



BLOCK 9 DEVELOPMENTS LIMITED

LAND ADJACENT 28 HORSEPOOL

BROMHAM

LIGHTING STRATEGY

www.lightable.co.uk



DOCUMENT ISSUE RECORD

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EXECUTIVE SUMMARY

This Lighting Strategy has been prepared for Block 9 Developments Limited (“the Client”) by Dan Alasfar of Lightable Projects Ltd (“Lightable”), an Incorporated Engineer and Registered Member of the Institute of Lighting Professionals (“ILP”) with more than ten years’ experience in technical input for environmental lighting.

The Lighting Strategy is for a proposed two-storey dwelling at 28 Horsepool, Bromham, Chippenham, SN15 2HD (“the Site”). The strategy evaluates compliance with relevant lighting standards and guidelines, balancing the need for lighting with potential adverse light impacts (light pollution).

Key Findings

- This Lighting Strategy has been produced in accordance with all relevant local and national policy and guidance including the recommendations of the appointed ecologist, EcoLogic Consultant Ecologists.
- Lux modelling has been undertaken to illustrate how artificial lighting is predicted to be distributed across the site and to demonstrate that it will not illuminate identified bat habitats to more than 0.5 lux.
- If lighting is installed in accordance with this strategy the overall adverse lighting impact is anticipated to be negligible.

Recommendations

- Utilise high quality LED luminaires.
- Adopt a site-wide warm white (2700K) colour temperature.
- Control external lighting using PIR detectors to minimise unnecessary operation.
- Utilise ceiling recessed downlights set back into rooms internally.

1.0 INTRODUCTION

- 1.1 This Lighting Strategy has been prepared to support the discharge of the following planning condition attached to Wiltshire Council planning permission reference PL/2025/06493.

“Condition 18

Prior to commencement of development, a lighting plan that includes a Lux Plot, shall be submitted to and approved in writing by the local planning authority. The plan shall demonstrate that bat habitat (trees, scrub and hedgerows) on the perimeter of the site will remain below 0.5 lux.

All lighting provided on site shall be in accordance with the appropriate Environmental Zone standards set out by the Institute of Lighting Engineers in their publication GN01:2021, ‘Guidance for the Reduction of Obtrusive Light’ (ILP,2021), and Guidance note GN08/23 “Bats and artificial lighting at night”, issued by the Bat Conservation Trust and Institution of Lighting Professionals.”

- 1.2 This Lighting Strategy sets out to achieve the following:
- Review relevant policy and guidance.
 - Establish the location(s) and sensitivity of any adjacent bat habitats.
 - Provide mitigation measures to remove potentially adverse impacts.
 - Propose luminaire types.
 - Undertake detailed external lighting modelling, designed to provide a high-quality, low impact proposal for lighting.

2.0 POLICY AND GUIDANCE

Wiltshire Core Strategy Adopted January 2015

“The Core Strategy gives communities a solid framework within which appropriate community-led planning policy documents, including neighbourhood plans, can be brought forward and communities themselves can decide how best to plan locally.”

Core Policy 50 Biodiversity and geodiversity Protection

Development proposals must demonstrate how they protect features of nature conservation and geological value as part of the design rationale. There is an expectation that such features shall be retained, buffered, and managed favourably in order to maintain their ecological value, connectivity and functionality in the long-term.

Where it has been demonstrated that such features cannot be retained, removal or damage shall only be acceptable in circumstances where the anticipated ecological impacts have been mitigated as far as possible and appropriate compensatory measures can be secured to ensure no net loss of the local biodiversity resource, and secure the integrity of local ecological networks and provision of ecosystem services.

All development proposals shall incorporate appropriate measures to avoid and reduce disturbance of sensitive wildlife species and habitats throughout the lifetime of the development.

Preliminary Ecology Appraisal (2025)

- 2.1 A Preliminary Ecological Appraisal (PEA) was carried out by EcoLogic Consultant Ecologists. The PEA identifies habitats and any potential for protected species on or near a site. It provides a baseline understanding of ecological constraints and areas that should be kept dark.

