



Lighting Impact Assessment:

Land at Dutton Lane, Eastleigh

Determinari-001 Ltd

20th January 2026



Report Details:

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This report has been prepared by Hawkins Environmental Limited for the sole purpose of assisting in gaining planning consent for the proposed development described in the introduction of this report.

This report has been prepared by Hawkins Environmental Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This assessment takes into account the prevailing conditions at the time of the report and assesses the impact of the development (if applicable) using data provided to Hawkins Environmental Limited by third parties. The report is designed to assist the developer in refining the designs for the proposed development and to demonstrate to agents of the Local Planning Authority that the proposed development is suited to its location. This should be viewed as a risk assessment and does not infer any guarantee that the site will remain suitable in future, nor that there will not be any complaints either from users of the development or from impacts emanating from the development site itself.

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1. INTRODUCTION

Hawkins Environmental Limited has been instructed by get Determinari-001 Ltd to undertake a Lighting Impact Assessment for retrospective development at Dutton Lane, Eastleigh.

This Lighting Impact Assessment assess the likely effects of the lighting already installed at the site known as Land at Dutton Lane Eastleigh. The site is a retrospective application for change of use to storage and distribution (B8) in the southern and central portions of the site and general industry/ storage and distribution (B2/B8) in the northern part of the site with all associated infrastructure.

The purpose of this report is to assess the effects resulting from artificial lighting that will be required for safe and secure operation of the application site. Potential effects of the proposed lighting have been assessed against the existing baseline conditions contributed by the luminaires.

Obtrusive light or light pollution is any light that strays to areas other than where it is intended and can include light intrusion (spill light) into neighbouring properties, upward light (which can create sky glow) and visual source intensity (glare). It could also create effects upon ecological receptors in the area, particularly with respect to bat roosts and foraging corridors.

The assessment adheres to the principles of Government planning policy in relation to lighting, specifically enacted by the *National Planning Policy Framework (NPPF)*.

The recommended approach for assessing the impacts of lighting, specifically the Institution of Lighting Professionals “*Guidance Note 1 for the Reduction of Obtrusive Light* (GN01:2021) and the Institution of Lighting Professionals PLG 04 document “*Guidance on Undertaking Environmental Lighting Impact Assessments*”.

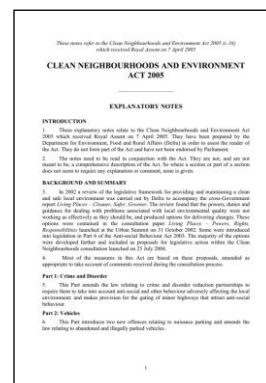
The assessment has been carried out in accordance with the published guidance documents from the ILP. These quantify the levels of direct upward light, light intrusion, viewed source intensity and glare regarded as acceptable for varying environmental zones.

2. NATIONAL & LOCAL PLANNING POLICY

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

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:

“Artificial light emitted from premises so as to be prejudicial to health and nuisance constitutes a ‘Statutory 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)

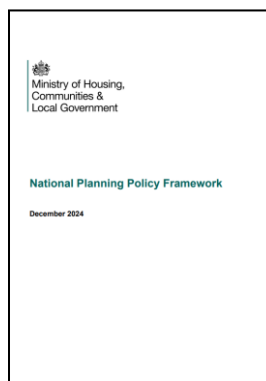
The National Planning Policy Framework (NPPF) was first published on the 27th March 2012 and revised July 2018, February 2019, July 2021, September 2023, December 2023 with the latest version published in December 2024.

The NPPF outlines the Government's planning policies for England and determines how they should be applied. It provides a framework within which Local Planning Authorities are required to prepare their own locally-prepared plans, where both the policies within the NPPF and the local plan are material planning considerations against which planning decisions are determined. These distinctive local and neighbourhood plans should be interpreted and applied in order to meet the needs and priorities of their communities.

The NPPF notes *“The purpose of the planning system is to contribute to the achievement of sustainable development, including the provision of homes, commercial development, and supporting infrastructure in a sustainable manner”* (Paragraph 7). The NPPF notes sustainable development should be delivered with three main dimensions: economic; social and environmental (Paragraph 8).

