



• LIGHTING DESIGN • ELECTRICAL • SMART CITIES •
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CHICKLADE SERVICE STATION

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.



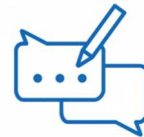
Quality



Knowledgeable



Dependable



Clear Advice

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EXECUTIVE SUMMARY

This Lighting Strategy has been prepared to support the proposed development of an overflow car park at Chicklade Service Station, Wiltshire. The strategy has been developed in accordance with the National Planning Policy Framework, Wiltshire Local Plan, Wiltshire Core Strategy, Cranborne Chase National Landscape guidance, BS 5489-1:2020, BS EN 13201-2:2015, ILP GN01:2021 and GN08:2023.

The Application Site is located within the Cranborne Chase National Landscape and is considered to be within Environmental Zone E0. Accordingly, the proposed lighting has been designed to minimise obtrusive light, protect dark skies and limit potential effects on the surrounding landscape. All proposed luminaires utilise a correlated colour temperature of no greater than 2700K and have been selected and positioned to direct light downwards only, minimising upward light and unnecessary spill beyond the Application Site.

The proposed lighting is limited to the roadway and car park areas required for the safe movement of both vehicles and pedestrians during the hours of darkness. The lighting design has been developed in accordance with BS EN 12464-2:2024 and incorporates low mounting heights, controlled photometric distributions and a lighting control regime based on passive infrared (PIR) detection. During periods of inactivity, luminaires will operate at a reduced output of 20%, increasing only when movement is detected, thereby ensuring lighting is available when required for safety whilst minimising energy consumption, light spill and impacts on the surrounding dark sky environment.

The proposed development is located within a cut-and-fill landform and sits up to approximately 6 metres below the surrounding ground levels along the northern boundary of the site. This topographical containment acts as a natural barrier to light spill, reducing the visibility of the lighting from the wider landscape and assisting in the protection of dark skies within the Cranborne Chase National Landscape.

A review of the available ecological information confirms the absence of roosting bats on site and identifies only low ecological sensitivity within the immediate surroundings. No potentially sensitive human amenity receptors have been identified. The lighting strategy is therefore not anticipated to result in unacceptable effects on ecological or human receptors.

Based on the assessment undertaken and the mitigation measures incorporated into the design, the proposed lighting is considered compliant with the relevant policies, standards and guidance and is unlikely to give rise to unacceptable levels of obtrusive light beyond the Application Site boundary. The proposed development is therefore considered compatible with the protection of dark skies, landscape character and local amenity within the Cranborne Chase National Landscape.

1. INTRODUCTION

1.1. General

- 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 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 British Standards and 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. Through careful design and mitigation, this Lighting Strategy ensures the lighting installation at the Proposed Development will be in accordance with British Standards, Guidance and Local Policy.

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: ²

"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 (Amended 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 considered⁴:

"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 <https://www.legislation.gov.uk/ukpga/1990/43/part/III/crossheading/statutory-nuisances-england-and-wales> Section 79, paragraph 1,

³ 2005 Section 102 relating to section 79, Indent reference (fb)

⁴ Paragraph 198 NPPF 2024 page 57

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:⁵

“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.)”*

⁵ <https://www.gov.uk/guidance/light-pollution>, Paragraph 002 Ref ID: 31-002-20191101 revision 01 11 2019

3. LOCAL POLICIES

3.1. Wiltshire County Council

- 3.1.1. The relevant Local Planning Authority (LPA) for the Proposed Development is the Wiltshire County Council, with policies detailed within the Local Plan (Pre-Submission Draft 2020-2038 (Regulation 19) – September 2023) and Wiltshire Core Strategy (Adopted 2015) applying to the lighting associated with the Proposed Development. This Strategy is also informed by the Cranborne Chase National Landscape Partnership Plan 2025 – 2030

The applicable policies are:

WILTSHIRE COUNTY COUNCIL LOCAL PLAN

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:

