



• LIGHTING DESIGN • ELECTRICAL • SMART CITIES •
ENERGY REDUCTION • LIGHTING IMPACT

ALCOCK CREST

LIGHTING STRATEGY

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Designs for Lighting (DFL) is a business built on successfully collaborating with our clients. We have over 20 years proven experience in our industry, listening to the challenges our clients face, developing the best solutions and being innovators in our specialism. Our role is to find the most effective and sustainable outcome to enhance and support your projects. We proudly work with recognised industry bodies to promote and shape the future of the industry and ensure our staff are trained to exceed the required competency levels of our industries. Above all, we ensure each project delivers against our values.



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1. INTRODUCTION

1.1. Executive Summary

- 1.1.1. This Lighting Strategy has been written by DFL (Designs for Lighting Ltd¹), a lighting design consultancy specialising in Lighting Impact Assessments, obtrusive light mitigation, and detailed lighting design.
- 1.1.2. The Lighting Strategy proposes good practice and outlines a suitable approach for the proposed lighting at Alcock Crest, Warminster, for the purpose of amenity and wayfinding. The lighting strategy is intended to set out a minimally obtrusive approach to the lighting, whilst ensuring it is necessary and considers the sensitivity of nearby human, environmental and ecological receptors.
- 1.1.3. Lighting associated with the Proposed Development will comply with relevant Institution of Lighting Professionals (ILP) guidance to ensure obtrusive light is minimised in accordance with best practice.
- 1.1.4. This report outlines the following:
- Relevant obtrusive light policies in direct relation to the Proposed Development;
 - Relevant National and Local Policies;
 - Why the Proposed Development requires artificial lighting; and
 - Details as to how lighting will be implemented for the Proposed Development.
- 1.1.5. It has been identified that the Application Site is set within a suburban location (E3).
- 1.1.6. Through careful design and mitigation, this Lighting Strategy ensures the lighting installation at the proposed development will be in accordance with Industry Guidance and Local Policy.
- 1.1.7. Local Policies 88, 91, 92, 93 and 98 of the Wiltshire Local Plan Pre-Submission Draft 2020 – 2038 (Regulation 19) published September 2023 have been addressed by directing light down, allowing no upward light and limiting mounting heights to prevent light spill on sensitive receptors. Furthermore, motion sensor controls ensure light is only on when required for a limited time. The luminaires being a warm colour temperature of 2700 Kelvin for the benefit of light sensitive species.

¹ <https://www.dfl-uk.com/about/>

2. LEGISLATIVE FRAMEWORKS AND NATIONAL POLICIES

2.1. Environmental Protection Act 1990 / Clean Neighbourhoods and Environment Act 2005

- 2.1.1. Since 2005, artificial light has been incorporated as a potential statutory nuisance. An amendment to section 79 of the Environmental Protection Act 1990, contained within the Clean Neighbourhoods and Environment Act 2005 states:

“The following matters constitute “statutory nuisances” for the purposes of this Part, that is to say— [...]

[...] artificial light emitted from premises so as to be prejudicial to health or a nuisance;

[...]and it shall be the duty of every local authority to cause its area to be inspected from time to time to detect any statutory nuisances which ought to be dealt with under section 80 and, where a complaint of a statutory nuisance is made to it by a person living within its area, to take such steps as are reasonably practicable to investigate the complaint”.

2.2. National Planning Policy Framework 2024 (Published 2025)

- 2.2.1. The National Planning Policy Framework (NPPF) sets out the government’s planning policies for England and how they are expected to be applied and provides a framework for local plans. With regard to light pollution, the NPPF was updated in February 2025 and states that the following elements are to be considered:

“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:

- > mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- > identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and*
- > limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.”*

2.3. Planning Practice Guidance

2.3.1. Guidance for assessing the effects of proposed artificial lighting is outlined in the planning practice guidance (PPG). The guidance states:

“Does an existing lighting installation make the proposed location for a development unsuitable, or suitable only with appropriate mitigation? For example, this might be because:

- *the artificial light has a significant effect on the locality; and/or*
- *users of the Proposed Development (e.g., a hospital) may be particularly sensitive to light intrusion from the existing light source.*

Where necessary, development proposed in the vicinity of existing activities may need to put suitable mitigation measures in place to avoid those activities having a significant adverse effect on residents or users of the proposed scheme, reflecting the agent of change principle. Additional guidance on applying this principle is set out in the planning practice guidance on noise.

