



ECOLOGICAL LIGHTING DESIGN STRATEGY

Land off Folders Lane, Burgess Hill

On Behalf of: Jones Homes (Southern) Ltd

Client:	Jones Homes (Southern) Ltd			
Project:	Land off Folders Lane, Burgess Hill			
Reference:	LLD3589-ECO-REP-004-00-Lighting-Strategy			
Revision:	Date:	Author	Proof	Approved
00	15/09/25	Joseph Peterson MSc BSc (Hons)	Sam Hall MSc BSc (Hons)	Sam Hall MSc BSc (Hons)

Disclaimer:

The information provided within this report has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

This report is intended for the sole use of the Client and their agents in accordance with the agreement under which our services were performed. Unauthorised communication, reproduction or usage of this report by any party other than the aforementioned is prohibited. No liability is accepted by Lizard Landscape Design and Ecology for any use of this report, other than for the purposes for which it was originally prepared and provided. This report does not constitute legal advice. No warranty, express or implied, is made as to the advice in this report or any other service provided by us.

Validity:

This report is valid for 18 months from the date of the site visit. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

SUMMARY

Lizard Landscape Design and Ecology was commissioned by Jones Homes (Southern) Ltd to provide an Ecological Lighting Design Strategy that demonstrates how external lighting at Land off Folders Lane, Burgess Hill (located around central grid reference: *TQ 32962 17935* – hereafter referred to as ‘the site’) will comply with best practice guidelines outlined by the Bat Conservation Trust (BCT) and the Institute of Lighting Professionals (ILP) (Guidance Note 08/23).

The existing lighting design was subsequently reviewed, with all nocturnal lighting sources identified. Consideration was then given towards the potential impact that the proposed luminaires may have towards habitats of value to foraging and commuting bat species. Mitigation to this lighting design is set out herein which will be implemented to ensure that the development accords with the wording of guidance note 08/23 and that the impacts of any nocturnal lighting are negligible and non-significant.

1.0 INTRODUCTION

1.1 Lizard Landscape Design and Ecology has been commissioned by Jones Homes (Southern) Ltd to undertake an Ecological Lighting Design Strategy for Land at Land off Folders Lane, Burgess Hill (located around central grid reference: TQ 32962 17935 – hereafter referred to as ‘the site’).

1.2 This report has been produced to allow the discharge of condition 21 which states:

Prior to the first occupation a lighting design scheme based on guidance GN: 08/23 (Institute of Lighting Professionals) for biodiversity shall be submitted to and approved in writing by the local planning authority. The scheme shall identify those features on site that are particularly sensitive for bats and that are likely to cause disturbance along important routes used for foraging; and show how and where external lighting will be installed (through the provision of appropriate lighting contour plans, Isolux drawings and technical specifications) so that it can be clearly demonstrated that areas to be lit will not disturb or prevent bats using their territory.

All external lighting shall be installed in accordance with the specifications and locations set out in the scheme and maintained thereafter in accordance with the scheme. Under no circumstances should any other external lighting be installed without prior consent from the local planning authority."

Reason: To allow the LPA to discharge its duties under the Conservation of Habitats and Species Regulations 2017 (as amended), the Wildlife & Countryside Act 1981 as amended and s40 of the NERC Act 2006 (as amended) and in accordance with policy DP38 of the Mid Sussex District Plan and 180 of the NPPF Policy.

Site Information

1.3 The site area is c. 1.7ha and habitats on site were found to consist of an unmanaged matrix of tussocky grassland and scrub with a boundary made up of trees and understorey shrubs. The site is located

Surrounding Landscape

1.4 The surrounding predominantly rural, with the built-up area of Burgess Hill spreading over 1.0km to the northwest of the site. The landscape is dominated by pastoral farmland, delineated by mature hedgerows and tree lines.

Development Proposals

- 1.5 It is understood that the proposals include the construction of 40no. new residential properties with associated gardens, access, and car parking.

Ecological Background

- 1.6 The previous EclA report of the site identified that the boundary vegetation was suitable to support foraging and commuting bats, as well as potentially roosting bats, particularly within the eastern boundary of the site (LLDE, 2024).
- 1.5 This report should be read in conjunction with the following reports:
- Ecological Impact Assessment, LLDE, 2024.
 - Bat Emergence Survey, LLDE, 2023.

2.0 AIMS AND OBJECTIVES

- 2.1 The aim of the Ecological Lighting Design Strategy, has been to identify constraints and opportunities for protected species, including bats, within the surrounding area in order to protect roosts, potential roosts, and foraging and commuting habitats from disturbance through inappropriate external lighting.

3.0 METHODOLOGY

- 3.0.1 An assessment of the existing lighting design strategy was made by assessing compliance with the stepwise process for determining appropriate mitigation of artificial lighting impacts on bats as set out in guidance note 08/23 (BCT & ILP, 2023). The following key principles were considered when determining appropriate lighting design:

1. Avoid lighting on key habitats and features;
2. Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations; and
3. Demonstrate compliance with illuminance limits and buffers.

- 3.0.2 Suitable changes were then proposed based on how the existing lighting design strategy could adhere to the above steps. This was assessed using best practice mitigation recommendations provided within guidance note 08/23 – *Bats and Artificial Lighting at Night* (BCT & ILP, 2023) and the *UK Bat Mitigation Guidelines* (Reason and Wray, 2023).