The NPPF supports a presumption in favour of development, unless the adverse impacts of that development outweighs the benefits it notes *“that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development”* (Paragraph 10).

With regard to light pollution, the NPPF was updated in December 2024, section 198 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: a) 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; b) 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 c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation. “

2.3. Planning Practice Guidance (2019)

The Light Pollution Planning Practice Guidance (NPPG) was launched on 6th March 2014 and has undergone regular revision, with the most recent changes to Noise Guidance published in November 2019. The PPG provides additional guidance and interpretation to the Government's strategic policies, outlined within the NPPF, in a web-based resource. The PPG provides guidance for assessing the effects of proposed artificial lighting.

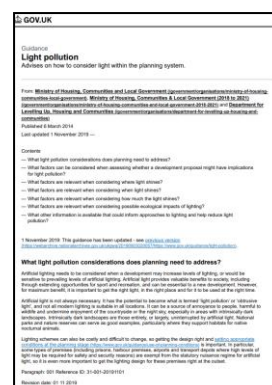
The guidance states:

“Artificial lighting needs to be considered when a development may increase levels of lighting, or would be sensitive to prevailing levels of artificial lighting. Artificial light provides valuable benefits to society, including through extending opportunities for sport and recreation, and can be essential to a new development. However, for maximum benefit, it is important to get the right light, in the right place and for it to be used at the right time”.

The PPG notes:

- *“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.)*

If the answer to any of the above questions is ‘yes’, local planning authorities and applicants should think about:



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- *where the light shines;*
- *when the light shines;*
- *how much light shines; and*
- *possible ecological impacts”.*

3. LIGHTING GUIDANCE

3.1. Guidance Note 01: The Reduction of Obtrusive Light (GN01:2021)

Published in 2021 by the Institution of Lighting Professionals (ILP), “*Guidance Note 1 for the reduction of obtrusive light*” (known as GN01) provides advice on guidance regarding ensuring obtrusive light and light pollution is kept to a minimum. Any Lighting Strategy shall be informed by this industry guidance note which aims to reduce the potential for obtrusive light to occur.

GN01 outlines the main considerations when considering artificial light within a proposed development. Some of these considerations are highlighted in **Figure 3.1**.

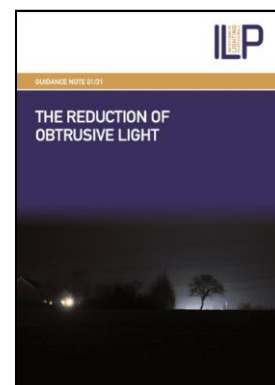
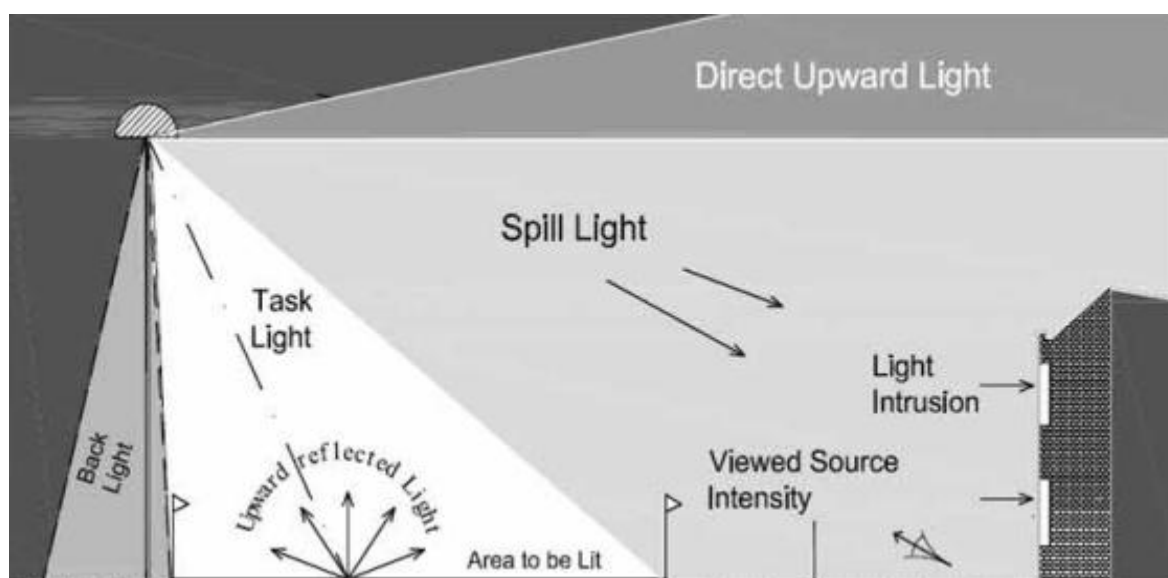