- *Will a new development, or a proposed change to an existing site, be likely to materially alter light levels in the environment around the site and/or have the potential to adversely affect the use or enjoyment of nearby buildings or open spaces?*
- *Will the impact of new lighting conflict with the needs of specialist facilities requiring low levels of surrounding light (such as observatories, airports and general aviation facilities)? Impacts on other activities that rely on low levels of light such as astronomy may also be a consideration but will need to be considered in terms of both their severity and alongside the wider benefits of the development.*
- *Is the development in or near a protected area of dark sky or an intrinsically dark landscape where new lighting would be conspicuously out of keeping with local nocturnal light levels, making it desirable to minimise or avoid new lighting?*
- *Would new lighting have any safety impacts, for example in creating a hazard for road users?*
- *Is a proposal likely to have a significant impact on a protected site or species? This could be a particular concern where forms of artificial light with a potentially high impact on wildlife and ecosystems (e.g. white or ultraviolet light) are being proposed close to protected sites, sensitive wildlife receptors or areas, including where the light is likely to shine on water where bats feed.*
- *Does the Proposed Development include smooth, reflective building materials, including large horizontal expanses of glass, particularly near water bodies? (As it may change natural light, creating polarised light pollution that can affect wildlife behaviour.)”*

3. LOCAL POLICIES

3.1. Wiltshire Council, Wiltshire Local Plan Pre-Submission Draft 2020 – 2038 (Regulation 19).

- 3.1.1. The relevant Local Planning Authority (LPA) for the Proposed Development is Wiltshire Council, with policies detailed within the Wiltshire Local Plan Pre-Submission Draft 2020 – 2038 (Regulation 19) published September 2023 applying to the lighting associated with the Proposed Development.

The applicable policies are:

POLICY 88 Biodiversity and geodiversity

“Protection

Development proposals will need to clearly demonstrate how the mitigation hierarchy has been sequentially applied.

Development proposals must demonstrate how they protect features of nature conservation value, both terrestrial and aquatic, and geological value as part of the design rationale. There is an expectation that such features shall be retained, sufficiently buffered, and managed favourably to maintain their ecological value, connectivity and functionality in perpetuity. Furthermore, development proposals must secure and implement measures, including appropriate compensatory measures where necessary, to ensure no net loss of biodiversity and the local biodiversity resource, and to 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.

Biodiversity in the built environment

In addition to features required as part of biodiversity net gain, mitigation or compensation, all proposals are required to incorporate features of biodiversity value tailored to the specific proposals, relevant local receptors and in accordance with best practice to maximise potential benefits.

As a minimum, the following are required within new proposals:

- 1. integrate integral bird nest bricks (e.g., swift bricks) at a minimum of two per dwelling;*
- 2. provision of integrated bat boxes;*

(...) Other features that should be included (but are not limited to):

(...) 3. design site lighting to avoid harm and optimise nature conservation (e.g., designing in dark corridors)”

POLICY 91 Conserving and enhancing Wiltshire's landscapes

"Development will conserve and where possible enhance Wiltshire's landscapes by:

(...) 6. be located and designed to prevent erosion of relative tranquillity (light pollution and noise) and intrinsically dark landscapes, and use opportunities to enhance areas in which tranquillity have been eroded;"

POLICY 92 Conserving and enhancing dark skies

"Within an International Dark Sky Reserve and/or an Area of Outstanding Natural Beauty, development will only be supported where it conserves or enhances the intrinsic quality of dark skies. Development proposals must ensure that all opportunities to reduce light pollution are taken."

POLICY 93 Green and blue infrastructure

"Development shall make provision for the retention and enhancement of Wiltshire's green and blue infrastructure network and shall ensure that suitable links to the network are provided and maintained.

Proposals for major development will be required to:

- 1. retain and enhance the integrity, quantity, quality and connectivity of existing on site green and blue infrastructure;*
- 2. identify and incorporate opportunities for the creation and extension of the green and blue infrastructure network, ensuring new and existing green and blue infrastructure is well integrated, enhancing strategic connectivity whilst maximising wildlife and ecosystem services"*

POLICY 98 Ensuring high quality design and place shaping

"A high standard of design is required in all new developments, including extensions, alterations, and changes of use of existing buildings. This will be achieved through:

(...) viii having regard to the compatibility of existing land and building uses in the vicinity of the proposed development, the impact of the development on the amenities of existing occupants, and ensuring that appropriate levels of amenity are achievable within the development itself, including the consideration of vehicle parking, access and movement, internal and external space standards, private outdoor space, waste storage and collection, privacy, overshadowing, mass and height (overbearing), vibration, and pollution (e.g. light intrusion, noise (including vibration), smoke, odour, fumes, effluent, waste or litter)"

4. BRITISH STANDARDS

4.1. Standards

- 4.1.1. Lighting associated with the Proposed Development is required for amenity and wayfinding purposes only. Therefore, to minimise potential effects of light on sensitive receptors, there are no applicable British Standards for light deemed appropriate, for areas where lighting is required.