Lighting Plan

“A sensitive lighting plan should be designed by a professional lighting engineer and submitted alongside the planning application, to ensure that nocturnal species such as bats and hedgehog are not negatively impacted by the proposal. The sensitive lighting plan should follow the below specification specifically ensuring that there is no light spill above 0.5 lux upon retained, created and surrounding habitats. Further information can be found within Guidance Note 08/23: Bats and Artificial Lighting at Night.”

External Lighting

“External lighting should be avoided, however, if lighting is required, it will be installed adjacent to access, doorways, steps etc. only, below 1 m in height and directed below a 70-degree plane. Any external lighting associated with the development will be adapted to be based on a Passive Infrared Sensor (PIR) system (being motion sensitive only to large objects) and on a short timer (no longer than 1 minute). Lighting will specifically not be positioned where it could illuminate surrounding vegetation (woodland, trees, hedgerows, hedge banks etc.) or any areas beyond the development area.

LED luminaires which lack UV elements with glass glazing should be used instead of mercury or metal halide lamps. This type of lighting can be used more directionally and will reduce the range of light wavelengths emitted thus significantly reducing the levels of light which may attract increased levels of invertebrate bat prey items. Such light should be positioned to only illuminate the required areas, limiting light spill, both horizontally and vertically beyond the site.

A warm white spectrum (ideally <2700 Kelvin) should be adopted to reduce the blue light component. Luminaires should feature peak wavelengths higher than 550 nm to avoid the component of light most disturbing to bats (Institution of Lighting Professionals & the Bat Conservation Trust 2018). Additionally, hoods, cowls, louvers and/or shields should be used to further direct any lighting.