Figure La.1: GN01 Light Spill



One of the concepts introduced in the ILP Guidance Note is how different “*Environmental Zones*” can be used to characterise different lighting environments, which can then be used to inform lighting design and lighting control. Environmental Zones E0 to E4 are identified in **Table 3.1** below.

Table 3.1: GN01 Environmental Zones

Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SWM ~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 of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

Note 1-Where an area to be lit lies close to the boundary of two zones the obtrusive light limitation values used should be those applicable to the most rigorous zone (see comment below)

Note 2 -Rural zones under protected designations should use a higher standard of policy

Note 3- Zone E0 must always be surrounded by an E1 Zone

Note 4- Zoning should be agreed with the local planning authority. Due to local requirements a more stringent zone classification may be applied to protect special / specific areas

Note 5 -SQM (Sky Quality Meter) is referenced by the International Dark Skies Association (IDA). SQM is an instrument used to measure the luminance of the night sky. It is typically used by astronomers to quantify skyglow, using units of magnitudes per square arcsecond. the scale is between 16:00 (a bright night sky) and 22:00 (the least light pollution). The criteria for zone E0 was revised in mid 2019, with the new requirements not being made retrospective

Note 6- Astronomical Observable Dark Skies will offer clearer views of the Milky Way and of other objects such as the Andromeda Galaxy and the Orion Nebula

Note 7- Although values of SQM 20 to 20.5 may not offer clear views of astronomical dark sky objects such as the Milky Way, these skies will have their own relative intrinsic value in the UK

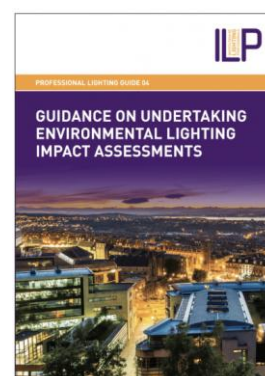
3.2. Professional Lighting Guide 04: Guidance on Undertaking Environmental Lighting Impact Assessments (2013)

Institution of Lighting Professionals (ILP) PLG 04 “Guidance on Undertaking Environmental Lighting Impact Assessments” (published in 2013) provides the guidance on how to conduct lighting impact assessment. PLG 04 notes:

“...this document is designed to provide an explanation of, and guidance on, the process for producing a Lighting Assessment...to remove or minimise environmental problems”

PLG 04 recommends completion of the following to inform the assessment:

- Desk based assessment of the project area and its surrounds. The desk-based assessment will comprise a review of relevant legislation and development plan policy to determine the key lighting policy at a regional and local level. The location



of light sensitive receptors in and surrounding the project area will be identified with input from the project landscape/visual and ecology teams and will consider both construction and operational lighting.

- A baseline nighttime (plus daytime survey if required) lighting survey (if required) will be carried out using digital light meters to determine existing light conditions in the vicinity of the project and to classify the relevant Environmental Zone.
- Obtrusive light modelling of the project lighting design or a lighting strategy will be carried out based on the worst-case scenario.
- The modelling results will be used to inform the Lighting Impact Assessment based on the significance criteria presented in PLG 04.
- The assessment of the cumulative effects of the project in combination with other relevant developments.

PLG 04 provides obtrusive light limits based on the Environmental Zone which should be applied to all new lighting in an area. **Table 3.2** summarises these limits below.