5. GUIDANCE

5.1. Guidance Notes for the Reduction of Obtrusive Light (Institution of Lighting Professionals GN01/2021)

5.1.1. The Lighting Strategy is informed by industry guidance notes which aim to reduce the potential for obtrusive light to occur, which is typically caused by poorly designed and installed exterior artificial lighting. The Lighting Strategy is informed by the most relevant sections of GN01/2021 published to reduce the potential for obtrusive light from a wide range of exterior lighting applications.

Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA Dark Sky Parks.
E1	Natural	Intrinsically dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, etc.
E2	Rural	Low district brightness (SQM ~ 15 to 20)	Sparsely inhabited rural areas, Village or relatively dark outer suburban locations.
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres or suburban locations.
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity.

Table 1: Environmental Zone Descriptions

Environmental Zones	Sky Glow ULR ² (Max %)	Light Trespass (Into Windows) E _v (lux)		Building Luminance Average, Pre-curfew
		Pre- Curfew	Post-Curfew ³	Average L (cd/m ²)
E0	0	0	0	0
E1	0	2	0.1 (1 ⁴)	0
E2	2.5	5	1	5
E3	5	10	2	10
E4	15	25	5	25

Table 2: Obtrusive Light Criteria

² ULR (Upward Light Ratio) is the maximum permitted percentage of luminaire flux that goes directly into the sky.

³ Curfew refers to a time when the local planning authority has agreed that the lighting installation should be switched off; this typically refers to 23h00 – 07h00

⁴ If the installation is for public (road) lighting then this may be up to 1 lx

5.2. GN08/2023 Bats and Artificial Lighting in the UK – Bat Conservation Trust and Institution of Lighting Professionals.

- 5.2.1. 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. However, it is not meant to replace site-specific ecological and lighting assessments, which states the following.

"It is acknowledged that, especially for vertical calculation planes, very low levels of light (<0.5 lux) may occur even at considerable distances from the source if there is little intervening attenuation. It is therefore very difficult to demonstrate 'complete darkness' or a 'complete absence of illumination' on vertical planes where some form of lighting is proposed on site despite efforts to reduce them as far as possible and where horizontal plane illuminance levels are zero. Consequently, where 'complete darkness' on a feature or buffer is required, it may be appropriate to consider this to be where illuminance is below 0.2 lux on the horizontal plane and below 0.4 lux on the vertical plane. These figures are still lower than what may be expected on a moonlit night and are in line with research findings for the illuminance found at hedgerows used by lesser horseshoe bats, a species well known for its light adverse behaviour (Stone, 2012)."

"A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component."

*"A buffer zone subdivided to into smaller zones of increasing illuminance limit further away from the Supporting Habitat would ensure light levels (illuminance - measured in lux) do not exceed certain defined limits. This has the effect of a gradual decrease in lighting from the developed zone, rather than a distinct cut-off, which may provide useable area for the project which also limits lighting impacts on less sensitive species, or less well-used habitat." (see **Figure 1**)."*

