

Bat Sensitive Artificial Lighting

Land South West Of Sutton Lane, Market Bosworth, Leicestershire



INTRODUCTION

Background

Studio Bark has been commissioned by our client, Adam Tarver to produce a Bat Sensitive Lighting Scheme for the approved development at land south west of Sutton Lane, Market Bosworth, hereafter referred to as the site.

The site has been subject to previous ecological assessment by Elton Ecology Ltd, in the form of a Preliminary Ecological Appraisal (PEA) 2024, and Preliminary Roost Assessment (PRA) 2022.

Development Proposal

The approved planning application is for the erection of a detached dwelling and garage with associated works and landscaping (Hinckley & Bosworth Borough Council ref: 23/01102/FUL). Extensive habitat creation is proposed to include garden space, native species hedgerow planting, woodland planting, meadow enhancement, and parkland trees. A site location plan is provided in Figure 1.

Site Description

The site is located to the south west of Sutton Lane, Market Bosworth, Leicestershire, CV13 0LB, (central OS grid reference: SK 40695 01524). The site comprises two grassland field compartments bound by hedgerows, fences, woodland and a line of mature trees. A watercourse, Sutton Brook, is present at the south east and south west site boundary, with further watercourses at the west site boundary and associated with the hedgerow through the centre of the site. Sutton Lane lies adjacent to the north east site boundary and provides access to the site. A barn is present in the north of the site.

Report Scope

Following the submission of planning application 23/01102/FUL, planning was approved. The planning decision contained various planning conditions. Relevant to this report, is planning condition 9 which states:

- *Prior to the commencement of development, the production of a bat-sensitive artificial lighting scheme shall be submitted to and approved in writing by the Local Planning Authority.*

The scope of this report is to provide a bat-sensitive artificial lighting scheme that will reduce the impacts of artificial light spill resulting from the proposed development and subsequently limit impacts of artificial light spill on local bat populations. This report aims to provide specific light installation prescriptions in accordance with current guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals: Guidance Note 08/18: Bats and Artificial lighting in the UK (BCT & ILP 2018).

This report aims to provide sufficient information to support the discharge of planning condition 9.

PLANS

Figure 1: Site Location Plan:

