

A collage of images arranged in a diamond pattern, showing a pond, a newt, a bat, a house under construction, a wood chipper, a mouse, and a badger.

Amokura House

Phase II Bat Surveys & Mitigation
Strategy

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Client:
Jenkins Architecture

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Report	Phase II Bat Surveys & Mitigation Strategy
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Executive Summary

Ecosupport Ltd were commissioned to undertake a Preliminary Ecological Appraisal (PEA) of Amokura House in order to identify any potentially important ecological features that may be affected by the proposed development. The survey concluded that the main dwelling had ***moderate potential*** to support roosting bats and as a result Phase II bat surveys were required.

Ecosupport Ltd undertook two Phase II bat surveys in July and August 2023. During the surveys, Common Pipistrelle, Soprano Pipistrelle and Noctule bats were recorded foraging and commuting across the site however there were **no emergences/re-entries** and the main dwelling is not considered to be used by roosting bats. The results of the surveys and required mitigation and enhancement measures are outlined within this report.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was instructed to carry out a Phase II Bat survey at Amokura House, Bridge Road, Bursledon, SO31 8AL (here after referred to as 'the site') in July and August 2023. This survey was required to support a planning application for a development on site after a Preliminary Roost Assessment (PRA) conducted identified the main dwelling as being of ***moderate potential*** for roosting bats, therefore highlighting the requirement to undertake one dusk emergence and one dawn re-entry survey (Ecosupport, 2023).

1.2 Aim

The aim of the survey was to confirm the presence / likely absence of roosting bats within the house on site.

NB. If the development does not take place within 18 months¹ of this report then the findings may need to be updated.

1.3 Site Description & Location

The site is comprised of a residential dwelling, garage, outbuildings and associated land located at Amokura House, Bridge Road, Bursledon, SO31 8AL (centred on OS grid reference SU 48987 10098) (**Fig 1**). The site is bound by residential properties on all elevations and is in close proximity to the river Hamble which is located 0.4km east. The wider environ is largely urban located within the village of Bursledon. The site is located within the North Wessex Downs AONB.

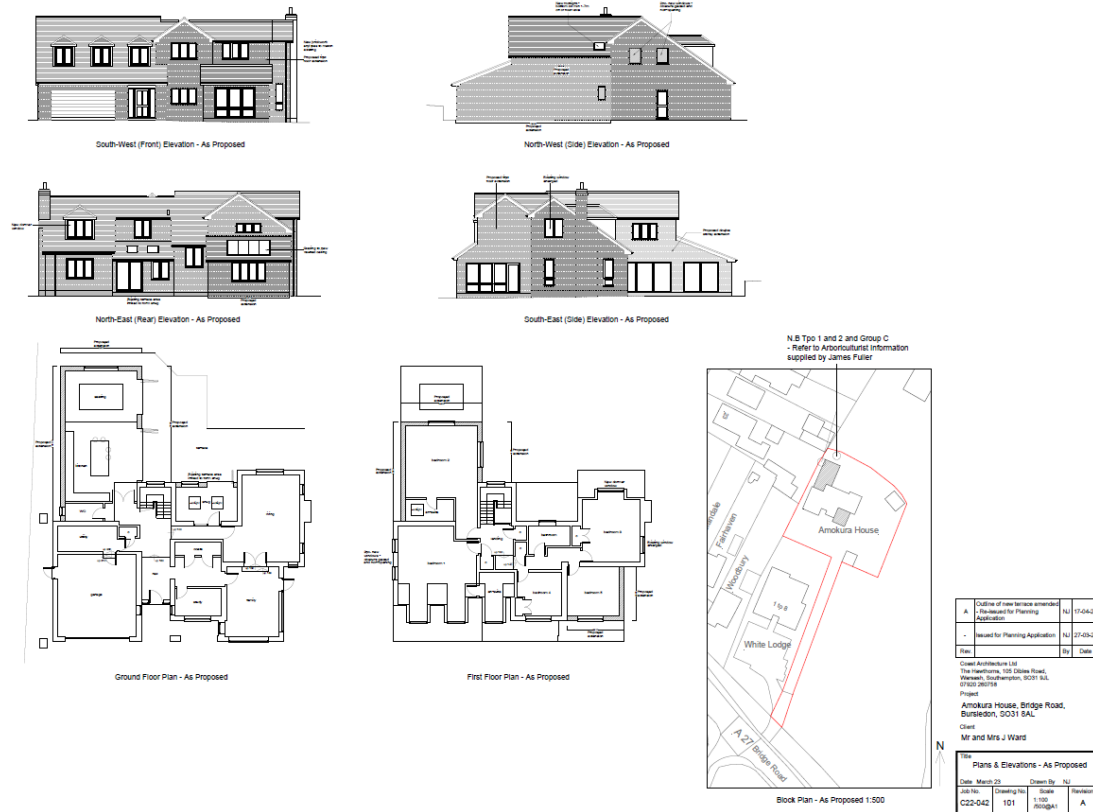
¹ <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

