



Elite Ecology

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**Oakfields,
Isycoed**



Conservation Plan

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1. Introduction

1.1 Report rationale

This report has been prepared at the request of Ms. Clare Callander (proprietor). It relates to the conservation of bats and birds at the proposed re-development site located at Oakfields, Isycoed, Clwyd, LL13 9RY (Central OS Grid Reference: SJ 40089 50110).

1.2 Site description

The site itself is situated within a semi-rural setting within the local government community of Isycoed, Clwyd. Hard standing ground, amenity grassland and hedgerows are situated in the immediate vicinity of the building, as well as a small number of other buildings (residential dwellings and their associated gardens) and arable and pastureland. This report relates to three buildings on a site which measures approximately 190m². Therefore, the site is considered to contain potential to support the local bat and bird populations by offering roosting/nesting, commuting and foraging opportunities.

The wider landscape is comprised of arable land, scattered trees, and hedgerows. There is a large waterbody located 600m to the west of the site, and the site offers good connectivity to the wider landscape. Therefore, the habitats that are present in and around the site contains all the elements that are considered to be critical in both bat and bird life cycles.

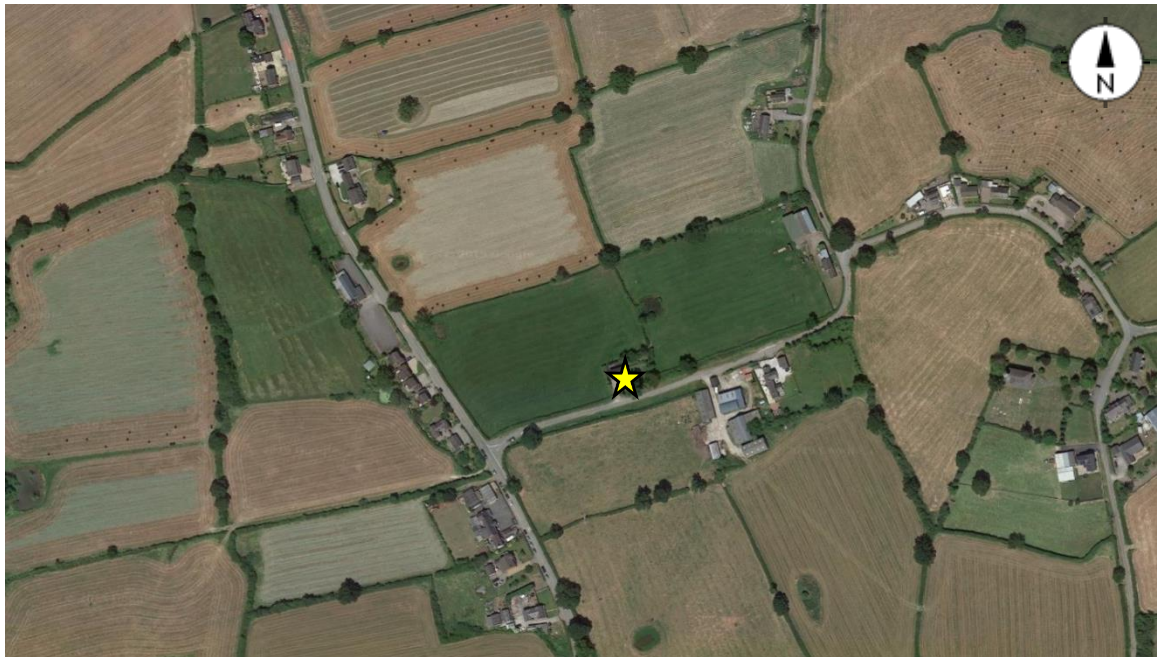
1.3 Proposed works

The surveyed residential dwelling B1 is proposed to be extended.

Figure 1: An aerial photograph of the surveyed site at Oakfields, Isycoed (as shown by the red outline). The arbitrary building numbers referred to throughout this report are also illustrated.



Figure 2: An aerial photograph of the surveyed site (yellow star) and some of the nearby habitats to Oakfields, Isycoed.



2 Recommendations

2.1 Bats:

Current access points are to be retained, with the exception of two access point on the east elevation that will be lost during the works. This is to ensure the continued use by crevice dwelling bat species presently using the site. Figure 3 shows the locations of emergence points identified during the survey to be retained.

Figure 3: An aerial photograph of the site at Oakfields, Isycoed (as shown by the red outline) bat emergence points to be retained are shown by the blue stars.



To compensate for the loss of the two access points on the east elevation, Two [Bat Access Tiles](#) and Two purposely lifted ridge tiles are to be incorporated within the new section of the dwelling, the location of which are shown in Figure 4.