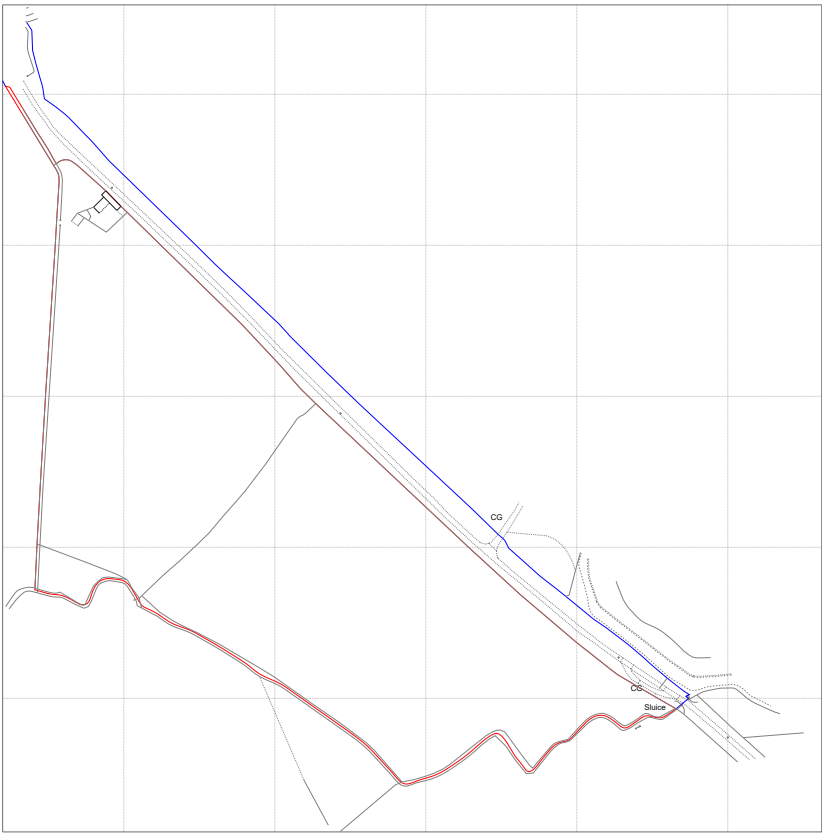
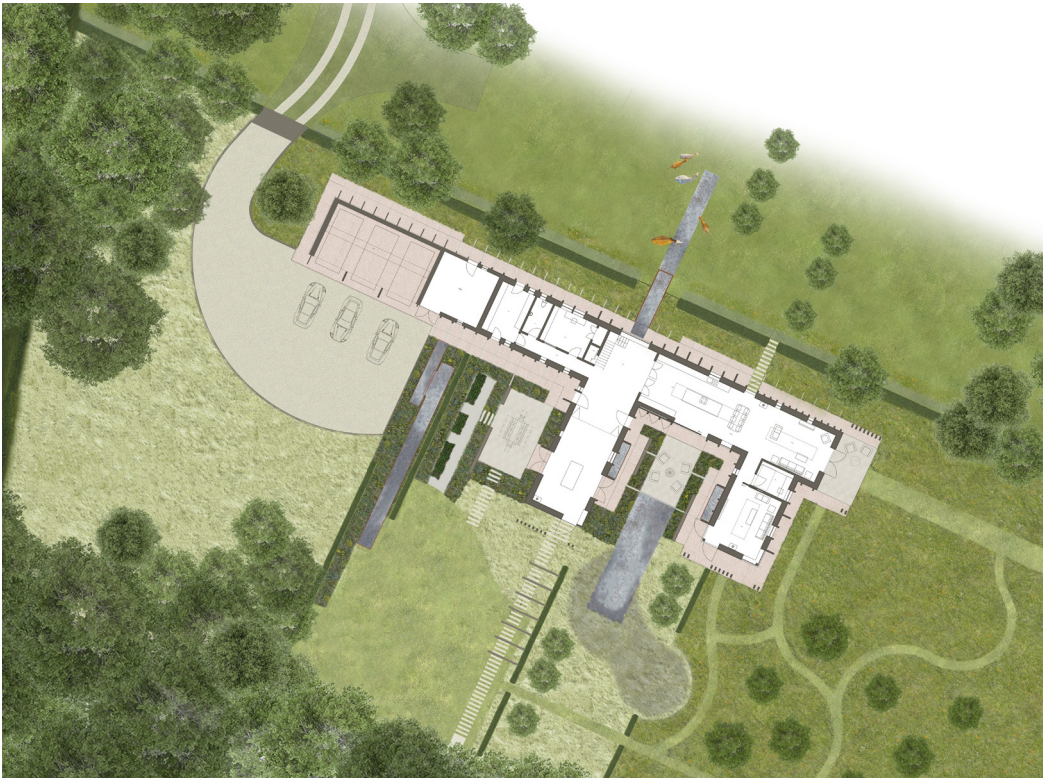


Figure 2: Site Development Plan:



ECOLOGICAL BASELINE CONDITIONS

The baseline ecological conditions of relevance to this document were determined following the PEA and PRA undertaken for the site (Elton Ecology Ltd).

Summary of Assessed Impacts of the Proposed Development on Bats

Table 1: Summary of impacts relevant to this report as a result of the PEA/PRA.

Foreseen Impacts	Recommendations <i>Measures required to adhere to guidance, legislation, and planning policies.</i>
The existing agricultural barn has been assessed as having low bat roosting suitability. The wider site is assessed as of moderate suitability for commuting and foraging bats, comprising grassland field compartments, hedgerows with trees, and a woodland copse. There will be no significant direct impacts to bat commuting and foraging habitat via direct loss of habitats, with habitat losses at the site limited to a small area of grassland to facilitate the single dwelling, and an approximately 6m length of hedgerow removal. The scheme will retain all commuting routes within the site and wider landscape, with no significant losses of hedgerows or linear features proposed.	Due to the presence of bats in the wider area as highlighted by the desk study, the impacts from external artificial lighting at the site on adjacent habitats should be avoided or mitigated through the design of lighting observing the principles set out in guidelines from the Bat Conservation Trust (BCT) & Institution of Lighting Professionals (BCT & ILP, 2018).