3.1 Survey Results

Bat Roosting Potential

- 3.1.1 As set out in the *Ecological Impact Assessment* (LLDE, 2024) many of the boundary trees were identified as containing suitable features to support roosting bats.
- 3.1.2 3no. surveys were completed within the active bat season 2023, identifying a small number of foraging and commuting bats present on site, as well as a potential, but unconfirmed, brown long-eared bat *Plecotus auritus* roost within the eastern treeline.

Foraging and Commuting Suitability

- 3.1.3 The on-site areas comprised mostly modified grassland and bramble scrub. Adjacent habitats were primarily pastoral farmland, delineated by mature hedgerows, with areas of lowland mixed deciduous woodland (classified as ancient woodland) such as Blackbrook Wood and West Wood 1.1km and 1.5km to the east and northeast of the site respectively.
- 3.1.4 Overall, it was determined that the site and surrounding area offers **moderate** suitability for commuting and foraging bats at the **site** level, with **low** potential to support a notable species assemblage. The greatest value habitats on-site was associated with the mature trees along the boundary of the site.

4.0 ECOLOGICAL LIGHTING DESIGN STRATEGY

4.1 Daytime Bat Walkover

- 4.1.1 As set out in steps 1 and 2 of the BCT guidance note 08/18 a bat walkover survey was conducted as a part of the PEA/EcIA assessment of the site, to identify the potential for roosts, commuting habitat, and foraging habitat, and an evaluation of their importance was conducted. Multiple potential roosting features were identified within the boundary trees. Full details can be found within the Bat Survey Report and EcIA (LLDE, 2023 + 2024).

Baseline Assessment

- 4.1.2 The site is currently an empty pastoral field, with no artificial lighting present.

Specification of bulbs

- 4.1.3 The specification bulbs for all luminaires are a warm white lighting temperature of 2700K. This is compliant with guidance note 08/23, using the recommended light temperatures and wavelengths.
- 4.1.4 Additionally all luminaires will be dimmable, to further reduce the potential for light related impacts.

4.2 Proposed Lighting Design Strategy

- 4.2.1 Modifications to the existing lighting designs which will be implemented to ensure compliance with guidance note 08/18 (BCT and ILP, 2018) are set out below. These identify the lighting mitigation to be applied within each of the illuminance limit zones and how this will ensure potential impacts to foraging and commuting bats are non-significant.

Zone A – Key Bat Habitat

- 4.2.2 Zone A within the ECOP (see *Figure No. 01 – Ecological Constraints and Opportunities Plan*) has been designated as the mature tree boundaries of the site and scrub vegetation as it is key on-site foraging and commuting habitat for bats. No lighting currently exists within or directly adjacent to this area. Current proposals utilise lighting columns 6m tall, that shall allow a dark corridor to remain at the top of the treeline, despite small amounts of light encroachment to the base of the treeline. This will ensure that the key foraging and commuting habitats are not meaningfully impacted by the development.

Zone B – Lighting Buffer Zone

- 4.2.3 A 5m natural buffer from the core habitat is proposed within the scheme and has been designated as Zone B within the ECOP. This habitat is of lower importance for foraging bats but could still result in incidental impacts through higher illuminance. Illuminance within this zone is to be strictly controlled, ensuring minimal impacts upon the foraging and commuting habitat, and the scheme shall avoid placing luminaires within this zone. The planting within this zone as a part of the scheme shall also act as a natural barrier, blocking light spill.

Zone C – Transition Zone

- 4.2.4 A further 5m from the buffer zone, this area shall still require mitigation to potential impacts from light spills. Directional lighting and shielded lighting columns should still be used within this zone.
- 4.2.5 The luminaires are proposed to use 2700k bulbs. This will reduce the bulbs blue light component and ensure that the bulbs do not emit the peak wavelengths that are most disruptive to bats.
- 4.2.6 The luminaries shall also be dimmed during the hours of 23:00 – 04:00, from 100% to 65%, to further reduce the overall light pollution and the potential impacts of the lighting design on bats.

- 4.2.7 Overall, the provided mitigation will both minimise light spill into the semi-natural habitats within Zones A and B and minimise their impact through reducing disruptive wavelengths. Dimming and natural buffers will further mitigate potential impacts. Given the proposed scheme is for residential road lighting, a compromise of public safety for minimised and mitigated impacts is considered acceptable.

Zone D – Core Development Zone

- 4.2.8 The proposed lighting design within the core development zone is deemed to be sufficient to mitigate against potential adverse impacts to foraging and commuting bats.

6.0 REFERENCES

BCT & ILP. (2023). *Guidance Note 08/23. Bats and Artificial Lighting at Night. Bats and the Built Environment series*. Institution of Lighting Professionals. Regent House, Regent Place, Rugby, Warwickshire.

BSI. (2013). *BS 42020:2013 Biodiversity – Code of practice for planning and development*. London: BSI - British Standards Institution.

BSI. (2015). *BS 8596:2015 Surveying for bats in trees and woodland*. British Standard Institution, London.

CIEEM. (2020). *Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK*. 2nd Edition. Chartered Institute of Ecology and Environmental Management. Winchester.

Collins., J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th ed.) The Bat Conservation Trust, London. ISBN 978 1 7395126 0 26.

Ministry of Housing, Communities & Local Government. (2021). *National Planning Policy Framework*. Fry Building, 2 Marsham Street, London. This publication is available [online] at www.gov.uk/government/publications

Multi-Agency Geographic Information for the Countryside (MAGIC). (2023). Interactive Map. [online]. Available at: <https://magic.defra.gov.uk/MagicMap.html>.

Reason, P.F. and Wray, S. (2023). *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.1*. Chartered Institute of Ecology and Environmental Management, Ampfield.