Table 3.2: Obtrusive Light Limitations for Exterior Lighting Installations

Environ. Zone	Sky Glow ULR (Max %)	Light Intrusion (into Windows) E _v (lux)		Luminaire Intensity I (candelas)		Building Luminance Pre-curfew
		Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	
E0	0	0	0	0	0	0
E1	0	2	0 (1 *)	2,500	0	0
E2	2.5	5	1	7,500	500	5
E3	5.0	10	2	10,000	1,000	10
E4	15	25	5	25,000	2,500	25

Notes to table:

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

E_v is Vertical Illuminance in Lux;

I is Luminance in Candelas per square metre; and

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.

() Permitted only from Public road lighting installations up to a maximum of 1.0 lux.*

PLG 04 suggests that Lighting Impact Assessment report should follow a number of specific stages:

1. Site Description (including identification of Environmental Zones)
2. Method of Assessment

3. Baseline Assessment
4. Proposed Development (including details of the design and limits)
5. Residual Effects (i.e. outlining the changes caused by lighting)
6. Potential Mitigation
7. Conclusions

PLG 04 also provides guidance on the effect descriptors, for both positive and negative effects. **Table 3.3** summarises these descriptors.

Table 3.3: PLG 04 Effects Table (replicated from PLG04)

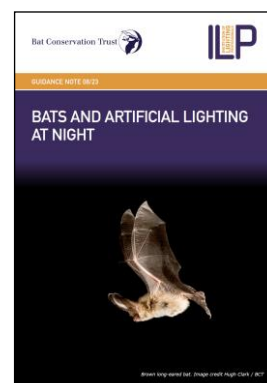
Nature	Level	Descriptions	Remedial needs
Positive	Major/substantial beneficial effects	Significant improvement in night environment and/or reductions in glare, spill light and sky glow	
	Moderate beneficial effects	Noticeable improvement in night environment and/or reductions in glare, spill light and sky glow	
	Minor beneficial effects	Slight improvement in night environment and/or reductions in glare, spill light and sky glow	
Neutral	None/negligible	No significant effect or overall effects balancing out	None
Negative	Minor adverse effects	Slight increase in visibility of site, glare and sky glow etc	Development appropriate levels and type of mitigation
	Moderate adverse effects	Noticeable increase in visibility of site, glare and sky glow etc	
	Major adverse effects	Significant increase in visibility of site, glare and sky glow etc	

PLG 04 provides guidance on assessing significance of impacts. The guidance notes that the magnitude of an impact and its significance are not necessarily linked. It notes *“increased lighting levels may be substantial, but if the local sensitivity to light is low, the significance may be low. Conversely, even a small change in a sensitive location may have important consequences and must be addressed”*.

3.3. Bats and Artificial Lighting in the UK (2018)

“*Bats and Artificial Lighting in the UK*”, published by the Bat Conservation Trust and Institution of Lighting Professionals (GN08/18) in 2018, provides guidance for artificial lighting and bats. The guidance 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 at or below 0.2 lux on the horizontal plane, and at or 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”.



4. SITE DESCRIPTION

4.1. Overview

The site, located on Dutton Lane, Eastleigh, comprises an open storage and operational facility that was previously used as a DHL warehouse and distribution centre. It now consists of seven individual working yards, and associated open space for parking on an ad hoc basis which is operating on a 24-hour basis to support continuous vehicle movements, loading and unloading operations, and general outdoor activities across the site.