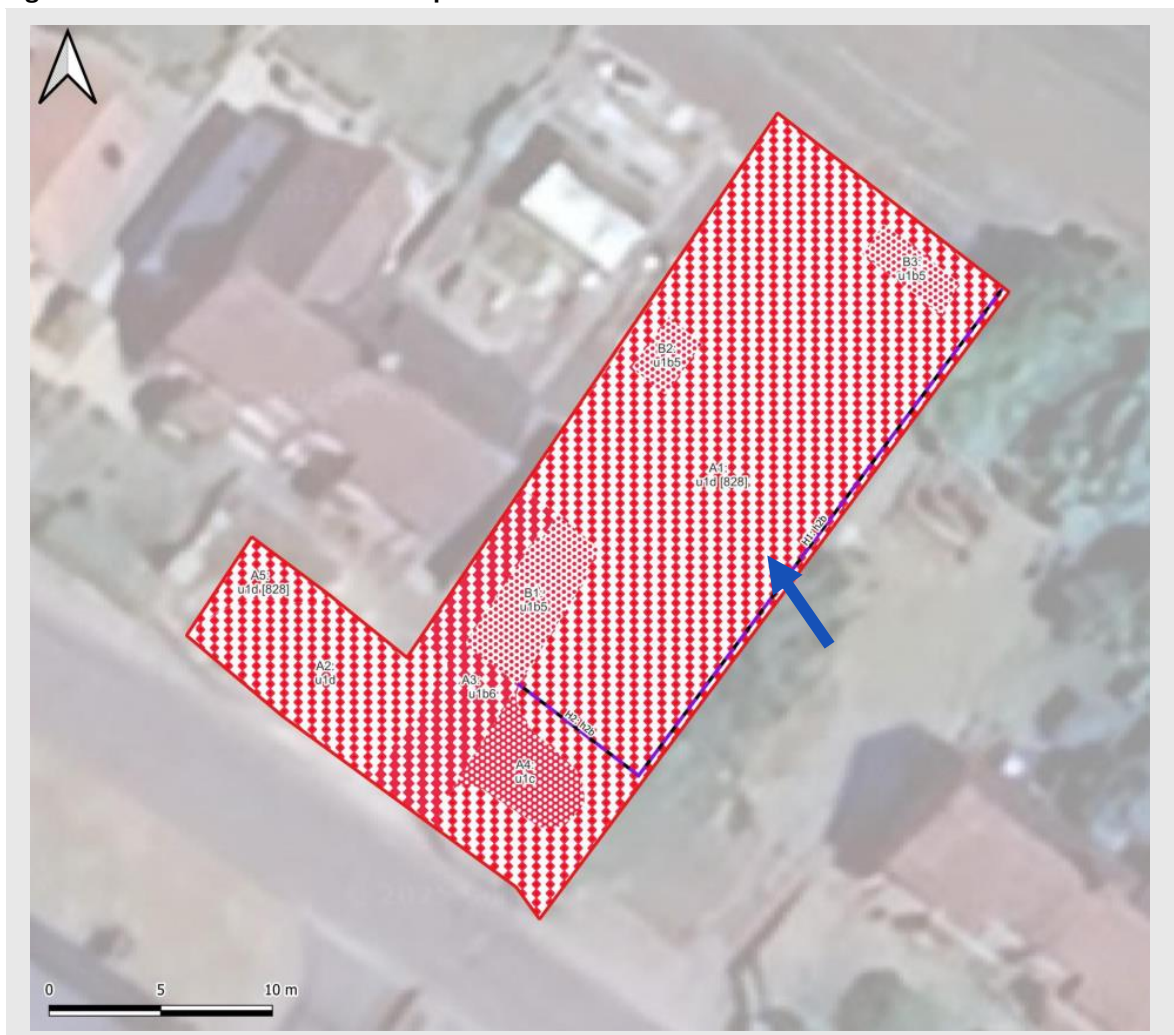
Internal Lighting

Internal lighting should be recessed where installed in proximity to windows and blinds should be fitted to reduce glare and light spill (Institution of Lighting Professionals & the Bat Conservation Trust 2018).

Sensitive Receptors

- 2.2 Figure 2.1 includes an extract from Appendix 1 - Habitat Classification Map. A non-native & ornamental hedgerow along the eastern boundary has been identified as suitable bat habitat.

Figure 2.1 Habitat Classification Map



National Planning Policy Framework (2024)

- 2.3 The Revised National Planning Policy Framework (NPPF) provides guidance relating to planning and pollution control for new development in England. The purpose of the planning system is to contribute to the achievement of sustainable development. In relation to lighting, Paragraph 198 states:

“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should: c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.”

Clean Neighbourhoods and Environment Act (2005)

- 2.4 The CNEA 2005 amended section 79(1) of the Environmental Protection Act 1990, extending the statutory nuisance regime to include light nuisance stating the following:

“(fb) artificial light emitted from premises so as to be prejudicial to health or a nuisance.”

- 2.5 This Act provides the statutory framework for addressing artificial light as a potential statutory nuisance. This Act does not set prescriptive light pollution limits but instead allows local authorities to act where lighting is judged to cause harm to health or a material interference. In practice, ILP GN01/21 is commonly adopted as the benchmark guidance to demonstrate compliance and to assist in the assessment of lighting impacts.

ILP Guidance Note 01 for the Reduction of Obtrusive Light (GN01/21)

- 2.6 The ILP has proposed lighting guidance and criteria for local authorities with a recommendation that they are incorporated at the local plan level. The guidance supports planning policy by promoting well-targeted, controlled lighting that meets functional needs while safeguarding sensitive receptors from adverse effects.
- 2.7 ILP GN01/21 recommends that the immediate environment is classified into an environmental zone based on ambient lighting levels in the surrounding area. For each Environmental Zone, the ILP provide recommended obtrusive light limits for exterior lighting installations.

ILP Guidance Note 08 for Bats and artificial lighting in the UK (GN08/23)

- 2.8 This document is aimed at lighting professionals, lighting designers, planning officers, developers, bat workers/ecologists and anyone specifying lighting. It is intended to raise awareness of the impacts of artificial lighting on bats, and mitigation is suggested for various scenarios.

SLL Lighting Guide 06 The Exterior Environment

- 2.9 This document provides detailed guidance on the design and assessment of outdoor lighting in public and private spaces. It covers functional requirements for visibility and safety, while also addressing environmental considerations such as obtrusive light, energy efficiency, and the character of the built environment. The document is widely recognised by practitioners and complements ILP GN01/21 by offering practical design advice aligned with planning and environmental objectives.