Figure 1. Approximate site boundary (redline) (Google Earth, 2023).



1.4 Proposed Development

It is understood that the proposals involve the construction of extensions onto the northern and southern elevations of the main dwelling (**Fig 2**).

Figure 2. Proposed site plan (Coast Architecture 2023)

2.0 RELEVANT LEGISLATION & POLICY

2.1 Legislation & Policy Context

2.1.1 Relevant Legislation

The Wildlife & Countryside Act 1981 (as amended) is the primary piece of legislation by which biodiversity in the UK is protected. The most relevant areas of the Act to development related activities are:

- The protection of certain species listed in Schedule 5, which prohibits killing, injury, disturbance, damage and / or destruction of breeding sites and / or resting places and sale (it should be noted that all parts of this protection do not apply to all Scheduled species).

The Conservation of Habitats and Species Regulations (2017) (as amended) 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 Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies to have 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*.

2.1.2 National Planning Policy

Section 15 of the National Planning Policy Framework (NPPF) 'Conserving and enhancing the natural environment' states that planning policies and decisions should contribute to and enhance the natural environment. They should do this by protecting and enhancing sites of biodiversity and minimizing impacts on and providing net gains for biodiversity, including establishing coherent ecological networks.

The plan states to protect and enhance biodiversity plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks. This includes the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them. Plans should identify the protection and recovery of priority species and opportunities for securing measurable net gains for biodiversity.

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

- if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact;
- 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
- 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.

2.1.3. Local – Eastleigh Borough Council

The Eastleigh Borough Local Plan 2016 – 2036 has a number of policies relating to ecology with the relevant ones listed below;

‘General Approach

1. The Council will work with statutory and voluntary agencies and developers, and will determine planning applications, to:

a. protect, conserve and enhance all:

i. international, national and local nature conservation designations;

and

ii. networks of natural habitats and features, including the Local Ecological Network, Priority Biodiversity Areas and Priority Biodiversity Links, watercourses, wetland complexes, woodland trees, and trees and hedgerows important to biodiversity and local character; and facilitate their adaptation to climate change wherever possible;

b. assist in achieving national, county and local biodiversity targets as set out in Biodiversity Action Plans (BAPs);

c. seek a net gain of biodiversity on all development sites (including sites for redevelopment) through the protection, enhancement and connection of existing and provision of new habitats and features of nature conservation interest compatible with the native biodiversity characteristics of the Borough, having regard to local geodiversity and soils; and

d. contribute to major elements of the PfSH Green Infrastructure Strategy and other strategies for the provision and enhancement of multifunctional green infrastructure including green routes, ecological networks and biodiversity enhancements (see strategic policy S9).