- i. enhancing local distinctiveness by responding to the value of the natural and historic environment, relating positively to its landscape setting and the existing pattern of development and responding to local topography by ensuring that important views into, within and out of the site are to be retained and enhanced;*
- ii. the retention and enhancement of existing important landscaping and natural features, (e.g. trees, hedges, banks and watercourses), in order to take opportunities to enhance biodiversity, create wildlife and recreational corridors, effectively integrate the development into its setting and to justify and mitigate against any losses that may occur through the development;*
- iii. responding positively to the existing townscape and landscape in terms of the distinctive local characteristics of the built form (i.e. the layout of blocks, streets, plots and buildings' scale, mass, height, build-line), and appearance (i.e. elevational composition, articulation, detailing and materials) and where a distinct change in character is proposed this must be explained and justified in the Design and Access Statement;*
- iv. being sympathetic to and conserving historic buildings and historic landscapes;*
- v. taking all opportunities for incorporating sustainable building design by following the energy hierarchy i.e. reducing the need for energy (e.g. for home heating or cooling), being more efficient with energy, and maximising the use of renewable energy (e.g. installing photovoltaics, and orienting facades, roofs and amenity spaces to receive optimal benefit from sunlight and solar gain) in accordance with the Wiltshire Climate Strategy;*
- vi. making efficient use of land whilst taking account of the local context (including, where applicable, density standards in local design guidance and local transport infrastructure and strategies) and of any distinctive characteristics, constraints and opportunities of the site itself;*

- vii. the inclusion of tree-lined streets and taking the opportunities to include trees elsewhere in developments i.e., parks, orchards, integrated with sustainable drainage systems;*
- 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);*
- ix. incorporating design features to reduce actual or perceived opportunities for crime and antisocial behaviour on the site and in the surrounding area through the design of the new streets, buildings and spaces including the use of building frontages with windows and doors located to assist in the informal surveillance of public and shared areas;*
- x. ensuring that the public realm, including new streets, public open spaces and other rights of way, are designed to create places of character which are legible, safe and accessible, with the integration of art and design in the public realm;*
- xi. the sensitive design of shop frontages, advertisements and signage, which are appropriate and sympathetic to their local setting by means of scale, design, lighting and materials, having regard to local design guidance, where applicable;*
- xii. taking account of the needs of potential users, with regard to accessibility and inclusivity, and considering how space and buildings will be used in the immediate and long-term future;*
- xiii. the use of high standards of materials and finishes for: buildings (e.g. appropriate form, colour and characteristic weathering); external spaces and hard landscaping (e.g. boundaries, paths, street materials and retaining structures), and all street furniture (e.g. seating and signage); and having regard to any local design guidance, where applicable.*

WILTSHIRE CORE STRATEGY

Core Policy 51

Landscape

Development should protect, conserve and where possible enhance landscape character and must not have a harmful impact upon landscape character, while any negative impacts must be mitigated as far as possible through sensitive design and landscape measures. Proposals should be informed by and sympathetic to the distinctive character areas identified in the relevant Landscape Character Assessment(s) and any other relevant assessments and studies. In particular, proposals will need to demonstrate that the following aspects of landscape character have been conserved and where possible enhanced through sensitive design, landscape mitigation and enhancement measures:

- i. The locally distinctive pattern and species composition of natural features such as trees, hedgerows, woodland, field boundaries, watercourses and waterbodies.*
- ii. The locally distinctive character of settlements and their landscape settings.*

iii. The separate identity of settlements and the transition between man-made and natural landscapes at the urban fringe.

iv. Visually sensitive skylines, soils, geological and topographical features.

v. Landscape features of cultural, historic and heritage value.

vi. Important views and visual amenity.

vii. Tranquillity and the need to protect against intrusion from light pollution, noise, and motion.

viii. Landscape functions including places to live, work, relax and recreate.

ix. Special qualities of Areas of Outstanding Natural Beauty (AONBs) and the New Forest National Park, where great weight will be afforded to conserving and enhancing landscapes and scenic beauty.

Proposals for development within or affecting the Areas of Outstanding Natural Beauty (AONBs), New Forest National Park (NFNP) or Stonehenge and Avebury World Heritage Site (WHS) shall demonstrate that they have taken account of the 269 objectives, policies and actions set out in the relevant Management Plans for these areas. Proposals for development outside of an AONB that is sufficiently prominent (in terms of its siting or scale) to have an impact on the area's special qualities (as set out in the relevant management plan), must also demonstrate that it would not adversely affect its setting.