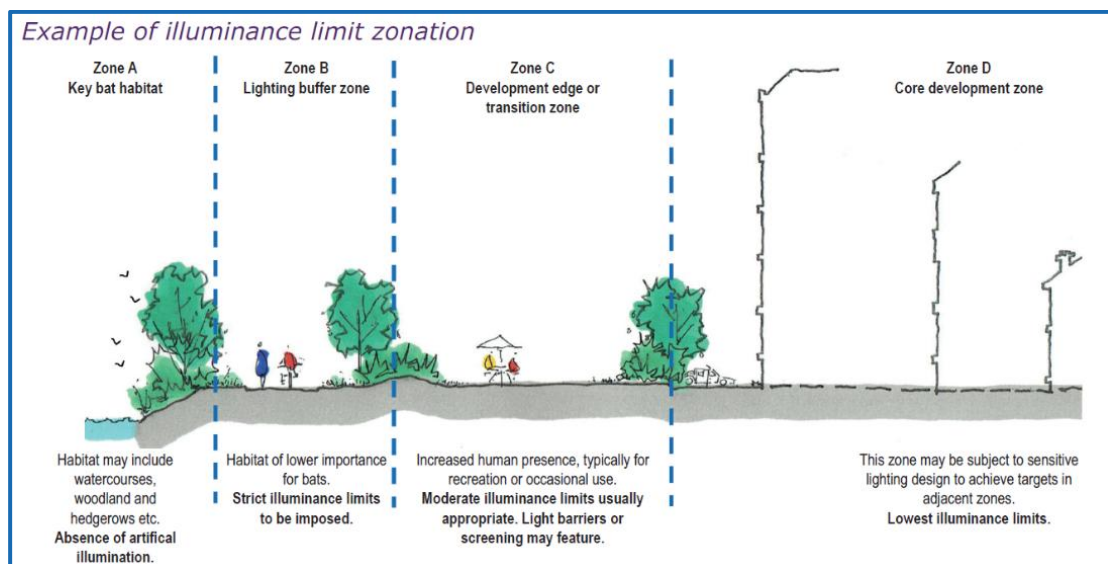


Figure 1: Example of lighting zonation near sensitive boundaries and known ecological habitat

6. DESKTOP STUDY

6.1. Site Description and Context

- 6.1.1. A desktop assessment was completed to understand its position within the current lit environment.
- 6.1.2. The Application Site is currently occupied by two apartment blocks containing 34 flats, surrounded by lawned garden with scattered trees throughout the site and a solid belt of mature trees on the southern boundary. A public footpath runs through the centre of the Proposed Development from north to south between the two apartment blocks. A hardstanding car park area is located on the western boundary of the site. An indicative boundary of the site and proposed layout can be seen in **Figure 2**.



Figure 2: The Application Site location and boundary

6.1.3. The Proposed Development is for the erection of 14No. affordable residential units following demolition of existing flats and associated works. The Site Layout Plan is shown in **Figure 3**.



Figure 3: Proposed Development Site layout plan

6.2. Designations

6.2.1. The area is within 2 km proximity of a designated National Landscape (formerly AONB) this is shown in **Figure 4** and referenced as.

- *Cranborne Chase and West Wiltshire Downs National Landscape – within 1.7 km to the west and 1.2 km to the south of site.*