Within the new roof section, it is necessary that **modern breathable felt is avoided** due to the danger of entanglement it poses to bats. Type 1F Bitumen felt is to be used as an underlay.

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Figure 4: Annotated site plans for the location of the access points. The Bat Access Tiles are shown by the red markings, with the blue markings showing the location of the purposefully lifted ridge tiles. **Please note** – the annotations on this image are not to scale.



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The site will need to incorporate Three [Integrated Eco Bat Box](#), One with a crevice roosting chamber and two with a cavity roosting chamber, the location of which are shown in figure 5 below. Including these boxes will providing further roosting opportunities. These should avoid any artificial lighting, whilst being sighted facing east, south-east, south-west and/or west.

Figure 5: Annotated site plans for the location of integrated bat boxes (red shapes). **Please note** – the annotations on this image are not to scale.



Artificial lighting **must avoid** all roosting features. Lights must include sensors to be triggered by larger bodies only. The following lights are recommended for external usage:

[Philips Yarrow LED outdoor wall light with sensor](#) are proposed to be used for the rear of the property. These lights should be fixed at a height of 2.3m from the floor. These lights are sensed with a low lighting angle to avoid light spilling upwards amongst features that have the potential to be used by bats. These lights are expected illuminate the imitate vicinity with an expected light spill of up to 7m with a beam angle of 120° at a height of 2.3m.

Light Model	<u>Philips Yarrow LED outdoor wall light with sensor</u>	
Type	LED	
Lumens (lm)	600	
Beam Angle	120°	
Candela (cd)	190	
Colour	Warm White	
Colour (k)	2700	
Colour rendering	Not stated	
No. for this project	Unknown at this point	

[Sensor LED outdoor wall lamp Jule](#) are proposed to be used for the front of the property. These lights should be fixed of 2.3m from the floor. These lights are sensed with a downward lighting angle to avoid light spilling upwards amongst features that have the potential to be used by bats. These lights are expected illuminate the imitate vicinity due to light being directed to the floor.

Light Model	<u>Sensor LED outdoor wall lamp Jule</u>	
Type	LED	
Lumens (lm)	580	
Beam Angle	Not Stated (downward facing)	
Candela (cd)	Not Stated	
Colour	Warm White	
Colour (k)	3000	
Colour rendering	Not Stated	
No. for this project	Unknown at this point	

The location of lights can be found in figure 6.

Figure 6: Annotated site plans for the location the Philips Yarrow LED outdoor wall lights (red shapes) and outdoor wall lamp Jules (blue shapes). **Please note – the annotations on this image are not to scale.**



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The site can be enhanced by introducing a bat friendly planting scheme in the soft landscaping plan. The table below outlines species recommended by the Bat Conservation Trust, all of which could be incorporated into the site post development.

Flowers for borders		Trees, shrubs & climbers	Herbs
Aubretia	Ox-eye daisy	Bramble	Angelica
Candytuft	Phacelia	Buddleia	Bergamot
Cherry pie	Poached egg plant	Common alder	Borage
Corncockle	Primrose	Dogrose	Coriander
Corn marigold	Red campion	Elder	English marigolds
Corn poppy	Red valerian	English oak	Fennel
Echniacea	Scabious	Gorse	Feverfew
English bluebell	St. John's Wort	Guelder rose	Hyssop
Evening primrose	Sweet William	Hawthorn	Lavenders
Field poppies	Tobacco plant	Hazel	Lemon balm
Honesty	Verbena	Honeysuckle (native)	Marjoram
Ice plant 'pink lady'	Wallflowers	Hornbeam	Rosemary
Knapweed	Wood forget-me-not	Ivy	Sweet Cicely
Mallow	Yarrow	Jasmine	Thyme
Mexican aster		Pussy willow	
Michaelmas daisy		Rowan	
Night-scented stock		Silver birch	

2.2 Birds:

To compensate for the loss of the bird nests, two [Large Bird Nest Boxes](#) are to be installed on the site post-development. For the swallow (*Hirundo rustica*) nests, the development will incorporate [eaves/ridge](#) overhangs. This will give these specimens the necessary internal opportunities to continue to nest at the site. These features should be located in the southern section of the re-developed site. These should be enhanced with the inclusion of two [No.10 Schwegler Swallow Nest](#) boxes per feature.

The development site is to be enhanced for birds by installing a variety of [bird boxes](#) on site. Bird boxes must be placed at a suitable height facing between north and east. The following boxes are to be incorporated:

- 1x [Apex Robin Box](#)
- 1x [Sparrow Terrace](#)

The locations of bird nesting features can be found within figure 7.