CRANBORNE CHASE NATIONAL LANDSCAPE PARTNERSHIP PLAN 2025 – 2030

Policy DNS1 All stakeholders should actively seek to retain International Dark Sky Reserve status through evidencing annual reductions in light pollution through continuous improvements to new lighting or retrofitting schemes. Lighting schemes should be kept to a minimum and only installed where it is necessary.

Policy DNS2 Proposals that are likely to impact on the dark skies and tranquillity of the National Landscape should be delivered in a way that is compatible with, and seek to further, the conservation and enhancement of these dark skies, by seeking to avoid and, where avoiding is not possible, minimise lighting.

Policy DNS3 Actively promote the benefits of International Dark Sky Reserve (IDSR) status to all partners and communities to elicit appropriate action and support for the IDSR.

Fact Sheets & Good Practice Notes

The AONB fact sheets and good practice notes provide information on topics of relevance to landscape and planning within the AONB. Current documents provide information on Section 85 duties, the Local Development Framework, the European Landscape Convention and Historic Landscape Characterisation.

Good Practice 7 - Good External Lighting

Good Practice 7a(i) - Recommendations for Dark-Sky compliant lighting on new builds & refurbishments - a Developers' Guide (being updated 2026)

Good Practice 7b(i) - Examples of Dark Sky compliant lighting units for use on new builds and refurbishments in and around the AONB area. (being updated 2026)

Cranborne Chase and West Wiltshire Developers Guide

Lighting has been designed in accordance with Cranbourne Chase best Design practise no greater than 2700K CCTs.

3.2. Unadopted Roads

- 3.2.1. Whilst the roads and paths within the Application Site will be privately maintained, they will be designed to an adoptable class and compliant with the relevant British Standards.
- 3.2.2. Whilst the Application Site will be privately maintained, the proposed lighting design has been developed in accordance with the Cranborne Chase National Landscape dark sky guidance. To minimise the impact of artificial lighting on the night-time environment and preserve the quality of the dark skies, all proposed luminaires will utilise a correlated colour temperature of no greater than 2700K.

4. BRITISH STANDARDS

4.1. BS 5489-1:2020 - Lighting of Roads and Public Amenity Areas - Code of practice.

- 4.1.1. This standard gives recommendations on the general principles of road lighting, its aesthetics, technical aspects and provides guidance on operational maintenance. It also provides guidance on means of minimizing energy consumption and limiting the impacts on the environment and adjacent properties.

4.2. BS EN 13201-2:2015 - Road lighting. Performance requirements.

- 4.2.1. This British and European standard defines the performance requirements specified as lighting classes for road lighting aiming at the visual needs of the road users, as well as the consideration of the environmental aspects of the road lighting to be applied.

5. GUIDANCE

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

5.1.1. The Lighting Strategy has been developed in accordance with industry guidance aimed at minimising the risk of obtrusive light, which often results from poorly designed or installed external lighting. It draws specifically on the most relevant sections of GN01:2021, which provides best practice recommendations for reducing obtrusive light across a wide range of outdoor 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 ⁷ (Max %)	Light Trespass (Into Windows) E _v (lux)		Building Luminance Average, Pre-curfew
		Pre-Curfew	Post-Curfew ⁸	Average L (cd/m ²)
E0	0	0	0	0
E1	0	2	0.1 (1 ⁹)	0
E2	2.5	5	1	5
E3	5	10	2	10
E4	15	25	5	25

Table 2: Obtrusive Light Criteria

6 Areas of Outstanding Natural Beauty (AONBs) have been redefined as National Landscapes. References within ILP GN01:2021 to AONBs should therefore be interpreted accordingly. This documentation will be updated in line with this change in future ILP guidance revisions as they are published.

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

8 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

9 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.

5.2.2. Based on the information provided the following limitations are recommended:

- Horizontal light levels are not exceeding 0.2 lux¹⁰
- Vertical light levels are not greater than 0.4 lux between 1.5mtrs and 6.5 mtrs above ground level¹¹
- Correlated Colour Temperature (CCT) will be equal to or less than 2700K¹²

5.2.3. Where standardised mitigation is to be used, the Bat Conservation Trust Guidance (BCT), Landscape and urban design for bats and biodiversity¹³ is consulted using the following methods in conjunction with ILP guidance (GN08).