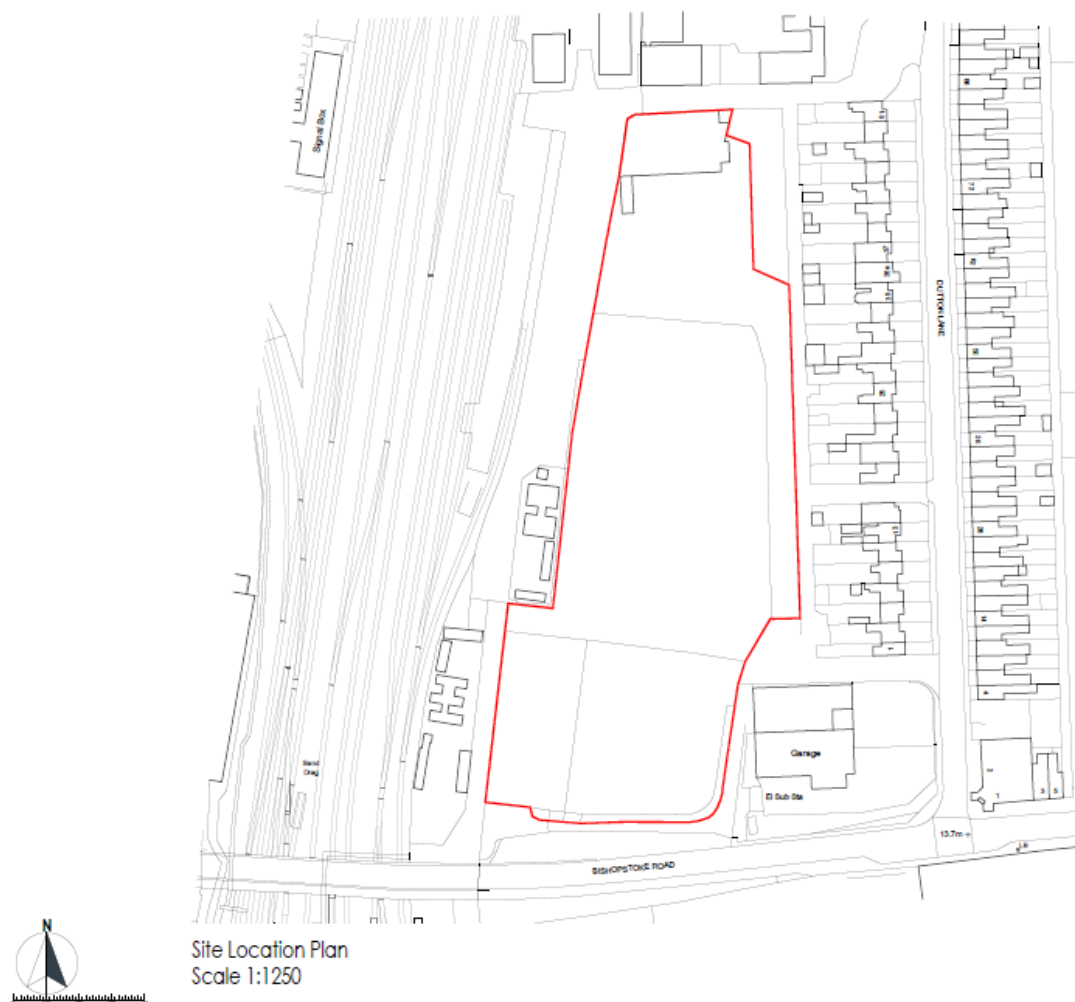
Each yard serves different operational purposes, including storage, vehicle manoeuvring, and material handling. As such, lighting requirements vary depending on the specific use and operational hours of each yard. Some areas are used regularly during night-time periods and therefore require maintained artificial lighting to ensure safe and efficient operations, while other yards, used predominantly during daylight hours or for infrequent access, may not require dedicated lighting installations.

The site layout includes internal access routes connecting the individual yards and linking to the main entrance off Dutton Lane which will require suitable illumination for safe pedestrian movement and vehicle circulation during low-light conditions.

Overall, the Dutton Lane site functions as a secure, multi-yard open storage facility with continuous operational activity. The proposed lighting design will be developed to support safety, security, and operational efficiency while minimising environmental impact and light spill to the surrounding area.

This planning application is retrospective, and the layout can be seen in **Figure 4.1**.

Figure 4.1: Existing Site Location Plan



4.2. Study Area

The desktop study area was determined by assessing the potential receptors that could be affected by a change in artificial lighting. This included nearby existing residential development, roadways, and any identified ecology receptors.

There are some existing residential properties near the site which are considered potentially sensitive to changes in lighting; with receptor locations indicated in **Appendix 1**.