Artificial Lighting Baseline and Scope for Mitigation

The site is located adjacent to Sutton Lane, a gated road which has grassy verges, hedgerows, and mature trees. It is subject to limited levels of artificial light pollution and subsequently provides a dark corridor for bats.

A watercourse, Sutton Brook, is present at the south east and south west site boundary, with further watercourses at the west site boundary and associated with the hedgerow through the centre of the site – these brook habitats offer a habitat corridor.

Artificial lighting proposed to be installed in association with the proposed development should therefore focus on limiting artificial light pollution over habitats adjacent to the north of the site (Sutton Lane) and south of the site (Sutton Brook) to retain the existing dark corridors.

BAT SENSITIVE LIGHTING STRATEGY

The Bat Sensitive Lighting Strategy to be implemented at the site is detailed within Table 2 below. The lighting scheme design is illustrated in the following drawings which accompany this report:

- A247_2201_C_(elevations1_lighting)
- A247_2202_C_(elevations2_lighting)
- A247_3203_C_(sections_lighting)

Figures 4, 5 and 6 within this document indicate the 3 lighting types used within the design.

Table 2: Bat Sensitive Lighting Strategy Prescriptions

Prescription	Specification
Mitigating impacts of external lighting	External lighting will be limited to low lux level lighting fixtures with no upwards illuminance only. External lighting is proposed on the covered walkway and immediate garden area to the north aspect of the building. External lighting will also be limited on the east, west and south aspect, with lighting on the covered walkway, front door entrance, garage area, and courtyard garden areas only. High powered security lights will not be installed to any building aspects. Furthermore, no lighting will be installed outside of the garden area. New hedgerows, woodland planting and landscaping will help screen any light spill into the wider landscape such as the adjacent meadow area and field. As a result, the installation of lighting is in line with current guidance (BCT & ILP 2018) and the proposed lighting will not significantly increase artificial light levels. Proposed locations for external lighting installation are detailed on the lighting scheme design (accompanying drawings). The external lighting will be installed in accordance with current guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals: Guidance Note 08/18: Bats and Artificial lighting in the UK (BCT & ILP 2018). The below strategy utilises light prescriptions detailed within this guidance to limit impacts of artificial lighting on bats. Specifically, artificial light spill will be limited over the following features: • The proposed amenity area, meadow area and existing copse (bounded by Sutton Brook). • The adjacent fields and Sutton Lane to the north. • Ecological enhancements installed within the building, such as the proposed bat attic.

BAT SENSITIVE LIGHTING STRATEGY CONTINUED

The following lighting design prescriptions are considered suitable for the type and scale of the proposed development to minimise the impacts of artificial lighting on bats. Lighting design prescriptions required to comply with current guidance (BCT & ILP 2018) are as follows:

- Reducing the operating time of lighting and levels of illuminance provided via:

Part-night operation. Turning off lights between certain hours, e.g. midnight and 06:00. Installing all lights on switches so they can be turned permanently off during night-time hours; the use of motion sensors will be avoided to prevent unnecessary light spill during the night.

- Avoiding light spill via:

The use of directional lighting by using luminaires with rear shields and an upwards lighting ratio of zero; and

- Light type:

Use of lamps that minimise UV emissions or use UV filters to reduce the attractiveness of the lamp to invertebrates;

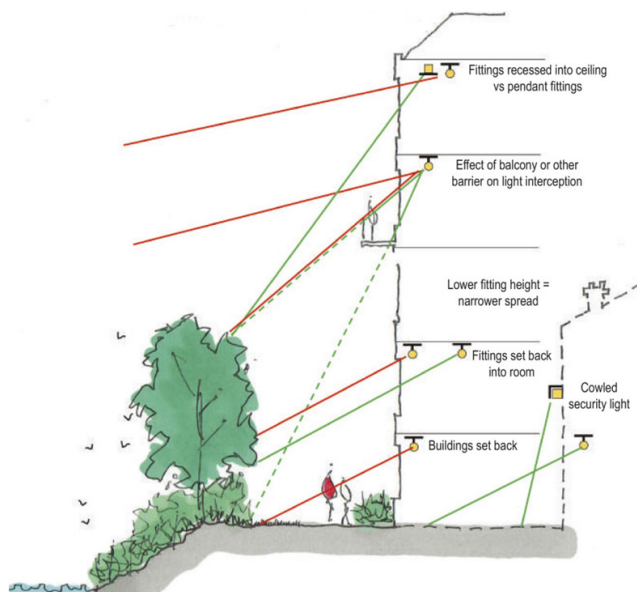
Use LED lamps, ideally warm white as this has a low relative attractiveness to invertebrates;