- Minimum light for safety is to be used (as per British Standards or relevant guidance documents)
- Flat cut-off lanterns are to be proposed
- The most appropriate narrow spectrum light will be used avoiding blue wavelengths (less than 2700K)
- Pedestrian lighting in close proximity will be targeted below 3 Lux
- Increased lantern spacing
- Lighting of only high risk stretches of roads allowing headlights to provide necessary illumination at other times
- Limiting the times of use to provide dark periods
- Use of temporary close-boarded fencing until vegetation matures shielding sensitive areas from lighting
- Deployment of hop-over at crown height, hop over vegetation, hop over vegetation and walls and viaduct bridges

5.2.4. Whilst lighting will be designed to comply with the GN08:2023 criteria for creation of a dark corridor (horizontal of 0.2 lux (max) and vertical of 0.4 lux (max)) any break in a foraging route will either be reconnected, diverted or mitigated where possible.

10 GN08:2023 Paragraph 4.54 page38.

11 GN08:2023 paragraph 4.56 page 39 for 1.5m height, 6.5m height based on the underside of an established tree canopy.

12 GN08:2023 paragraph 4.29 page 29, BCT Bats and Lighting, Overview of current evidence and Mitigation paragraph 3.1.1 page 22.

13 BCT Landscape and Urban design for bats and biodiversity page 28 and page 29.

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 an overflow car park for Chicklade Service Station, located adjacent to the A303 at Chicklade, Wiltshire. Service Station consists of a proposed roadside service facility providing fuel, retail and associated amenities for motorists travelling along this strategic transport corridor. The surrounding area is predominantly rural in character, comprising agricultural land, areas of vegetation and scattered development associated with the local highway network. An indicative boundary of the overflow car park can be seen in **Figure 1**.