SLL Lighting Guide 21 Protecting the Night-time Environment

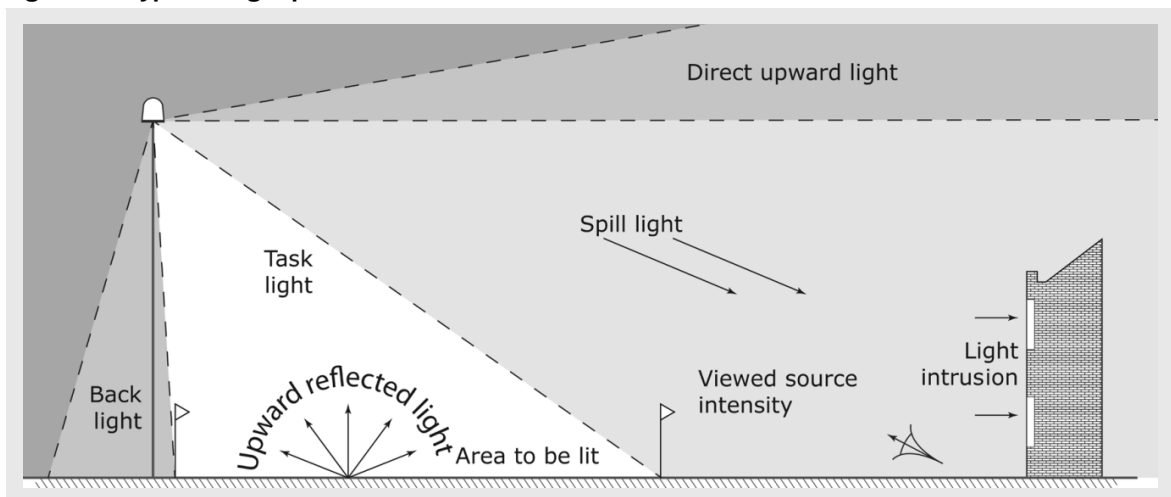
- 2.10 This document focuses on limiting obtrusive light and safeguarding dark skies. It provides practical guidance on reducing glare, sky glow, and spill light, with a strong emphasis on sensitive design in areas with ecological or amenity value. LG21 is frequently cited alongside ILP GN01/21 as complementary guidance to help demonstrate good practice in planning and environmental assessments.

3.0 LIGHT POLLUTION

3.1 Light pollution describes the unintended or excessive effects of artificial lighting beyond its functional purpose. The main types are below.

- **Sky glow** : the brightening of the night sky caused by upwardly directed or reflected light scattering in the atmosphere. It reduces visibility of stars and undermines the character of dark landscapes.
- **Light intrusion** : unwanted light entering windows or private spaces, which can disturb sleep, affect health and wellbeing, and impact residential amenity.
- **Glare** : excessive brightness or contrast that causes discomfort or impairs vision. Glare can reduce safety for road users and pedestrians by making it difficult to see beyond the light source.
- **Clutter** : the over-concentration or poor arrangement of lights in an area, often seen along busy roads or commercial frontages. This creates visual confusion, can distract drivers, and detracts from the night-time environment.

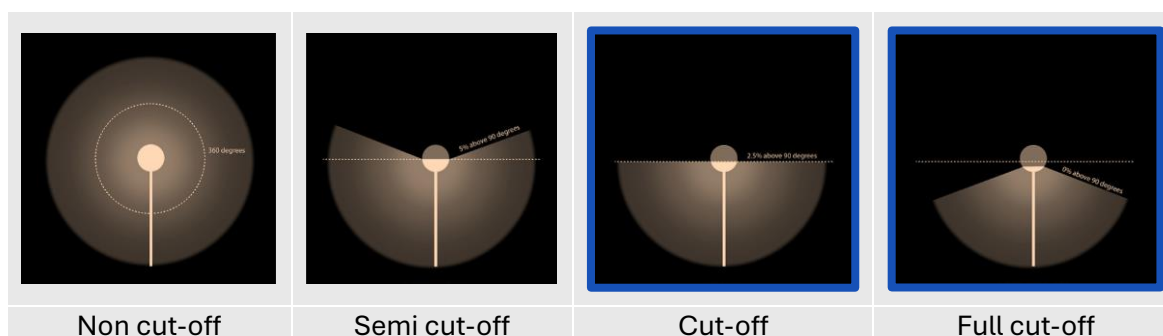
Figure 3.1 Types of light pollution



3.2 In practice, light pollution commonly occurs due to poorly specified or installed luminaires, incorrect aiming or tilt, excessive light levels beyond what is required, and the absence of effective controls. It may also arise where lighting has been introduced without consideration of its wider context, including proximity to sensitive ecological habitats, neighbouring properties, or transport systems.