International Designations

2. Development which is likely (either individually or in combination with other developments) to adversely affect the integrity of an international or European nature conservation site will not be permitted subject only to imperative reasons of overriding public interest and securing any necessary compensatory measures in the absence of alternative solutions. A 'project level' Habitat Regulations Assessment will be required where there are likely significant effects or uncertainty. Any mitigation measures required to ensure no adverse impact must be implemented at the appropriate time.

3. The Council will work with PfSH, Natural England, the Environment Agency and other wildlife organisations to develop and implement with developers a strategic approach to the protection and enhancement of international and European sites from the direct and indirect effects of development. Within Eastleigh Borough this will include:

a. implementing:

i. the Solent Recreation Mitigation Strategy (requiring contributions from residential developments within 5.6 kilometres of the Solent Special Protection Area to the Strategy); and

ii. the interim and any future New Forest Recreation Mitigation Strategy if required; or alternative agreed site specific measures to address recreational disturbance;

b. preserving the water quality and flows within the Itchen and Hamble, Southampton Water and Solent;

c. protecting the River Itchen SAC, in particular the maintenance and where appropriate restoration of habitats and qualifying species to favourable conservation status (as defined by article 1 of the Habitats Directive); and

d. seek contributions towards measures set out in the Southern Damselfly Conservation Strategy (or other strategy) specifically to deliver biodiversity net gain.

National and Local Designations

4. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on a Site of Special Scientific Interest (SSSI), Site of Importance for Nature Conservation (SINC) or Local Nature Reserve (LNR) as shown on the policies map (or on a more recent plan provided by the Hampshire Biodiversity Information Centre) unless it can be demonstrated that:

a. there are no alternative solutions;

- b. the adverse effects are unavoidable;*
- c. measures are taken to mitigate or, as a last resort, compensate for the adverse effects;*
- d. there is an overall biodiversity net gain; and*
- e. if there are any residual adverse effects which cannot be avoided, mitigated or compensated, the benefits of the development must clearly outweigh the adverse effects on the nature conservation value of the site and any broader impacts on national and local designations.*

Priority habitats, protected and priority species and the local ecological network

5. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on priority

habitats, protected or priority species, or on the local ecological network unless it can be demonstrated that:

- a. there are no alternative solutions;*
- b. the adverse effects are unavoidable;*
- c. measures are taken to mitigate or, as a last resort, compensate for the adverse effects;*
- d. there is an overall biodiversity net gain; and*
- e. if there are any residual adverse effects, the benefits of the development clearly outweigh the adverse effects on priority habitats, priority and protected species, and the local ecological network.*

Irreplaceable habitats

6. Development will not be permitted if it results in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees), unless there are wholly exceptional reasons and a suitable compensation strategy exists.

Buffers

7. Buffers free from development will be provided to designated sites to avoid/mitigate impacts, including recreational impact and impacts on edge habitats, and to maintain dark skies.

Surveys

8. Development will not be permitted unless it can be demonstrated that:

- a. there have been thorough habitat and species surveys;*
- b. the great crested newt strategic survey and strategy have been considered in all developments within 500m of a great crested newt pond; and*
- c. the strategic bat trapping survey has been considered in all developments within the locality of a woodland or connected habitat networks.'*

3.0 METHODS

3.1 Bat Emergence Survey

The bat surveys at Amokura House were led by Madison Errington and Rebecca Kent with assistance from Ollie Skipwith, Ray Koputso, James Miller-Lott, Harry Horn and Sam Cook, all experienced ecologists and bat surveyors with Ecosupport (with the approximate locations of the surveyors indicated in **Fig 3**). Both heterodyne (Bat Box Duet, Peterson D230 and Elkon Batscanner) and time expansion (Elekon Batlogger) detectors were used for identifying species calls / analysis of calls via sonogram (where required). The dusk emergence survey began approximately 15 minutes prior to sunset and continued until approximately 1 hour and 30 minutes after sunset. The dawn re-entry survey began approximately 1 hour and 30 minutes prior to sunrise and continued until approximately 15 minutes after sunrise. Survey sheets were used to record the following information:

- Time of call registration
- Species (if possible, to identify using heterodyne detector)
- Location / activity
- Direction of flight (if seen)

Figure 3. Approximate locations of the surveyors covering the house during the dusk emergence/ dawn re-entry surveys (yellow circles) (Google Earth, 2023).