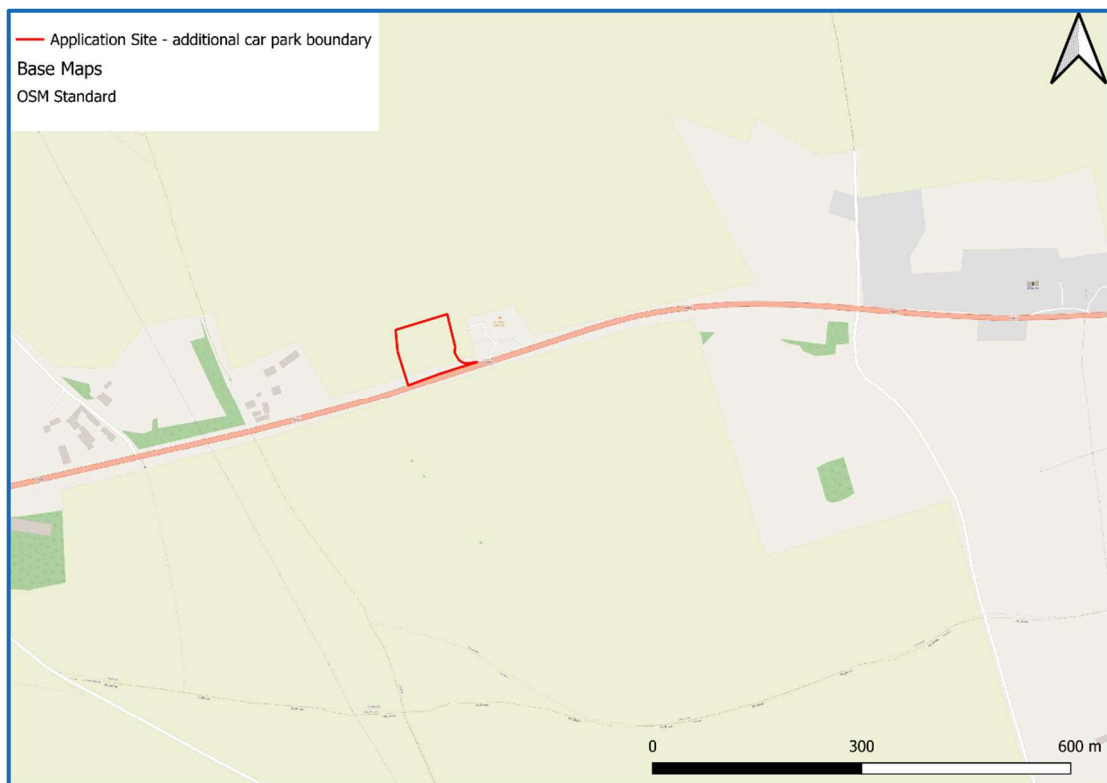


Figure 1: The Application Site Location and Boundary

6.1.3. The Proposed Development is for additional parking – east of the main entrance. The Site Layout Plan is shown in **Figure 2**.