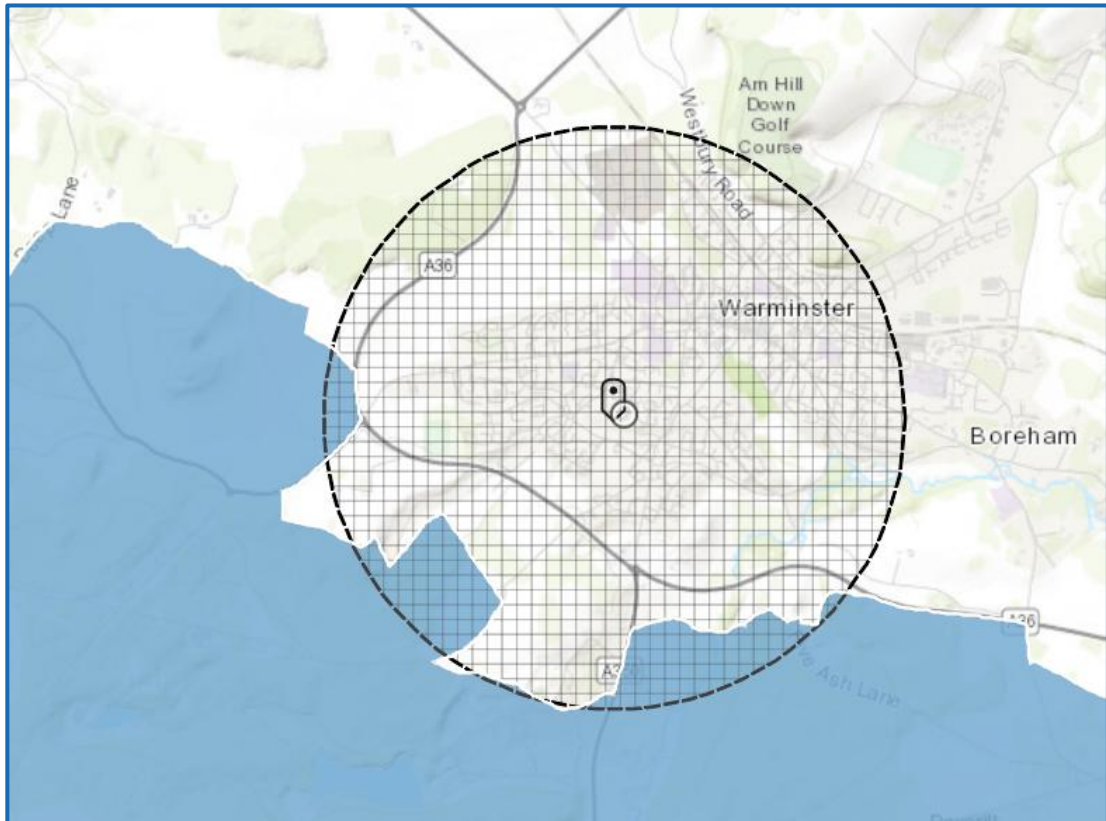


Figure 4: Site designation

6.3. Existing lighting

- 6.3.1. The area surrounding the Application Site is predominantly suburban residential. All streets in the vicinity have council provided street lighting with column heights ranging from 5 – 6m on residential roads and up to 8m on traffic routes. There is a business park to the north situated between Factory Lane and Beech Avenue with associated external security floodlighting, but the site is relatively small and is enclosed by residential development.
- 6.3.2. The area immediately adjacent to the southern boundary is dark in nature with no artificial lighting. The development itself is located at the top of a bank with the land sloping away to the south. The southern boundary is lined with a belt of mature trees with areas of grassland, scrub, woodland and a public park beyond, as seen in **Figure 5**.



Figure 5: View of the existing site from Brook Street to the southeast.

6.4. Environmental Zone Classification

- 6.4.1. Based on the evidence of the existing lighting (seen in Section 6.3) and the description of the surrounding environment (seen in Section 6.2) are similar to those expected within an E3 zone.
- 6.4.2. The Environmental Zone criteria detailed within **Table 1** and **Table 2** informs the basis of the Lighting Strategy. The Application Site is considered to be located within an E3 Environmental Zone.

Zone	Surrounding	Examples	Limitations		Sky Glow ULR (Max)
			Pre-curfew	Post-curfew	
E3	Suburban	Well inhabited rural and urban settlements, small town centres or suburban locations.	10	2	5%

Table 3: Limitations of identified environmental zone.

7. IDENTIFIED RECEPTORS

7.1. Ecological

- 7.1.1. It has been assumed based on the available topographic view, that the areas to south and through the centre of the site are likely to be ecologically sensitive. The visual location of these areas can be seen in **Appendix 3**.
- 7.1.2. A description of the potential ecological receptors, as well as their likely sensitivity to light based on the desktop assessment of the surrounding environment, can be seen in **Table 4**.

Receptor Type	Receptor No. (Appendix 3)	Description
Ecology	PSER 001	Treeline adjacent to southern boundary.
Ecology	PSER 002	Treeline through the centre of the site alongside the public right of way.

Table 4: Potentially Sensitive Ecological Receptors (PSER)

7.2. Human Amenity

- 7.2.1. To the west, north and east of the site, Potential Human Amenity Receptors (PHAR) have been identified as shown in **Appendix 3**. Therefore, this lighting strategy has been written in accordance with GN01/2021 (Table 2 - Obtrusive Light Criteria).
- 7.2.2. A description of the potential human receptors and their likely sensitivity to light can be seen in **Table 5**.

Receptor Type	Receptor No. (Appendix 3)	Description
Human Amenity	PHAR 001	Residential dwellings to the west of site located on Alcock Crest.
Human Amenity	PHAR 002	Residential dwellings to the north of site located on Alcock Crest.
Human Amenity	PHAR 003	Residential dwellings to the east of site located on Alcock Crest.

