The NPPF states 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 SSSI, 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 SSSI;

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;
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.

2.2.2 Local – Poole Local Plan

The site lies within the jurisdiction of the Borough of Poole and as such, the Poole Local Plan (Borough of Poole, 2018) is relevant to this site. Although a new local plan is currently being prepared for Bournemouth Christchurch and Poole Councils to encompass a wider area, it is not yet adopted and the Poole Local Plan is the current plan.

Chapter 9 of the local plan outlines the Council's aims in protecting the natural and built environment of Poole. In particular, Policies PP32 and PP33 are relevant to the protection of biodiversity and important designated sites.

Policy PP32: Poole's nationally, European and internationally important sites

This policy states that "development will only be permitted where it would not lead to an adverse effect upon the integrity, either alone or in-combination, directly or indirectly, on nationally, European and internationally important sites."

The policy goes on to describe the protection of important sites including

- Dorset Heathland (states development will not be permitted within 400m of heathland or for developments within 400m – 5km, mitigation will be required);
- Poole Harbour (states development must meet nutrient neutrality and mitigate any recreational effects)
- Mitigation for provision of Upton Country Park SANGS, SANGS within the concept of Stour Valley Park linked to certain housing sites, and other SANGS and Heathland Infrastructure Projects (HIPs) identified through updates of the Heathlands Planning Framework SPD.

Policy PP33: Biodiversity and geodiversity

Policy PP33 focuses on the protection and enhancement of biodiversity and geodiversity in the borough and states the following:

1. Development and biodiversity

Proposals for development that affects biodiversity, and any sites containing species and habitats of local importance, including Sites of Nature Conservation Interest (SNCI), Local Nature Reserves (LNR), ancient woodland, veteran trees and species and habitats of principal importance must:

a. demonstrate how any features of nature conservation and biodiversity interest are to be protected and managed to prevent any adverse impact;

b. incorporate measures to avoid, reduce or mitigate disturbance of sensitive wildlife habitats throughout the lifetime of the development; and

c. seek opportunities to enhance biodiversity through the restoration, improvement or creation of habitats and/or ecological networks.

Removal or damage of features of nature conservation/biodiversity interest will only be acceptable in exceptional circumstances. Where relevant, new development should seek to incorporate ecologically sensitive design features to secure a net gain in biodiversity as appropriate.

2. Biodiversity appraisal

A biodiversity appraisal should be submitted where there are protected or important species and habitat features either within the site or in close proximity to it. The appraisal will need to demonstrate that the development will not result in any adverse impacts and secures a net gain for biodiversity.

3. Regionally Important Geological Sites

Development that would adversely impact upon Regionally Important Geological Site at Whitecliff will not be permitted.

2.3 Biodiversity Action Plans & UK Post-2010 Biodiversity Framework

The UK Post-2010 Biodiversity Framework (JNCC & DEFRA, 2010) supersedes the UK Biodiversity Action Plan 1992-2012 (UKBAP), setting out goals relating to nature conservation at a UK scale, for example the reduction and reversal in the decline of threatened species and improving the status of biodiversity. The specific habitats and species contained within the UKBAP continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework, and are required to be a material consideration in the planning process under the 2021 NPPF.

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 Waterbodies

Any ponds located within 250m of the proposed development were searched for using Ordnance Survey maps and available aerial images.

3.1.2 Designated Sites

A search for designated sites within 2km of the site was undertaken using freely available online resources.

3.2 Field Survey

The field survey work which forms the basis of the findings of this report was carried out by Darla Brown BSc (Hons) on the 8th April 2024.

3.2.1 Bats (Preliminary Roost Assessment)

A preliminary roost assessment of the building on site was undertaken by Darla Brown of Ecosupport in April 2024 (working under Dean Swensson NE class level 2 bat licence number 2015-13211-CLS-CLS). This followed BCT (Collins (ed) 2023) best practice survey guidelines searching for any PRFs / evidence of bat occupation and assigning a roost potential assessment as outlined in **Table 1** below.