4.0 MITIGATION

- 4.1 Poorly thought-out lighting has the potential to cause unacceptable impacts on sensitive receptors. The following mitigation steps have been applied in an effort to reduce adverse impacts to negligible levels.
- 4.2 **Low mounting heights :** Mounting heights shall be restricted to 1.8m, designed to reduce light spill and the overall size and scale of lighting.
- 4.3 **Lighting controls :** External lighting shall generally be switched off. External lighting shall be controlled using PIR detectors to minimise unnecessary operation.
- 4.4 **Directional light :** All luminaires shall be directional, cut-off or full cut-off type, emitting all their light below the horizontal plane.



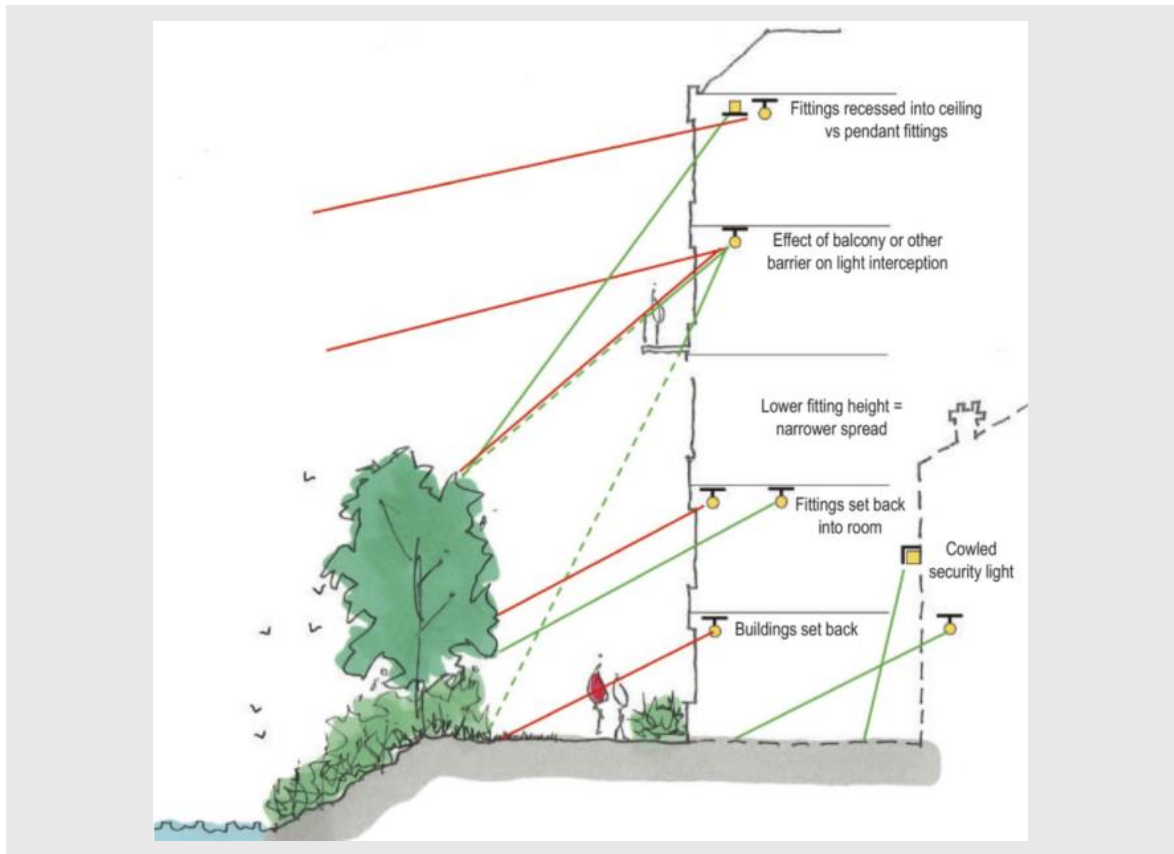
- 4.5 **Avoiding over lighting :** Illumination levels across the site shall be designed to provide the minimum illumination for safe access and wayfinding.
- 4.6 **Warm colour temperature :** Luminaires shall be 2700K warm white colour temperature with reduced blue light component. Warmer whites are known to be less disruptive to ecological systems and less prone to disrupt natural sleep-wake cycles. Warm white also causes less light “scatter” which contributes to sky glow.