Human Amenity Receptors

- 01 Dwellings Dutton Lane – 27m East

Human Safety Receptor

- 01 Traffic user- Bishopstoke Road (B3037) - 47m South

4.3. Classification of Environmental Zone

The proposed development site is an industrial estate within central Eastleigh. Zone E3 is characterised as “*Small town or urban location*”. It is considered that the Application Site is described as exhibiting ‘*Medium District Brightness*’. Although the site is in relatively sub/urban location there is high levels lighting associated with the industrial estate and the adjacent Railway line therefore increasing the district brightness. Therefore, the site is categorised as an **E3 Environmental Zone** in accordance with the ILP Guidance Notes, due to its broadly developed lighting environment.

5. METHOD OF ASSESSMENT

5.1. Methodology

The assessment has been carried out in accordance with the published guidance documents from the ILP. These quantify the levels of direct upward light, light intrusion, viewed source intensity and glare regarded as acceptable for varying environmental zones.

The Lighting Impact Assessment is desk-top based. The methodology employed for this assessment is appropriate to the location of the site. It comprises a desk-top study of the legislative, policy and guidance context; consultation with the design team; a desk-top survey in which the baseline conditions were estimated based on industry guidance; confirmation of the general expected light levels for the relevant Environmental Zone in which the site is located; evaluation of the likely effects of the approved lighting using appropriate assessment criteria; indicative layout and associated light spill modelling.

The methodology takes guidance from the Institution of Lighting Professionals PLG 04 document “*Guidance on Undertaking Environmental Lighting Impact Assessments*”. This sets out industry best practice for conducting the assessment.

The desktop study involved research into relevant legislation, policy and guidance relating to obtrusive light. It also involved studying of ordnance survey maps, plans and aerial photography views to identify likely receptor locations.

5.2. Potential Effects from Artificial Light

The following potential effects can arise from inappropriately designed artificial lighting:

- **Effects from light intrusion from exterior lighting on residents (through windows)**

Light intrusion (or light spill) is the term for the spilling of light beyond the boundary of the area being lit. The ILP Guidance Notes places a limit on the amount of vertical Illuminance which falls upon the centre of a dwelling window. The suggested maxima values quoted are relative to the amount of light measured as a baseline without the presence of the obtrusive light source.

- **Effects from luminous source intensity on residents and sightseers**

ILP GN01/21 advises limits luminous source intensity from luminaires to an observer. The greatest effects are usually encountered from poorly aimed floodlights or security lighting, or from lighting which is located too close to properties.

- **Effects from upward light (or sky glow)**

Light emitted above the horizontal either directly from luminaires or indirectly as reflected light from surfaces such as the landscape or buildings, has the potential to cause sky glow. The ILP “*Guidance Notes for the Reduction of Obtrusive Light*” places limits on the percentage of direct upward light emitted from the luminaires in their installed attitude, which is dependent upon the Environmental Zone in which the site lies. Indirect upward light is subject to surface reflectance properties. It is not easily quantifiable but is unlikely to be as significant as direct upward light from luminaires.

- **Effects from disability glare on transport users**

The lighting is designed to be installed such that glare is minimised in accordance with the ILP guidance notes.

5.3. Obtrusive Light Limitations

In the absence of suitable statutory guidance, the ILP “*Guidance Notes for the Reduction of Obtrusive Light*” GN01:2021 is typically used, to provide suitable assessment criteria against which to assess the likely effects of artificial lighting.

The relevant criteria of upward light, light intrusion and direct source intensity are outlined in **Table 3.2**.

5.4. Significance Criteria

The significance of an effect from artificial lighting has been based upon the sensitivity of the receptor and the magnitude of change at that receptor due to the revised conditions.

PLG 04 provides guidance on assessing the magnitude of an impact (as described in **Table 3.3**) and the significance of impacts. The guidance notes that the magnitude of an impact and its significance are not necessarily linked. It notes “*increased lighting levels may be substantial, but if the local sensitivity to light is low, the significance may be low. Conversely, even a small change in a sensitive location may have important consequences and must be addressed*”.