Table 1. Guidelines for assessing the potential suitability of a built structure for roosting bats (reproduced from BCT (Collins (ed) 2023).

Suitability	Description of Roosting Habitats
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions[2] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats[3].
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions[2] and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure 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[2] and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g., maternity or classic cool/stable hibernation site.
2 For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.	

3 Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2016 and Jansen et al., 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

3.2.2 Badger

The site was thoroughly searched for evidence of use by Badgers (*Meles meles*), with the specific aim of identifying the presence and location of any setts. In accordance with the *Badgers and Development: A Guide to Best Practice and Licensing* (Natural England, 2011) guidance, the survey accounted for a 30m from the site's boundary (observed where possible i.e. does not conflict with private dwellings). Evidence of Badgers could include latrines, dung pits, feeding remains and foraging evidence, trails and setts.

3.3 Assessment Methodology

3.3.1 Introduction

The methodology for the assessment of the likely ecological effects of the proposed development is based on CIEEM's *Guidelines for Ecological Assessment in the UK* (CIEEM 2018). Although this assessment does not constitute a formal Ecological/ Environmental Impact Assessment, the CIEEM guidelines provide a useful framework for assessing ecological impacts at any level.

3.3.2 Valuation

Features of ecological interest are valued on a geographic scale. Value is assigned on the basis of legal protection, national and local biodiversity policy and cultural and/or social significance.

3.4 Limitations

There were not considered to be any significant limitations on the results of the PRA with the building and rest of the site fully accessible at the time of the walkover survey.

4.0 ECOLOGICAL BASELINE

4.1 Desk Study

4.1.1 Waterbodies

No waterbodies were identified within 250m of the site.

4.1.2 Designated Sites

Following a search of freely available online resources, 5 designated sites are located within 2km of the site. These are Luscombe Valley LNR (approximately 650m south-east), Luscombe Valley SSSI (approximately 1350m south-east), and Poole Harbour SSSI, SPA, and Ramsar site (all approximately 450m south-west).

Additionally, Dorset Heaths SAC and Dorst Heathlands SPA are both located approximately 4450m north of the site.

No priority habitats were identified on or adjacent to the site.

4.1.3 Local Bat Records

Using freely available online resources, three Granted European Protected Species (EPS) Licences were identified within 1km of the site. The licences grant the destruction of resting places for Common Pipistrelle (*Pipistrellus pipistrellus*) and Serotine (*Eptesicus serotinus*).