Figure 4.1 Selected colour temperature



- 4.7 **Internal lighting :** - Internal lighting shall be:
- Ceiling recessed.
 - Set back into rooms.
 - Not be aimed towards windows.
 - Warm white 2700K colour temperature.

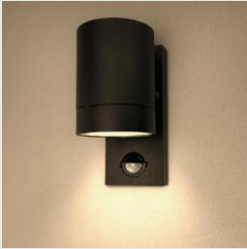
Figure 4.2 Internal lighting mitigation



5.0 LUMINAIRE SELECTION

5.1 The following luminaires have been used for this assessment. The selected luminaires are low intensity, high quality LED type, designed to minimise obtrusive light.

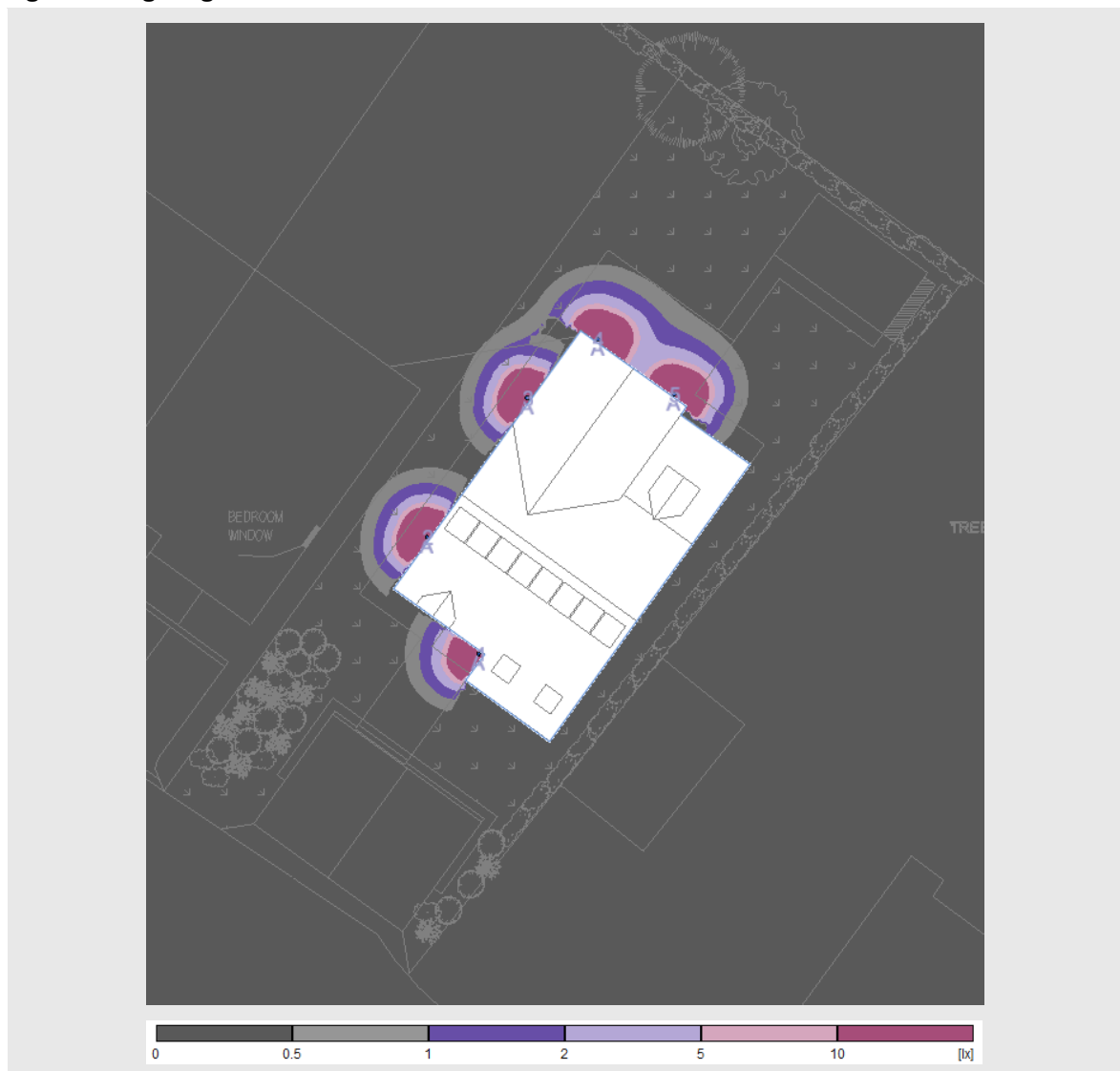
Table 5.1 Luminaire Type A

Type A	
Specification	Description
Correlated Colour Temperature (CCT)	Warm white (2700K)
Mounting	Wall mount @ 1.8m
Manufacturer	Ledvion
Product	Colorado Outdoor Wall Light with Sensor
Lamp	Integral LED GU10 lamp
Lamp Output	400 lumens
Controls	Integrated presence detection
Luminaire image	

6.0 MODELLING

- 6.1 Detailed lighting modelling has been undertaken using RELUX Desktop, an industry standard software package capable of raytraced scene rendering.
- 6.2 The Site and surroundings have been modelled based on the latest available Architectural Drawings. Blocking effects caused by surrounding buildings, walls, fences, or vegetation have been excluded from the model, and all lights have been set to operate at maximum output, to represent a worst-case scenario.
- 6.3 A false colour extract from the lighting model is provided in Figure 6.1 in visualising the predicted light distribution.
- 6.4 An external lighting lux plot layout drawing has been prepared to illustrate the proposed on and off-site illumination distribution, presented as lux contour lines with an overlaid calculation grid. This drawing is included in Appendix 1.
- 6.5 As can be seen, light levels at the non-native & ornamental hedgerow along the eastern boundary are expected to remain below 0.5 lux.

Figure 6.1 Lighting model false colour view - measurements in lux



7.0 CONSTRUCTION PHASE LIGHTING

7.1 While construction phase lighting is expected to be short term and reversible it is important to minimise disruption as far as practicable. To reduce the effects of lighting during the construction phase the following measures should be put in place:

