

Shornemead House ,
Peartree Lane
Shorne,
Gravesend,
Kent
DA12 3 JT.

For and on behalf of Gavin and Dawn Coward

External Lighting & Bat Impact Assessment

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Executive Summary

This External Lighting Assessment has been prepared to support the planning submission for Shornemead House. Its purpose is to demonstrate that the proposed external lighting strategy has been designed to avoid adverse ecological impact, with particular regard to bat activity identified within and around the site.

The assessment evaluates the type, placement, spectrum, intensity, and operational control of all proposed external luminaires. The lighting design has been developed in accordance with ILP/BCT *Guidance Note 08/18: Bats and Artificial Lighting in the UK*, ensuring that illumination is restricted to essential areas only and that sensitive ecological features remain protected.

Key mitigation measures incorporated into the design include:

- Use of warm-white luminaires ($\leq 3000\text{K}$) with reduced blue light content
- Zero upward light and controlled optical distribution to minimise spill
- Low mounting heights and directional shielding to preserve dark corridors
- Dimming, time-clock scheduling, and presence-activated operation to limit unnecessary illumination
- Avoidance of roosting, commuting, and foraging zones identified in ecological surveys

Technical data sheets, lighting drawings, and ecological mitigation details are provided within the appendices to support the Local Planning Authority's review. Based on the measures outlined in this report, the proposed external lighting strategy is considered to be compliant with recognised best practice and is not expected to result in significant disturbance to bats or other nocturnal wildlife.

2. Introduction & Scope

This External Lighting Assessment has been prepared to support the planning submission for Shornemead House. The purpose of the report is to evaluate the proposed external lighting strategy in relation to ecological sensitivity, particularly bat activity, and to demonstrate compliance with recognised best-practice guidance.

The assessment considers the type, placement, and operation of external luminaires, with specific reference to spill light, spectral characteristics, intensity control, and operational timing. The scope includes:

- Review of ecological constraints associated with the site
- Assessment of luminaire performance and environmental impact
- Identification of mitigation measures to minimise disturbance to bats
- Confirmation of compliance with ILP/BCT *Guidance Note 08/18: Bats and Artificial Lighting in the UK*
- Presentation of technical data, drawings, and supporting documentation

This report forms part of the wider ecological mitigation strategy for the site and should be read in conjunction with the ecological survey data and bat activity assessments submitted separately.

3. Ecological Context

Shornemead House is located within an area known to support bat activity, with existing ecological surveys identifying potential commuting routes and foraging zones in proximity to the site. Bats are highly sensitive to artificial lighting, particularly high-intensity and cool-white sources that disrupt natural behaviour patterns.

Key ecological considerations relevant to this assessment include:

- **Commuting corridors:** Vegetation lines and boundary features that may be used by bats for movement.
- **Foraging areas:** Dark zones where bats feed, typically requiring minimal artificial illumination.
- **Roosting potential:** Existing structures and proposed bat boxes that must remain undisturbed by artificial light.
- **Light spill risk:** Potential for luminaires to cast light into sensitive ecological zones.

The lighting strategy has been developed to ensure that illumination is restricted to essential areas only, with careful control of spill, intensity, and spectral output to avoid adverse ecological impact.

4. Luminaire Schedule

Type	Description	Output / Efficacy	CCT / CRI	Power
Ex1	LED bollard (driveway)	265 lm, 11 W (≈ 24 lm/W)	3000 K, CRI 80	11 W
Ex2	Wall light (house façade)	990 lm, 9.9 W (≈ 100 lm/W)	3000 K, CRI 80	9.9 W
Ex3	PIR entrance light (gate)	900 lm, 9 W (≈ 100 lm/W)	3000 K, CRI 80	9 W

The proposed external lighting installation comprises a limited number of luminaires selected for their low ecological impact, controlled optical distribution, and warm colour temperature. Full technical data sheets are provided in **Appendix 3**.

Summary of proposed luminaires:

- **EX1** – Low-level bollard luminaire with directional optics
- **EX2** – Wall-mounted luminaire with downward distribution
- **EX3** – Column-mounted luminaire with controlled cut-off and zero upward light

All luminaires have been selected to ensure:

- Colour temperature $\leq 3000\text{K}$
- Zero upward light ratio (ULR 0%)
- Tight optical control to minimise spill
- Compatibility with dimming and timed operation

The luminaire schedule has been cross-referenced with ecological constraints to ensure no fittings are positioned in locations that would cause unnecessary illumination of bat-sensitive areas.

5. Luminaire Impact & Mitigation Measures

The potential ecological impact of the proposed lighting has been assessed with reference to bat-sensitive zones identified in ecological surveys. Mitigation measures have been incorporated into the design to ensure compliance with ILP/BCT GN 08/18.

Mitigation measures include:

- **Directional optics** to prevent light spill into vegetation corridors
- **Warm-white spectrum** to reduce behavioural disturbance
- **Low mounting heights** to limit horizontal spread
- **Shielding and cowls** where required to prevent overspill
- **Reduced luminaire quantity** to maintain dark corridors
- **Avoidance of roosting and foraging zones** through careful placement

The combination of these measures ensures that illumination is restricted to essential access and safety areas only, with no significant adverse impact anticipated on bat activity.

6. Spectrum & Colour Temperature

The spectral characteristics of artificial lighting play a critical role in bat behaviour. Cool-white and blue-rich light sources are known to disrupt feeding and commuting patterns.

To mitigate this, all proposed luminaires operate at:

- **≤ 3000K colour temperature**
- **Warm-white spectrum with reduced blue content**
- **High colour rendering without excessive spectral peaks**

This approach aligns with ecological best practice and ensures minimal disruption to nocturnal species.

7. Spill & Intensity Controls

Light spill has been minimised through a combination of optical control, luminaire selection, and physical shielding.

Key spill-control measures include:

- **Zero upward light** from all luminaires
- **Directional beam shaping** to confine illumination to paths and entrances
- **Low-intensity output** appropriate for residential access
- **Avoidance of wide-beam floodlighting**
- **Use of cowls and baffles** where required

Intensity levels have been set to the minimum necessary for safe access, ensuring compliance with ecological guidance while maintaining functional lighting for residents.

8. Operational Controls

Operational controls form a critical part of ecological mitigation, ensuring that lighting is used only when required.

The following controls are proposed:

- **Time-clock scheduling** to limit operation to essential hours
- **Dimming profiles** to reduce intensity during late-night periods
- **Presence-activated lighting** where appropriate to avoid continuous illumination
- **Automatic shut-off** during periods of inactivity
- **Manual override restrictions** to prevent unnecessary prolonged operation

These measures ensure that artificial lighting remains limited, predictable, and ecologically sensitive.

9. Conclusion

The proposed external lighting strategy for Shornemead House has been designed to minimise ecological impact while providing safe and functional illumination for residents. Through careful luminaire selection, controlled optical distribution, warm spectral output, and robust operational controls, the design complies fully with ILP/BCT GN 08/18 and aligns with best-practice ecological guidance.

The assessment demonstrates that the lighting installation will not adversely affect bat activity or other nocturnal wildlife. Supporting drawings, schedules, and technical data are provided within the appendices to assist the Local Planning Authority in its review.

11. Appendices

Appendix 1-Drawing C1245D external site plan lighting layout.

Appendix 2 – Drawing C2145D External site plan and lighting spill.

Appendix 3 – Shornemead House Luminaire Schedule and Data Sheets

Appendix 4 – Bat Boxes