Table 5: Potential Human Amenity Receptors (PHAR)

8. LIGHTING STRATEGY

8.1. Summary

- 8.1.1. The Proposed Development will require lighting for safety and amenity at limited times during the hours of darkness. Lighting will be fit for purpose and sensitive to nearby human and ecological receptors.
- 8.1.2. Amenity lighting for the Proposed Development will be applied sensitively to account for the receptors identified bounding the Application Site and within the Proposed Development.
- 8.1.3. Luminaires will be used with integral LEDs and only where the luminaire photometry is available from the manufacturer. This is to ensure the photometric footprint of the luminaires can be modelled to ensure the potential effects of light spill are minimised or mitigated.
- 8.1.4. The following criteria seeks to ensure that the lighting is not outside of the obtrusive light limits for the Environmental Zone in which the Application Site is located and is sensitive to the area only lighting the areas requiring illumination. Luminaires will distribute light downwards only to reduce the potential for light spill onto the boundaries surrounding the buildings and upwards towards the sky.
- 8.1.5. All lighting unless otherwise stated is to emit a warm white colour temperature light (2700 Kelvin or less) to reduce the potential for adverse effects onto potentially sensitive receptors.
- 8.1.6. Lighting will be required in the following task areas:
 - Property Fronts and Rears

8.2. Property Fronts and Rears

- 8.2.1. The Property Fronts and Rears will be illuminated for safety, security and wayfinding purposes only and not in accordance with any British Standard. Light output has been controlled by restricting the mounting heights and the use of motion sensor controls as detailed in **Table 6**. The lowest possible lighting levels are proposed within this Lighting Strategy.
- 8.2.2. Luminaires will distribute light downwards only, to reduce the potential for light spill onto the boundaries surrounding the building and upwards towards the sky.
- 8.2.3. Luminaire performance requirements are outlined in **Table 6**.

Equipment Specification	
Application Area	Property Fronts and Rears
Correlated Colour Temperature (Kelvin)	≤ 2700 K
Lumen Output	≤ 300 Lumens
Height	≤ 2 Mtrs
Mounting Arrangement	Wall mounted
Luminaire Tilt	0°
Upward Light Output Ratio E3 < 5%	0%
Luminaire Manufacturer	Ligman (Or Similar Approved)
Luminaire family	Jet
Example Luminaire Image	
Light Spill Diagram reference	Type A
Controls ⁵	Off unless movement detected, PIR on for two minutes when motion is detected.

Table 6: Luminaire performance requirements

⁵ Dimming: when dimming is applied it is announced as a percentage still in use of the total percentage output (dimmed too, not dimmed by).

9. SUMMARY OF RESULTS

9.1. Overview

- 9.1.1. The Light Spill Diagram shown in **Appendix 1** and **2** demonstrates that the Light Spill Levels associated with the proposed lighting would comply with the obtrusive light guidance set out in ILP GN01/2021, at sensitive receptors.
- 9.1.2. To ensure the worst-case scenario has been modelled, the highest potential light levels have been modelled / presented in the light spill diagram, with the project maintenance factors set at MF = 1.0⁶. This demonstrates the light levels at their highest (initial light levels at the start of luminaire life).

9.2. Summary of Results

- 9.2.1. The proposed lighting within the task area(s) is compliant to the relevant policies and guidance.
- 9.2.2. Where ecological receptors are potentially sensitive to vertical light spill, a vertical illumination grid has been modelled, as shown in **Appendix 2**. The light levels based on the modelling do not exceed 0.4 Lux, keeping the light levels within the guidance given within GN08/2023.
- 9.2.3. In line with section 4.56 of GN08/2023, the vertical grids will be mounted at a height of 1.5 metres above the ground level to simulate the likely flight path of a light sensitive bat. The results are shown in **Table 7**.

Receptor No	GN08/2023 requirements	Maximum vertical Illuminance (Lux)	Pass/fail
PSER 001	0.40	0.00	Pass
	0.40	0.00	Pass
PSER 002	0.40	0.00	Pass

Table 7: PSER results table, maximum illuminance.

- 9.2.4. Where human receptors are potentially sensitive to vertical light spill, a vertical illumination grid has been modelled, as shown in **Appendix 2**. The light levels based on the modelling do not exceed 2 Lux, keeping the light levels within the guidance given within GN01/2021 for an area identified as an E3 environment. The results are shown in **Table 8**.

⁶ <https://www.dfl-uk.com/knowledge-hub/faqs/>

Receptor No	GN01/2021 requirements		Maximum vertical Illuminance (Lux)	Pass/fail
	Pre-curfew	Post Curfew		
PHAR 001	10 Lux	2 Lux	0.00	Pass
PHAR 002	10 Lux	2 Lux	0.06	Pass
PHAR 003	10 Lux	2 Lux	0.00	Pass

Table 8: PHAR results table, maximum illuminance

9.3. Mitigation and Enhancements

- 9.3.1. Careful design ensures the lighting has been minimised onto sensitive receptors in accordance with standards and guidance.
- 9.3.2. Through the use of the control methods detailed in **Table 6**, it limits the amount of light in the affected Application Area to minimum amount of time for amenity and safety purposes.
- 9.3.3. The detailed design is to be completed by a competent person or persons in accordance with the details within this Lighting strategy.