3.2 Limitations

There were not considered to be any significant limitations to the survey, with it undertaken during the accepted survey season (Collins (ed) 2016), during suitable weather conditions and with all areas of the buildings covered.

4.0 RESULTS

4.1 Bat Emergence Survey

The results of the bat emergence survey along with other relevant information of survey conditions are provided in **Tables 1** and **2** below.

Table 1. Relevant information on survey conditions recorded.

Date	Temp (°C)	Cloud Cover (%)	Wind (Beaufort scale)	Sunset / Sunrise Time	Start Time	Finish Time
24/07/2023	16	100	0	21:03	20:48	22:33
10/08/2023	15	100	1	04:14	05:44	05:59

Table 2. Results from the emergence / re-entry surveys at Amokura House. HNS = Heard Not Seen.

Survey Date	Recorded Bat Roost(s)	Bat Activity on Site		
24/07/2023 (dusk)	No emergences	Species	First Pass	Last Pass
		Common Pipistrelle	21:11	21:57
		Noctule	21:18 (HNS)	21:18 (HNS)
		Soprano Pipistrelle	21:27	22:24 (HNS)
		<u>Summary:</u>		
		Activity during this survey was considered to be low with a total of 9 bat passes recorded. Species diversity was also low with a total of 3 species recorded throughout the survey. The first registration was from a Common Pipistrelle (<i>Pipistrellus pipistrellus</i>), which was recorded at 21:11 as commuting across the site from the northeast towards the west. 4 Common Pipistrelles were then recorded as briefly foraging and commuting to the west, with the final recording of Common Pipistrelle at 21:56. The second registration was from a Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>) which was recorded at 21:27 as commuting across the site from east towards the west. A further 2 Soprano Pipistrelles were later recorded as commuting across the site, with a final recording of Soprano Pipistrelle at 22:24 as HNS. The third, and final, registration was from a Noctule (<i>Nyctalus noctula</i>), which was recorded at 21:18 as HNS.		

		Species	First Pass	Last Pass
		Soprano Pipistrelle	04:21	05:26
		Common Pipistrelle	04:42	05:13 (HNS)
		<u>Summary:</u> Activity during this survey was considered to be low with a total of 7 bat passes recorded. Species diversity was also low with a total of 2 species recorded throughout the survey. The first registration was from a Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>) which was recorded at 04:21 as foraging across the site from around the northeast. A further 1 Soprano Pipistrelle was later recorded as commuting across the site towards the east, at 05:26. The second, and final, registration was from a Common Pipistrelle (<i>Pipistrellus pipistrellus</i>), which was recorded at 04:42 as foraging across the site from the west towards the east. 4 Common Pipistrelles were then recorded as briefly foraging and commuting, with the final recording of Common Pipistrelle at 05:13 as HNS.		

5.0 EVALUATION, IMPACTS & RECOMMENDATIONS

5.1 Summary & Evaluation of Results

5.1.1 Foraging and Commuting

Overall, the levels of foraging and commuting bats recorded on site during the surveys was low and comprised primarily of common species (Common Pipistrelle and Soprano Pipistrelle) with a single pass of 'rarer' species (Noctule). Given the size and nature of the development, it is considered there will only be **minor adverse impact** at the **Local Scale** for foraging and commuting bats should any new lighting be introduced to the site.

5.1.2 Roosting

Based on the results of the PEA and follow up Phase II surveys, the main dwelling on site is not considered to be used by roosting bats and no further survey work with regard to roosting bats within buildings is considered necessary.

5.1.3 Mitigation / Enhancements

No bats were recorded within the main dwelling and therefore no specific mitigation will be required. Below are some general mitigation and enhancements for bats, some of which were previously described within the PEA report (Ecosupport, 2023).