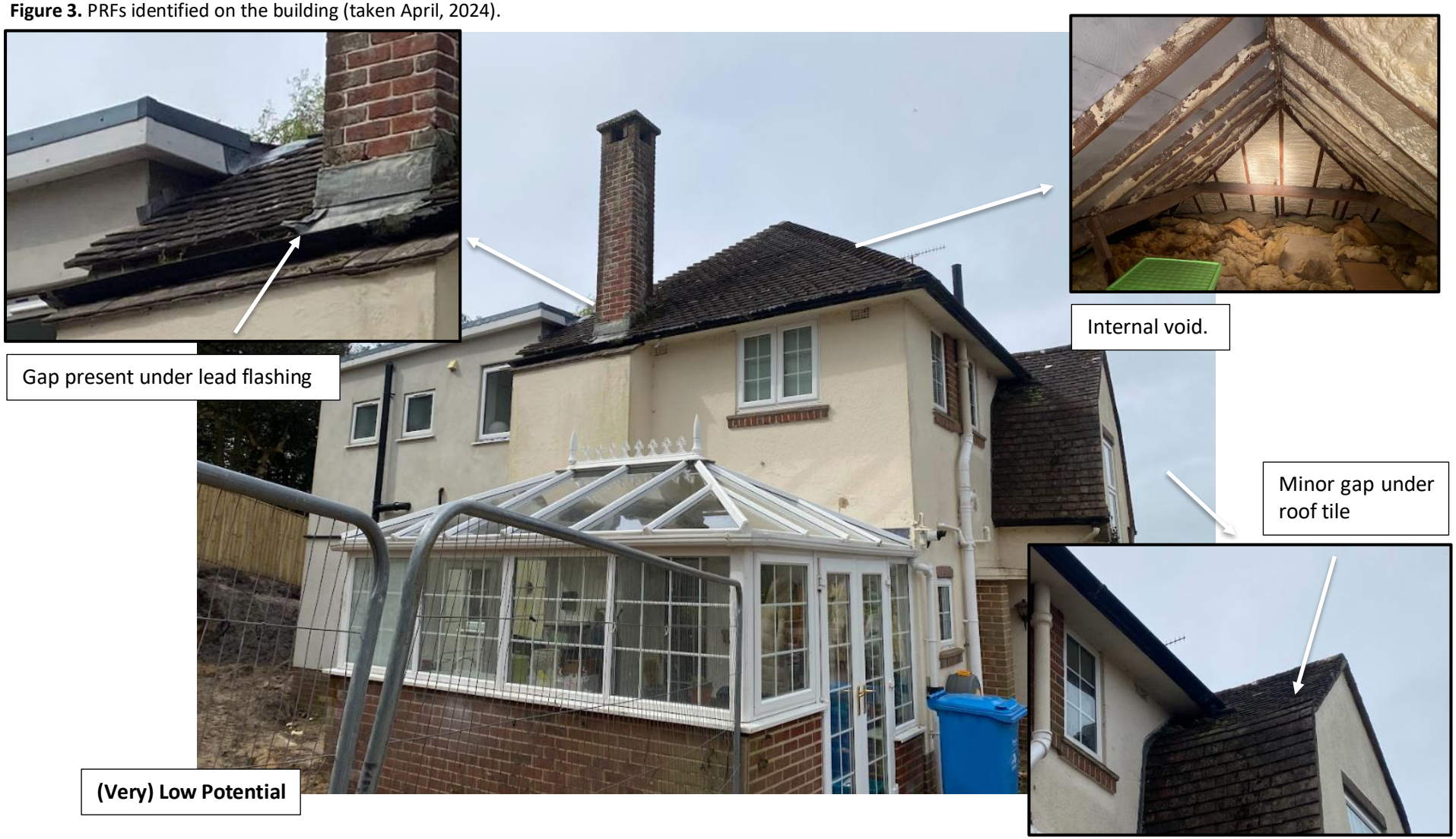
4.2 Bats

4.2.1 Preliminary Roost Assessment

The dwelling, as shown in **Figure 3** below, is a two-storey brick-built dwelling with a pitched tiled roof and chimney at the front, and flat roof at the rear. Additionally, there is a pitched porch at northern elevation. Internally, the roof is lined with BRM and mostly sealed with foam insulation, no gaps were identified. No bats or evidence of bats was found. Externally, the roof and roof tiles were considered to be tightly sealed, with two PRFs identified. These are one gap under the lead flashing on the eastern elevation where the corner of the flashing has lifted, and a minor gap under a roof tile on the porch where the tiles bend, with the gaps considered potentially suitable to support roosting bats. There is no cavity behind the roof tile PRF. As such, considering the largely urban landscape, more suitable dwellings and trees within the local environment, and the limited suitability/ extent of these features, it is considered that any utilization of this feature would likely be limited to sporadic use if utilized at all. The majority of the building is considered to be of negligible potential for roosting bats, however due to the presence of two PRFs, the building was considered to be of ***(very) low potential*** to support roosting bats.

Annotated PRF features are shown below in **Figure 3**.

Figure 3. PRFs identified on the building (taken April, 2024).



4.3 Badger & Hedgehog

During the walkover no evidence of Badgers was noted on site. However, due to the presence of nearby woodland, the site is considered to provide ***potential*** for foraging and commuting Badgers as well as other terrestrial mammals (such as Hedgehogs).