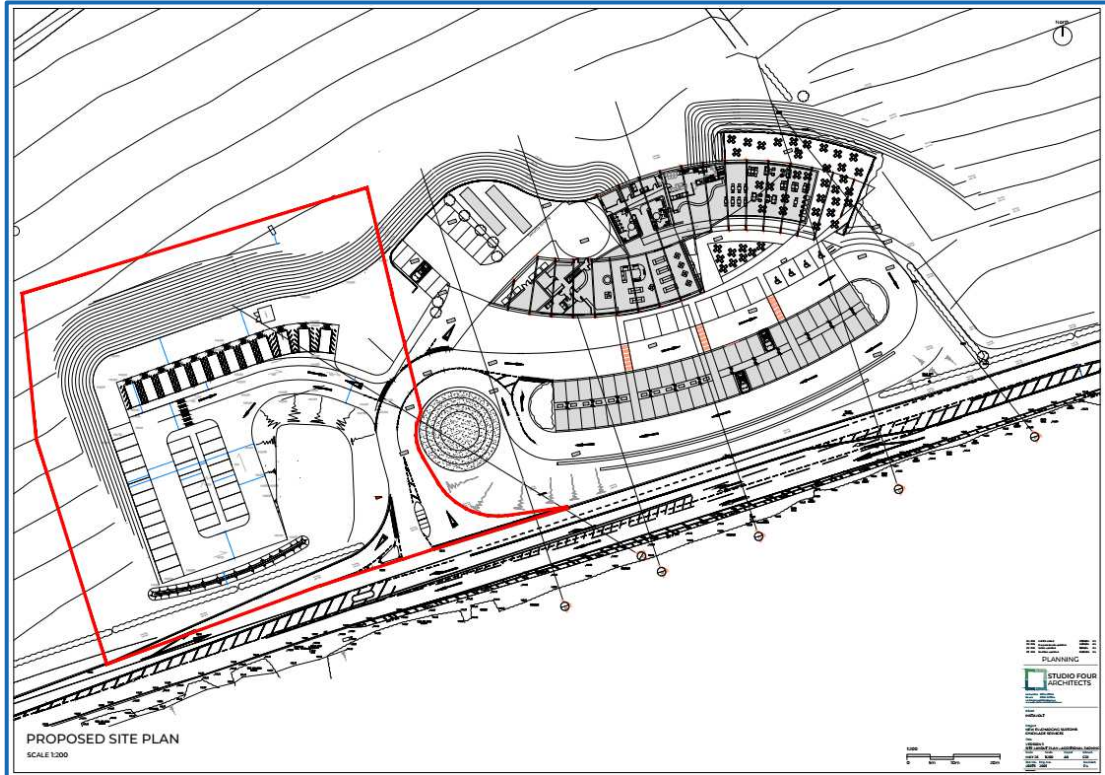


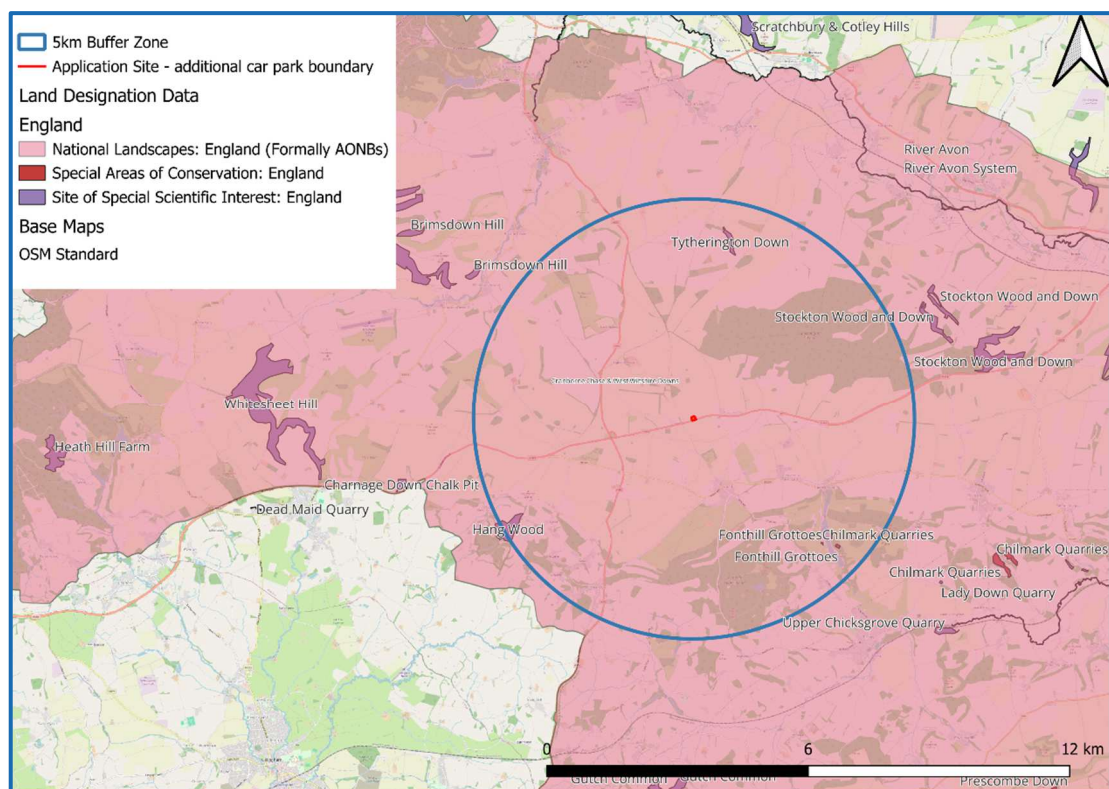
Figure 2: Proposed Development Site Layout Plan

6.2. Designated Sensitive Site

6.2.1. The area is within 5 km¹⁴ of a designated Special Area of Conservation (SAC), Sites of Special Scientific Interest (SSSI) and National Landscape (Formerly AONBs). These are shown in **Figure 3** and referred to as:

- SAC:
 - Chilmark Quarries – 4km from Site
- SSSI:
 - Hang Wood – 4.4km from Site
 - Fonthill Grottoes - 4km from Site
 - Tytherington Down – 3.8km from Site
- National Landscape:
 - Cranborne Chase & West Wiltshire Downs – 0km from Site

6.2.2. Site lies withing Cranbourne Chase, 14th designated dark skies reserve.



¹⁴ Based on empirical thresholds from visual impact studies, tall slender structures in open landscapes are typically prominent up to about 2 km, still relatively prominent between 2 and 5 km, and beyond this distance their prominence declines significantly, based on statements within Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes study (U.S.BLM-sponsored)

6.3. Existing lighting

- 6.3.1. The current Application Site is an existing Petrol Station, with a lit canopy. However, it is not known what level of lighting is achieved by this.
- 6.3.2. The Site is commissioned to be lit for 24-hour periods, with dimming introduced overnight
- 6.3.3. See **Figure 4** for visual representation of the surrounding lit environment.



Figure 4: View of the Lighting in the Surrounding Environment

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 6.1**) are similar to those expected within an E0 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 E0 Environmental Zone.