10. CONCLUSION

10.1. General

- 10.1.1. Lighting associated with the Proposed Development shall be designed in accordance with the Lighting Strategy for the Application Site outlined in **Section 8**.
- 10.1.2. This lighting strategy has been written in accordance with the relevant industry guidance and local policies to ensure it is unlikely to give rise to obtrusive light with the potential to affect human, environmental and ecological receptors.
- 10.1.3. Through the application of this lighting strategy sensitive receptors will not be adversely affected by obtrusive light, as shown in **Appendix 1** and **2**.
- 10.1.4. Through careful design and mitigation, including limiting mounting heights, allowing no upward light and restricting lighting to a specific task area, this Lighting Strategy ensures the lighting installation at the proposed development will be in accordance with Industry Guidance (GN01/2021 and GN08/2023) and Local Policies (Policies 88, 91, 92, 93 and 98 of Wiltshire Local Plan Pre-Submission Draft 2020 - 2038).

APPENDIX 1 – LIGHT SPILL DIAGRAM

See accompanying document 3804-DFL-ELG-XX-LD-EO-13001-S3

APPENDIX 2 – VERTICAL LIGHT SPILL DIAGRAM

See accompanying document 3804-DFL-ELG-XX-LD-EO-13002-S3

APPENDIX 3 – SENSITIVE RECEPTORS



Figure 6: Sensitive receptors

TECHNICAL DESCRIPTIONS, DEFINITIONS AND ABBREVIATIONS

PHAR: is an abbreviation for a potential human amenity receptor, a location where an observer could have the potential to be affected by the proposed lighting to be installed *Abbreviation used by DFL LI and P.*

PSER: is an abbreviation for an area identified as or treated as a location that may host a potentially sensitive ecological receptor. This is generally used where light sensitive bats have the potential to live, forage or use as a flight path, other ecologically sensitive receptors such as (but not limited to) the Great Crested Newt may also be identified by this term. *Abbreviation used by DFL LI and P.*

PSR: is an abbreviation for an area where an individual maybe susceptible to light brightness (Light intensity) which may have the potential to cause a hazardous situation. *Abbreviation used by DFL LI and P.*

Obtrusive Light: refers to excessive or bothersome artificial light that goes where it shouldn't, causing discomfort and disruption. *Spill light which because of quantitative, directional or spectral attributes in a given context gives rise to annoyance, discomfort, distraction or reduction in the ability to see essential information.* CIBSE LG21 Lighting Guide 21: Protecting the night-time environment.

Sky glow: When lights are directed upwards or light is scattered by particles in the air, like dust or water droplets, it creates a glow that makes it hard to see stars. *The increase in diffuse illuminance of the night sky above that produced by natural sources such as the moon and visible star.* CIBSE LG21 Lighting Guide 21: Protecting the night-time environment.

Vertical Illuminance: is how much light lands on upright surfaces like walls. It's measured in lux or footcandles and matters for places where the view from a vertical angle is important. *Lighting of vertical surfaces such as walls, windows, statues, sculptures and people's faces.* CIBSE LG21 Lighting Guide 21: Protecting the night-time environment.

Correlated colour temperature (CCT): the appearance of light emitted by a light source measured in Kelvin (K), Lower CCT values such as 2700K represent warmer, more yellowish light, *similar to the light from older incandescent lamps. (Tcp)The temperature of the Planckian radiator whose perceived colour most closely resembles that of a given stimulus at the same brightness and under specified viewing conditions, measured in absolute temperature on the kelvin (K) scale.* CIBSE LG21 Lighting Guide 21: Protecting the night-time environment.

Lux: measures the brightness of light as perceived by the human eye at a specific point on a surface. *The SI derived unit of illuminance, measuring luminous flux per unit area (1 lux = 1 lumen/m²).* CIBSE LG21 Lighting Guide 21: Protecting the night-time environment.