5.0 LIKELY ECOLOGICAL IMPACTS IN ABSENCE OF MITIGATION

5.1 Introduction

The CIEEM guidelines (CIEEM 2018) require that the potential impacts of the proposals should be considered in absence of mitigation. In order for a significant adverse effect to occur, the feature being affected must be at least of local value. However, in some cases, features of less than local value may be protected by legislation and/or policy and these are also considered within the assessment. Although significant effects may be identified at this stage of the assessment, it is often possible to provide appropriate mitigation.

5.2 Site Preparation and Construction

5.2.1 Impacts to Wildlife

5.2.1.1 Bats

The proposed works involve the construction of extensions, remodelling of the current dwelling and the formation of a new storey. Whilst the majority of the building on site was assessed as holding negligible potential to support roosting bats, two small PRFs were noted to have some limited potential to support roosting bats. Notwithstanding this, based on the limited suitability of the features it is considered that any utilisation of this feature would likely be limited to sporadic use by individual bats. Therefore, in the absence of mitigation, should this species be present within the site, it is considered that the works would have a ***potential adverse impact*** at the ***local level*** of significance.

5.2.1.2 Badger & Hedgehog

The walkover of the site identified potential for commuting and foraging Badger & Hedgehog. The proposed works may require the creation of some excavations. This may lead to Badgers and other mammals becoming trapped or injured during the works. Therefore, in the absence of mitigation an ***adverse impact is possible*** at the ***local level.***

5.3 Site Preparation and Construction

5.3.1 Impacts to Wildlife

The development may result in an increase in lighting within the general area from external lights accompanied with the proposed development during the darker winter months. This can affect the behaviour, particularly foraging, of nocturnal wildlife. Therefore, an adverse impact is likely on Badgers, bats and nocturnal birds.

5.3.2 Impacts to Designated Sites

The site falls within the zone of influence for the Dorset Heaths SPA / SAC and Poole Harbour SPA. However, as the proposals are solely for extensions and remodelling of an existing dwelling, there will be no net gain of new residential units, and as such, a ***negligible impact*** to these designated sites of International significance.

6.0 RECOMMENDATIONS

6.1 Introduction

The below sections outline a number of recommendations for mitigation and compensation deemed appropriate and proportionate. In addition to this, measures are outlined to protect the existing features of value and provide enhancements post development.

6.2 Bats

6.2.1 Precautionary Method Statement

Whilst the majority of the dwelling was considered to hold negligible potential to support roosting bats, the porch and lead flashing were considered to hold low potential to support roosting bats. Given the limitations associated with these features and the urban setting of the site however, it is considered that emergence surveys would not be proportionate or practical given both the limited extent of the features. As such, in order to provide an appropriate level of mitigation, the following precautionary working method statement (PWMS) will be implemented to enable to supervised works to the features.

- Prior to any internal or external construction starting onsite, all construction personnel will receive a toolbox talk from a licensed ecologist (or someone acting as an accredited agent) regarding bats and their awarded level of protection (along with an indication of the PRFs identified on the property). This will outline safe working practices to minimise the chances of bats being present during the works and how to proceed if a bat is discovered during the course of the work.

- Once the toolbox talk is complete, the licensed ecologist will undertake an updated internal and external inspection of the property/ feature (the use of a hand held endoscope may also be required) to confirm the building is in a similar state of repair and the continued absence of any direct evidence of bat occupation.

- Works will be undertaken slowly, by hand and with care. This will include taking such precautions as removing the roof tiles and lead flashing carefully and checking for the presence of bats before being discarded. The licensed ecologist will oversee all critical works taking place to the identified features.

- ***In the unlikely event that any bats are found at any point any during the development, all works must cease immediately and a European Protected Species Licence would likely be required from Natural England in order to allow works to proceed further.*** Contractors are forbidden to handle bats discovered during the development process (should any bats be found whilst a licensed ecologist is not on-site, they will be contacted immediately).