- Lighting will operate in all external areas used by construction workers after dark in order to provide a safe and secure working environment without over lighting. High quality LED light sources with high colour rendering index (CRI) shall be utilised to maximise visibility with efficient light output;
- Lighting shall be provided to meet the target lux level as set out in BS 12464-2 Lighting of outdoor workplaces without over lighting. Luminaires shall be mounted at the lowest practical mounting height, providing lighting only where lighting is required;
- The Contractor shall specify working hours, uses of lighting, location of temporary floodlights and construction compound and agreeing these with the local council to reduce duration of impact;
- Lighting controls should be employed to dim or switch off any lighting that is not needed;
- Lighting that needs to be sited close to the perimeter or sensitive areas should be fitted with shielding or be switched off or dimmed when not in use;
- Lighting should be controlled in such a way to illuminate high activity, hazardous or high security areas while reducing lighting levels at less pertinent areas; and
- The Contractor should act responsibly to adjust any temporary lighting reported as causing nuisance.

APPENDICES

Appendix 1 : Lux Plot Layout



- NOTES**
1. This is not a construction drawing.
 2. Do not scale from this drawing.
 3. This drawing is to be read in conjunction with all other project documents.
 4. This lux plot is under worst case conditions, i.e., Free from obstructions, when all lights are operating at maximum output.

KEY

LUMINAIRE SCHEDULE		
SYMBOL	DESCRIPTION	IMAGE
• A	LEDVION COLORADO WITH SENSOR 400 LUMENS 2700K WARM WHITE WALL MOUNT @ 1.8M	

ISOLUX CONTOURS (lux)	
	10.0
	5.0
	2.0
	1.0
	0.5

ISOLUX GRID				
0	0	1	1	1
0	1	1	1	1
1	1	2	2	2
1	3	3	5	5

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Lightable

PROJECT
**LAND ADJACENT 28
HORSEPOOL
BROMHAM**

DRAWING TITLE
**EXTERNAL LIGHTING
LUX PLOT LAYOUT**

DRAWING NO.
L0137-LTBL-DWG-001

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