Zone	Surrounding	Examples	Limitations		Sky Glow ULR (Max)
			Pre-curfew	Post-curfew	
E0	Protected	Astronomical Observable dark skies, UNESCO starlight reserves, IDA Dark Sky Parks.	0	0	0%

Table 3: Limitations of Identified Environmental Zone

7. IDENTIFIED RECEPTORS

7.1. Ecological

- 7.1.1. A review of the Preliminary Ecological Appraisal (Ecosupport, 2022) confirms the absence of roosting bats on site and identifies only low potential for foraging and commuting activity within the immediate surroundings. Given this low sensitivity, vertical illuminance has not been modelled, as the proposed lighting is not anticipated to give rise to ecological constraints.
- 7.1.2. Notwithstanding the limited ecological sensitivity, the lighting design has been developed in line with good practice by minimising unnecessary spill light both horizontally and vertically whilst maintaining low illumination levels along the site perimeter, ensuring compatibility with general ecological guidance.

7.2. Human Amenity

- 7.2.1. No potentially sensitive human receptors have been identified. Therefore, this Lighting Strategy has been written in accordance with GN01:2021 (Table 2 - Obtrusive Light Criteria).

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. Lighting will be of an appropriate specification and designed in accordance with British Standards.
- 8.1.3. 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.
- 8.1.4. 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.
- 8.1.5. All lighting, unless otherwise stated, is to emit a warm white colour temperature light (2700K Kelvin or less) to reduce the potential for adverse effects onto potentially sensitive receptors.
- 8.1.6. Luminaires will not be mounted above 6m in height to ensure light is maintained at a low level.
- 8.1.7. Lighting within the unadopted areas will be required for the roadway and car park to ensure the safe movement of both vehicles and pedestrians during the hours of darkness. The roadway and car park will therefore be illuminated in accordance with BS EN 12464-2:2024, providing an average illuminance of 10 lux with a minimum overall uniformity of 0.25. Light spill onto surrounding boundary features will be minimised through the careful selection, positioning and orientation of luminaires, ensuring light is directed only where required for safety and operational purposes.

8.1.8. To further minimise the potential for obtrusive light, the lighting installation will be subject to a strict lighting control regime for each section (roadway and car park). Luminaires will be controlled via passive infrared (PIR) detection. During periods of inactivity, luminaires will operate at a default dimmed output of 20%. Between dusk and 23:00, increasing to 100% output when movement is detected by either pedestrians or vehicles. Between 23:00 and dawn, the maximum output when triggered will be reduced to 50% to further limit unnecessary illumination during periods of reduced activity. Following a period of 10 minutes without detected movement, luminaires will automatically return to the default 20% output level. This approach ensures lighting is available when required for safety whilst minimising energy consumption, light spill and impacts on the surrounding dark sky environment.

8.2. Roadway and Car Park

8.2.1. The Roadway and Car Park will be illuminated in accordance with BS 5489-1:2020 for amenity and safety purposes. The lowest possible lighting levels are proposed within this Lighting Strategy.

8.2.2. Performance requirements for the Car Park are outlined in **Figure 5**.

Table 4 — Maintained lighting levels for outdoor car parks

Type of area and usage	Values in lux	
	$\bar{E}$	U_o
Light traffic, e.g. parking areas of shops, terraced and apartment houses; cycle parks	5	0.25
Medium traffic, e.g. parking areas of department stores, office buildings, plants, sports and multipurpose building complexes	10	0.25
Heavy traffic, e.g. parking areas of major shopping centres, major sports and multipurpose sports and building complexes	20	0.25

Figure 5: Performance Requirements

Area	Section	BS 5489-1:2020 Requirements		MF used	Note
		Eav Lux	U_o		
Roadway and Car Park	Medium	10	0.25	Based on the manufacturer's latest LLMF value	MF of 1 to be used for lighting spill assessment

Table 4: Design Parameters BS 5489-1:2020 Table 4

Equipment Specification	
Application Area	Roadway and Car Park
Correlated Colour Temperature (Kelvin)	≤ 2700
Lumen Output (lm)	≤ 12 000
Height (m)	≤ 6
Mounting Arrangement	Post top
Luminaire Tilt (°)	0
Upward Light Output Ratio (%) E0 < 0%	0
Luminaire Manufacturer	Philips / Signify (Or Similar Approved)
Luminaire family	LumiStreet Gen2 (Or Similar Approved)
Example Luminaire Image	
Light Spill Diagram reference	Type A, B, C & D
Controls ¹⁵	PIR with radar between dusk to dawn. Dormant state of 20% output from dusk to dawn. When triggered: Increase from 20% to 100% output between dusk and 23:00 and from 20% to 50% between 23:00 and dawn. If no movement detected, the lighting will return to its dormant state after 10 minutes.