- A copy of this PMS will be kept on-site throughout the duration of the works.

6.2.2 Foraging and Commuting Nocturnal Species - Sensitive Lighting

6.2.2.1 During Construction

In order to avoid any disturbance to bats (and other potential nocturnal wildlife) construction works should be limited to daylight hours and should not be undertaken 30 minutes prior to dusk through to dawn. All lighting should be sensitive to the use of the site by nocturnal wildlife, for example by including low-level downward-facing / hooded lights that are sensor-operated where possible.

6.2.2.2 During Operation

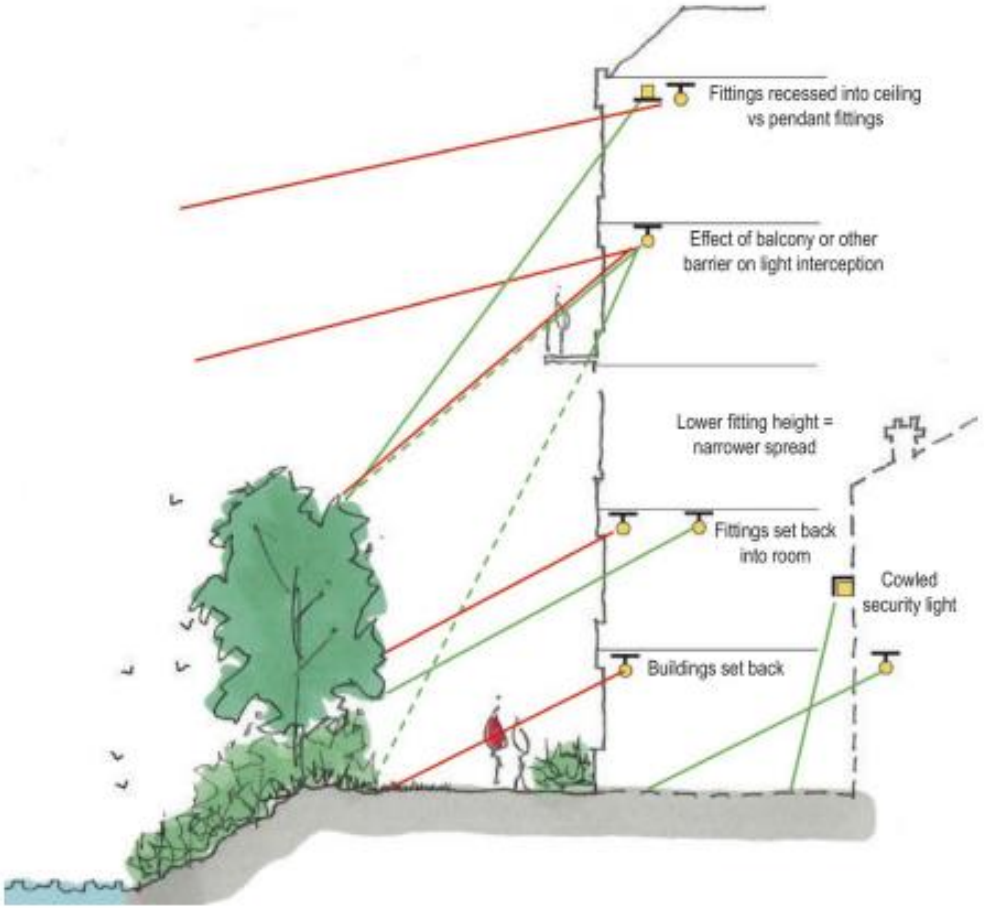
It is uncertain on whether any external lighting will be used within the proposed development. However, it is likely it will be required during the darker months. It is recommended that any lighting complies with the following the published *Guidance Note 08/23 Bats and Artificial Lighting at night* (ILP / BCT, 2023) produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. The key recommendations within this document have been outlined below and will be implemented as far as is practicable:

'Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features:

- *All luminaires will lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used*
- *LED luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability*
- *A warm white light source (2700Kelvin or lower) will be adopted to reduce blue light component*
- *Light sources will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)*
- *Internal luminaires can be recessed (as opposed to using a pendant fitting - See **Fig 4**) where installed in proximity to windows to reduce glare and light spill*
- *Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges (see Case Study 1)*
- *Column heights will be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards*
- *Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01*
- *Luminaires will always be mounted horizontally, with no light output above 90° and/or no upward tilt*
- *Where appropriate, external security lighting will be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate*

- *Use of a Central Management System (CMS) with additional web-enabled devices to light on demand Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS*
- *The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues. See Case Study 6*
- *Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely'*

Figure 4. Internal lighting mitigation options (ILP 2023).



6.3 Badger

During the construction phase, any open excavations left overnight will either be covered to prevent commuting Badgers, and other terrestrial mammals such as Hedgehogs, falling in or

escape ladders will be used to prevent them from becoming trapped. Any open pipework will be checked and then capped nightly.

6.4 Ecological Enhancements

6.4.1 Bats

The new extension will have 1 No Ibstock bat brick (**Fig 5**) integrated within the external brick work. These features are entirely self-contained and available in a variety of different colours to match different construction materials. They should ideally be placed on an elevation which will benefit from some degree of sunlight exposure and be located away from windows.

Figure 5. Ibstock bat brick 'B' which will be integrated into the new extension.

If this is not feasible, the following woodstone model will be erected onto a suitable mature tree within the site boundary:

- 1 No Vivara Pro Large Multi Chamber WoodStone bat box

The woodstone bat box will be erected by or under the supervision of an ecologists to ensure it is placed in the most appropriate / effective location.

6.4.2 Birds

To act as biodiversity enhancement, the new extension will incorporate 1 No Swift brick. The 'CJ Wildlife Swift maxi nesting box' (**Fig 6**) with entrance via a CJ Wildlife 'Cambridge Swift full-face brick'. The Cambridge System is a concept comprising an entrance piece and a nest box embedded in the cavity and inner leaf. It is particularly suited to gable ends at roof-space level. If this model is not suitable for the building specifications, an alternative Swift box with internal floor space exceeding 400cm squared must be used.

Figure 6. A schematic of how the Cambridge full face Swift brick leads into a cavity created by the prior installation of the Swift maxi nesting box.

If this is not feasible, 1 No nest box will be erected onto a suitable mature tree within the site boundary. Vivara Pro Seville 32mm, Seville 28mm or Barcelona Bird Box should be used. This will provide suitable nesting opportunities for a variety of bird species and will increase the nesting opportunities for birds on site.

6.4.3 Hedgehogs

To ensure permeability for small mammals across the site, any new garden fences installed around the site will ensure at least 2 gaps are present within the gravel boards / bases of each fence line to allow for movement of Hedgehogs between gardens and into the wider area. The gaps should be at least 15 cm high by 15 cm wide with permeability for small mammals.

Small signage could be installed at these points to ensure they remain open upon completion of the development. The People's Trust for Endangered Species provide such signage, the purchase of which also supports conservation efforts (**Fig 7**).

Figure 7. Example of Hedgehog Highway signage to be placed above fence gaps provided to allow movements between gardens.

7.0 CONCLUSION

A Preliminary Roost Assessment was undertaken on the dwelling at 38 Elgin Road, Poole, in relation to the proposed extensions, remodelling of the current dwelling and the formation of a new storey. Whilst the site was noted to be of limited value for wildlife, the site was identified to have some potential to support roosting bats and commuting / foraging Badger and Hedgehog. Precautionary measures recommended to mitigate any impacts to these species have been outlined within this document, with a number of ecological features for bats, birds, and Hedgehogs recommended to enhance the site's value for wildlife and increase biodiversity in the local area.

8.0 REFERENCES

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK & Ireland

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