Consequently, one must assess the sensitivity of a receptor in order to determine significance. PLG 04 and GN01 does not specifically provide guidance on receptor sensitivity. However, it does hint that the Environmental Zone would play a factor (e.g. E0 would be more sensitive to changes in lighting than E4), as well as the type of receptor itself.

6. BASELINE CONDITIONS

The site is located within an established industrial area on Dutton Lane, Eastleigh, where the ambient lighting levels are relatively high due to the presence of surrounding commercial and industrial premises. The site currently comprises seven individual yard areas, some of which will require artificial lighting to ensure safety, security, and amenity during night-time operations.

The wider surrounding area features a mix of lit and unlit roads. The nearby A335 and A3024 corridors to the south and west are illuminated highway routes and contribute to the general sky glow and baseline luminance within the area. In contrast, sections of Dutton Lane and adjacent access routes remain partially unlit, resulting in a varied lighting environment across the local context.

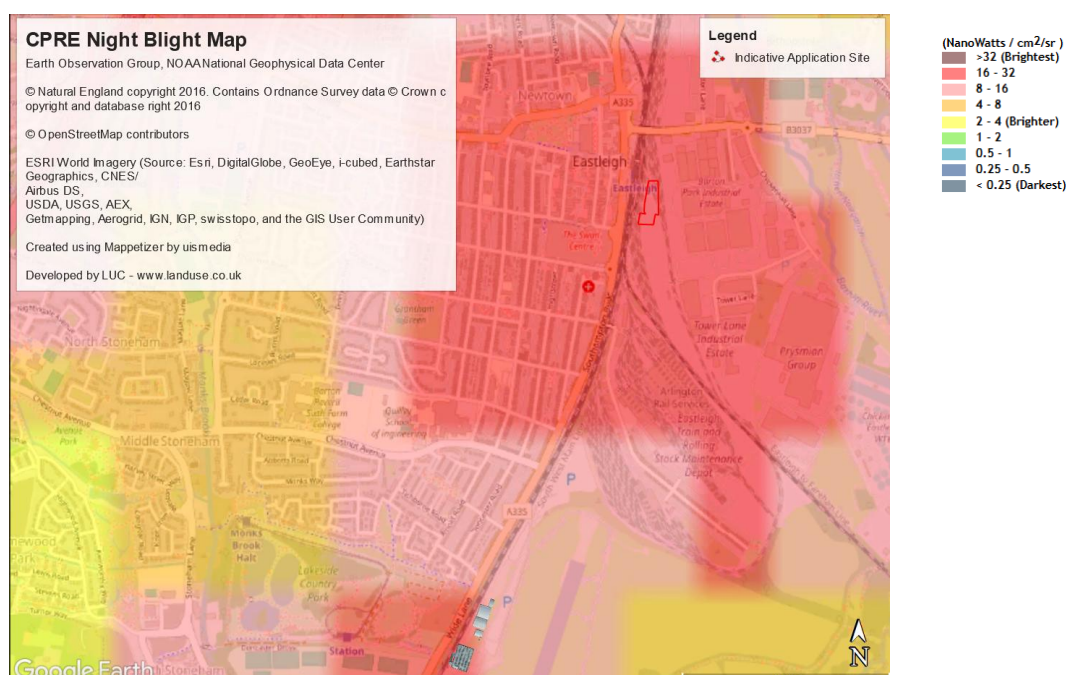
Within and around the site boundary, there are examples of private bulkhead and security lighting associated with neighbouring industrial units and service yards. These installations are likely to contribute to the overall local lighting environment, even in the absence of direct street lighting in some areas.

Overall, the site is situated within a predominantly lit industrial setting, with existing light sources from nearby roads, commercial premises, and private security lighting contributing to a moderate ambient brightness typical of such operational environments in Eastleigh.

CPRE night blight mapping (available at <https://nightblight.cpre.org.uk/maps/>) indicates significant levels of skyward radiance within and in the immediate surrounds of the site. Night blight mapping for the area is shown in **Figure 6.1**.