Table 5: Luminaire Performance Requirements for Roadway and Car Park

¹⁵ Dimming: when dimming is applied it is announced as a percentage still in use of the total percentage output (dimmed too, not dimmed by).

8.3. EV Charging points

- 8.3.1. It is assumed that the proposed EV charging points will incorporate integral illuminated screens and status indicators in accordance with the manufacturer's standard specification. As such, no dedicated vertical lighting is proposed for the operation of the charging units. The surrounding car park lighting will provide sufficient illumination for users to safely access and operate the charging points during the hours of darkness, whilst avoiding unnecessary lighting associated solely with the EV charging infrastructure.

9. SUMMARY OF RESULTS

9.1. Overview

- 9.1.1. The Light Spill Diagram shown in **Appendix 1 – Light Spill Diagram**, demonstrates the predicted light spill associated with the proposed lighting design. The results indicate that lighting will remain appropriately contained within the Application Site and will not give rise to unacceptable levels of obtrusive light.
- 9.1.2. To ensure a worst-case scenario has been assessed, the highest potential light levels have been presented within the Light Spill Diagram, with the project maintenance factor set at MF = 1.0. This demonstrates the maximum initial light levels at the commencement of the installation's operational life.

9.2. Summary of Results

- 9.2.1. The proposed lighting within the task area(s) is compliant with the relevant policies, standards and guidance.
- 9.2.2. The proposed lighting design has been developed in accordance with ILP GN01:2021 and relevant British Standards, whilst also incorporating measures to minimise unnecessary light spill beyond the site boundary.
- 9.2.3. As identified in Section 7, no potentially sensitive ecological or human amenity receptors have been identified within proximity to the Application Site. Consequently, vertical illuminance assessments have not been undertaken as part of this Lighting Strategy.
- 9.2.4. The proposed development is located within an excavated section of the site and sits approximately 6 metres below the surrounding ground levels on the northern side of the Application Site. This topographical containment provides substantial natural screening of the proposed lighting installation and further reduces the potential for light spill to extend beyond the Application Site boundary.
- 9.2.5. A review of the Preliminary Ecological Appraisal confirms the absence of roosting bats on site and identifies only low potential for foraging and commuting activity within the surrounding area. The proposed lighting is therefore not anticipated to give rise to ecological constraints.
- 9.2.6. Notwithstanding the limited receptor sensitivity, the lighting design has been developed in accordance with good practice principles through the use of carefully controlled optics, appropriate mounting arrangements and a correlated colour temperature of no greater than 2700K to minimise potential impacts on the surrounding environment.

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 **Section 8**, the amount of light in the affected Application Area is to be restricted to the amount of time required for amenity and safety purposes only.
- 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 British Standards, 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. The Lighting Strategy incorporates a range of measures to minimise the potential for obtrusive light, including the use of shielded luminaires, warm white light sources with a correlated colour temperature of no greater than 2700K, careful luminaire positioning and lighting controls. The proposed development is also located within a cutting, with surrounding ground levels providing natural screening of the lighting installation. Together, these measures ensure the proposed lighting remains appropriate for its location within the Cranborne Chase National Landscape and Environmental Zone E0, whilst maintaining the operational and safety requirements of the development.
- 10.1.4. Through the application of this Lighting Strategy sensitive receptors will not be adversely affected by obtrusive light, as shown in **Appendix 1 – Light Spill Diagram**.
- 10.1.5. Through careful design and mitigation, this Lighting Strategy ensures the lighting installation at the Proposed Development will be in accordance with British Standards, guidance and local policy, including the Local Plan Pre-Submission Draft 2020–2038 (Regulation 19) and the Wiltshire Core Strategy.

APPENDIX 1 – LIGHT SPILL DIAGRAM

See accompanying document 4604-DFL-ELG-XX-LD-EO-13001

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.

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