Installing lighting systems that deliver no greater than a 3-lux average illuminance, with a maximum horizontal illuminance of 0.6 uniformity (subject to appropriate maintenance factors).

Internal Light Fittings

Impacts of artificial light spill resulting from newly fitted internal lighting will be mitigated by positioning new fixtures in line with recommendations within current guidance (BCT & ILP 2018). Specifically, in order to limit light spill through windows, internal lighting will be recessed into the ceiling and set back a minimum of 1m from all windows as to limit horizontal light spill. A schematic representation of the effect of this lighting prescription is illustrated in Figure 3 below.

Figure 3: Internal lighting mitigation options. Image taken from Guidance Note 08/18: Bats and Artificial lighting in the UK (BCT & ILP 2018)



BAT SENSITIVE LIGHTING KEY



Figure 4 - Outdoor recessed LED downlights



Figure 5 - Outdoor Wall Light - Integrated LED Downlight to illuminate door entrances and garage area.



Figure 6 - Surface mounted outdoor LED lights to provide low level illumination on garden pathways and courtyard areas.

REFERENCES

- Elton Ecology Limited – Preliminary Ecological Appraisal (2024) and Preliminary Roost Assessment (2022).
- Hinckley & Bosworth's Borough Council – Core Strategy (2009) and Site Allocations and Development Management Policies (2016).
- Government Department for Levelling up, Housing, and Communities. (2023). National Planning Policy Framework.
- Institution of Lighting Professionals (2018). Guidance Note 08/18 Bats and Artificial Lighting in the UK. Bats and the Built Environment Series Publication.
- British Standards Institute. (2013). BS 42020, Biodiversity – Code of practice for planning and development.
- CIEEM. (2016). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM. (2013). Guidelines for Preliminary Ecological Appraisal Institute of Ecology and Environmental Management
- HMSO: Wildlife and Countryside Act 1981 (as amended)
- HMSO: Countryside & Rights of Way Act (2000)
- HMSO: Natural Environmental and Rural Communities Act (2006)
- HMSO: The Conservation of Habitats and Species Regulations (2010)

APPENDIX

Legal Protection

All species of bat and their roost sites (whether bats are present at the time or not) are fully protected under international and domestic legislation. The international protection (the European Commission (EC) Habitats Directive) has been transposed into national laws by means of the Conservation of Habitats and Species Regulations 2017 (England and Wales) as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (Scotland) and the Conservation (Natural Habitats, etc) Regulations (Northern Ireland) 1995 (as amended). Commonly the regulations are referred to as the Habitats Regulations.

Bats are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

National Planning Policy

National Planning Policy Framework 2023

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as species of principal importance under Section 41 of the Natural

Environment and Rural Communities (NERC) Act 2006) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; measurable gains in biodiversity in and around developments are incorporated; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

Local Planning Policies – Hinckley & Bosworth Borough Council

The following documents include local planning policies which relate to biodiversity and nature conservation which are relevant to this report.

APPENDIX CONTINUED

Document

Relevance

Hinckley & Bosworth Borough Council Local Development Framework Core Strategy Adopted December 2009

Sets a Natural Environment and Cultural Assets objective to maintain and enhance areas of biodiversity importance. Policy 19, 20, 21, 22.

Site Allocations and Development Management Policies DPD

DM6 – Enhancement of Biodiversity and Geological Interest

Proposals where the primary objective is to conserve or enhance biodiversity or geological interest will be permitted where they comply with other relevant policies in the plan.

On site features should be retained, buffered and managed favourably to maintain their ecological value, connectivity and functionality in the long-term.