5.1.3.1 Minimisation of Disturbance to Nocturnal Wildlife

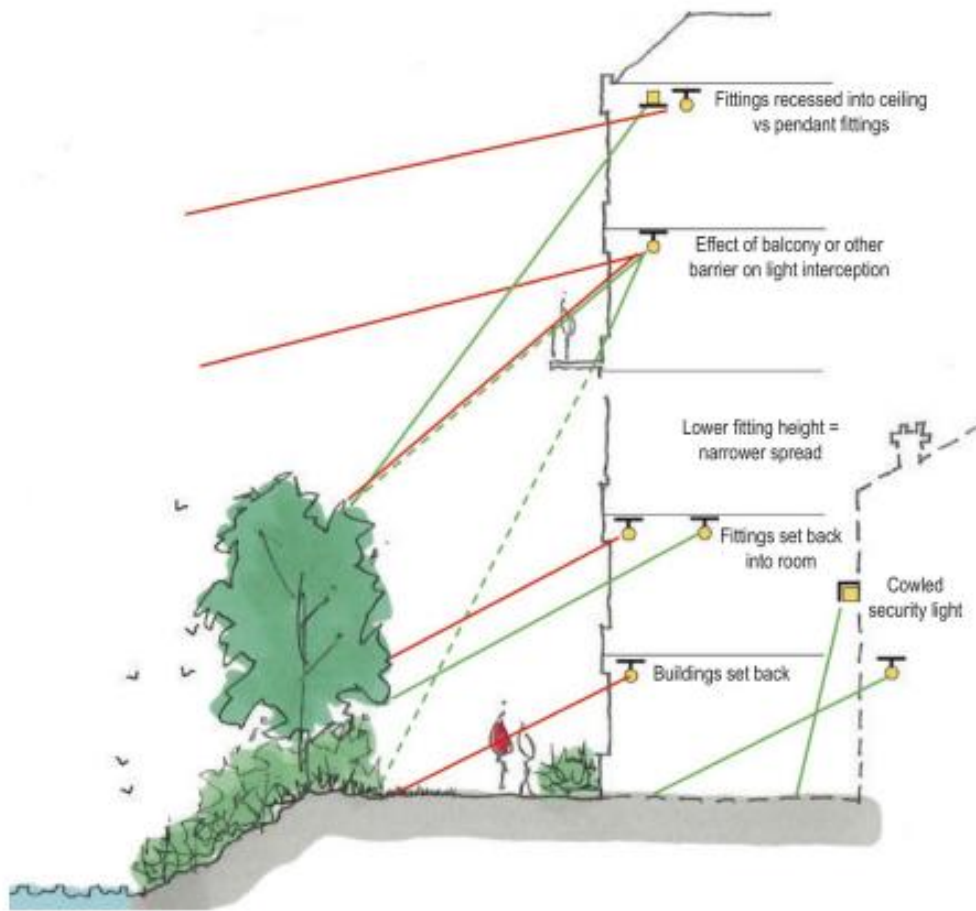
It is recommended that any lighting complies with the following the newly published *Guidance Note 08/23 Bats and Artificial Lighting at night* (ILP / BCT, 2023) produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the 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).



5.1.3.2 Bat Brick

The proposals will include one bat brick within the new extension. The bat brick used should be the Istock bat brick B, or similar, as they are available in a variety of different brick colours and requires no maintenance (**Fig 5**). This will also be positioned as close to the eaves as possible, away from windows and in a position that will receive some direct sunlight.

Figure 5. The Istock bat brick 'B' that will be incorporated into the new extension.



6.0 REFERENCES

Collins (ed) (2016) Bat Surveys for Professional Ecologists: Best Practice Guidelines. Bat Conservation Trust

Ecosupport (2023) Amokura House – Preliminary Ecological Appraisal

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Mitchell Jones, A.J., (2004) Bat Mitigation Guidelines, English Nature

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