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Figure 7: Annotated site plans for the location the bird nesting features. Bird boxes are shown by the red shapes and eaves/ridge overhangs are shown by the green shapes. **Please note** – the annotations on this image are not to scale.



3. References

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4. Appendices

Appendix A: Site Plans

Appendix B: Artificial Light and Bats

Appendix C: The Annual Bat Year (BCT)

Appendix D: Legislation

Appendix A: Site Plans



Appendix B: Artificial Lighting and Bats

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotis bats (*Myotis* spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

➤ **To introduce lighting curfews or use of PIR sensors.**

Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

➤ **To consider no lighting solutions where possible.**

Options such as white lining, good signage and LED cat's eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

➤ **To use only high pressure sodium or warm white LED lamps where possible.**

High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

➤ **To minimise the spread of light.**

The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

➤ **To consider the height of the lighting column.**

While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

➤ **To avoid reflective surfaces below lights.**

The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

Appendix C: The Annual Bat Year (BCT)

A Year in the Life of a Bat			
January		February	
	Hibernating; using up fat reserves.		Still hibernating; few fat reserves left.
March		April	
	Some activity; occasional bat seen feeding.		Awake and feeding at night.
May		June	
	Females looking for nursery sites.		Young born, usually only one.
July		August	
	Young still suckling.		Young start catching insects; females leave nursery to find males.
September		October	
	Mating season begins; start building fat reserves for hibernation.		Search for suitable hibernation site.
November		December	
	Hibernation begins although still some activity in warm weather.		Hibernating.

Appendix D: Legislation and Policy

All species of bat are fully protected under a variety of domestic, European and international legislation and conventions. These include:

- Bern Convention (Appendix II)
- Bonn Convention (Appendix II)
- Conservation Regulations (Northern Ireland) 1995
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
- Countryside Rights of Way Act 2000
- Eurobats Agreement
- Habitats Directive (Annexes IV and II)
- Habitats Regulations 1994 (as amended) Scotland
- NERC Act 2006
- Wildlife and Countryside Act 1981 (as amended)
- Wild Mammals Protection Act

In addition to this, some species have additional protection by being listed on the UK Biodiversity Action Plan (UKBAP).

The legislation afforded to bats makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which protects birds, nests, eggs and nestlings from harm. In addition to this, some rarer species, such as barn owls are afforded extra protection.

National Planning Policy Framework, Section 15:

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives. The latest National Planning Policy Framework was updated in February 2019, with the section in relation to conserving the natural environment being located within section 15.

Section 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

Biodiversity 2020:

This sets out to halt overall biodiversity loss and support healthy well-functioning ecosystems by establishing coherent ecological networks, with more and better places for nature, to the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

5. Notice to Readers: Conditions of this Report

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Elite Ecology agrees to supply ecological consulting services and advice of a preliminary or thorough nature as advised or commissioned. Upon commissioning Elite Ecology to undertake the work, the client(s) grant access to the site upon the agreed date. If no site access is available upon this date, Elite Ecology holds the right to charge the client(s) for lost staffing time and additional travel costs.

Elite Ecology undertake all site surveys with reasonable skill, care and diligence, within the terms of the contract that has been agreed with the client and abiding by the Elite Ecology Terms and Conditions. The actions of the surveyors on site, and during the production of the report, were undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management.

The latest good practice guidelines put in place by Natural England or the relevant statutory conservation bodies have been followed by the surveyors on site. If those methodologies fail to identify a protected species during the survey efforts, no responsibility can be attributed to Elite Ecology. If any of these guidelines are adapted between the date(s) of the surveys being undertaken and the submission of this report, then Elite Ecology takes no responsibility for this.

Should any equipment be damaged or lost on site at the fault of the client(s), then Elite Ecology withholds the right to charge 100% above the current market value for that exact product or the nearest similar product.

The survey results purport the current status of the site and its potential for protected species utilisation at the time of surveying. It should not be viewed as a complete list of the possible flora and fauna species that could be using the site at different times of the year.

Elite Ecology has been provided with full payment for this report and thus the product has been released to the client(s) for the purpose of their planning application. If any part of the report is lost or altered without the written permission of Elite Ecology, then the entire report becomes invalid. Due to the potential for continual change within the natural world, this report is valid for **2 years only** from the date of the last survey visit. If this report is submitted after the 2 year deadline, then a further updated inspection will be required to ascertain whether the site remains in the same condition as it was when initially inspected.

No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.