Lumens: measure how bright a light appears to our eyes. *The SI derived unit of luminous flux; a measure of the total quantity of visible light emitted by a source or received by a surface (unit: lumen).* CIBSE LG21 Lighting Guide 21: Protecting the night-time environment.

Glare: refers to an excess of bright light that makes you uncomfortable or hinders your vision. It happens when there's a big difference between a bright light and the rest of the surroundings. *Glare: condition of vision in which there is discomfort or a reduction in the ability to see details or objects, caused by an unsuitable distribution or range of luminance, or by extreme contrasts.* BS EN 12665-2018, Light and lighting - Basic terms and criteria for specifying lighting requirements, Section 3.1.8

Luminous intensity: is light brightness or how intense the light source is. light intensity is how intense a light source is emitted or received in a particular direction, this is measured candelas and is termed as luminous intensity I_v <of a source, in a given direction> quotient of the luminous flux, $d\Phi_v$, leaving the source and propagated in the element of solid angle $d\Omega$ containing the given direction, by the element of solid angle (unit: $cd = lm \cdot sr^{-1}$). BS EN 12665-2018, Light and lighting - Basic terms and criteria for specifying lighting requirements, Section 3.2.2.

Candela: is a measurement for the brightness of a light source, taking into account the direction in which the light is emitted. Base unit of luminous intensity in the International System of Units (SI); the luminous power per unit solid angle emitted by a point light source in a particular direction. CIBSE LG21 Lighting Guide 21: Protecting the night-time environment.

Uniformity (Uo): is an explanation for the even distribution of light across an area or surface. The overall uniformity shall be calculated as the ratio of the lowest luminance, occurring at any grid point in the field of calculation, to the average luminance. BS EN 13201-3-2015, Calculation of Performance Section 8.3.

Luminance: is how bright a surface appears to our eyes. It considers the light coming from or reflected by an object. L_v <in a given direction, at a given point of a real or imaginary surface> quantity defined by the formula (unit: $cd \cdot m^{-2} = lm \cdot m^{-2} \cdot sr^{-1}$) BS EN 12665-2018, Light and lighting - Basic terms and criteria for specifying lighting requirements, Section 3.2.3.

Illuminance is how much light lands on a surface per square meter. It's measured in lux. More lux means a brighter area. E_v (unit: $lx = lm \cdot m^{-2}$) 1. <at a point of a surface> quotient of the luminous flux $d\Phi_v$ incident on an element of the surface containing the point, by the area dA of that element 2. <at a point of a surface> equivalent definition: integral, taken over the hemisphere visible from the given point, of the expression. BS EN 12665-2018, Light and lighting - Basic terms and criteria for specifying lighting requirements, Section 3.2.10.

Luminaire: a light fixture, this is also sometimes referred to as a lantern or a light fitting, is a product that produces artificial light. apparatus which distributes, filters or transforms the light transmitted from one or more lamps and which includes, except the lamps themselves, all the parts necessary for fixing and protecting the lamps and, where necessary, circuit auxiliaries together with the means for connecting them to the electric supply BS EN 12665-2018, Light and lighting - Basic terms and criteria for specifying lighting requirements, Section 3.3.3

ULOR: upward light output ratio or ULOR refers to the amount of light the light fixture will produce upwards as a percentage of its total light output. $RULO$ <of a luminaire> ratio of the upward luminous flux of the luminaire, measured under specified practical conditions with its own lamp(s) and equipment, to the sum of the individual luminous fluxes of the same lamp(s) when operated outside the luminaire with the same equipment, under specified conditions BS EN 12665-2018, Light and lighting - Basic terms and criteria for specifying lighting requirements, Section 3.3.12.

Maintenance factor (MF): is an allowance for how well the lights keep working overtime. It considers things like dirt on the light fittings and "wear and tear". DEPRECATED: light loss factor ratio of illuminance produced by the lighting installation after a certain period to the illuminance produced by the installation when new Note 1 to entry: The term depreciation factor has been formerly used to designate the reciprocal of the above ratio. Note 2 to entry: The maintenance factor takes into account light losses caused by dirt accumulation on luminaires and room surfaces (in interiors) or other relevant surfaces (in exteriors, where appropriate), and the decrease of the luminous flux of lamps. BS EN 12665-2018, Light and lighting - Basic terms and criteria for specifying lighting requirements, Section 3.5.18.

Tilt: is how much the luminaire is lifted based on the fitting facing flat to the ground.

Outreach: how far away the fitting is from the column/wall its mounted on to the light source.

This isn't the end...

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