The night blight mapping indicates that the Application Site is consistent with criteria for an E3 Environmental Zone, as it shows a 'Medium District Brightness' to average level of baseline luminance in the vicinity of the Application Site.

Figure 6.1: CPRE Night Blight Mapping



7. PROPOSED DEVELOPMENT

7.1. Overview

The following section summarises the proposed lighting design.

The proposed development is a retrospective planning application, and the site is currently in operation. The site operator does not currently have any lighting on site. Consequently, it is proposed to design lighting to support safety, security, and operational tasks in specific areas of the site during the hours of darkness. Due to the nature of the site, where customers can rent a secure yard for a short or long term period, customers are permitted to install their own lights if required. Some of the customers already on site have installed their own lights. In order to ensure that lights installed by customers do not cause adverse impacts to the environment around the development site, it has been proposed that a Customer Lighting Strategy is adopted to ensure that customer lights comply with the overall lighting strategy on the site.

7.2. Lighting Criteria

The open yard is primarily intended for daytime operations, with limited vehicle movement during hours of darkness. Consequently, the site's lighting strategy has been tailored to align with actual operational requirements rather than applying the British Standard (BS EN 12464-2:2014) uniformly across all areas.

BS EN 12464-2:2014 and guidance from the Institution of Lighting Professionals (ILP) recommend maintained lighting levels of approximately 50 lux for outdoor workplaces used for vehicle movement and general operations, with a minimum uniformity of 0.4. These values are intended to ensure safe visibility during active work, particularly at night.

However, the open yard includes zones that are used exclusively for daytime storage or infrequent vehicle access. These areas do not involve regular night-time operations or pedestrian activity and therefore do not require continuous artificial lighting. Installing lighting in such zones would not provide any operational benefit and could contribute to unnecessary energy consumption and light spill, contrary to good environmental practice.

The proposed lighting approach focuses on areas with actual operational needs:

- **Vehicle circulation routes and loading/unloading zones** will be illuminated to recommended levels to ensure safe manoeuvring and hazard visibility.
- **Daytime-only storage areas** will not have dedicated artificial lighting, consistent with their operational profile.
- **Adaptive controls** such as photocells, timers, or occupancy sensors will be considered in areas where limited night-time lighting may be required, reducing energy use while maintaining safety.

This approach ensures compliance with UK standards and ILP guidance where relevant, while optimising energy efficiency, reducing light pollution, and aligning lighting provision with the yard's functional requirements. In essence, lighting is provided where and when it is needed, rather than applying a blanket standard across the entire site.

The recommended value represents a maintained average illuminance, accounting for lamp lumen depreciation and environmental factors such as dirt accumulation. Lighting within such areas should be designed to achieve uniform coverage across traffic routes and working zones, ensuring clear visibility of potential obstructions and personnel. In line with ILP guidance, luminaire selection and aiming should minimise light spill beyond the site boundary, with careful control of upward light and glare to prevent disturbance to neighbouring receptors or the night sky. Where practical, the installation of adaptive lighting controls—such as photocells, time switches, or occupancy sensors should be considered to reduce energy consumption outside operational hours.

The proposed lighting approach therefore recognises that lighting requirements will vary between yard areas, aligning illumination provision with actual operational needs. This ensures compliance with recognised UK standards and good practice while supporting a safe, efficient, and environmentally responsible lighting environment for outdoor storage and vehicle circulation areas

7.3. Environmental Lighting Limits

Based on an Environmental Zone of E3, **Table 7.1** outlines the obtrusive lighting limits for this site. The criteria shown are the maximum parameters for obtrusive light emanating from the development site, based upon the Environmental Zone.

Table 7.1: Obtrusive Light Limitations for Exterior Lighting Installations

Environ. Zone	Sky Glow ULR (Max %)	Light Intrusion (into Windows) E _v (lux)		Luminaire Intensity I (candelas)		Building Luminance Pre-curfew
		Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	
E3	2.5	5	10	10,000	1,000	10

Notes to table:

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

E_v is Vertical Illuminance in Lux;

I is Luminance in Candelas per square metre; and

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.

() Permitted only from Public road lighting installations up to a maximum of 1.0 lux.*

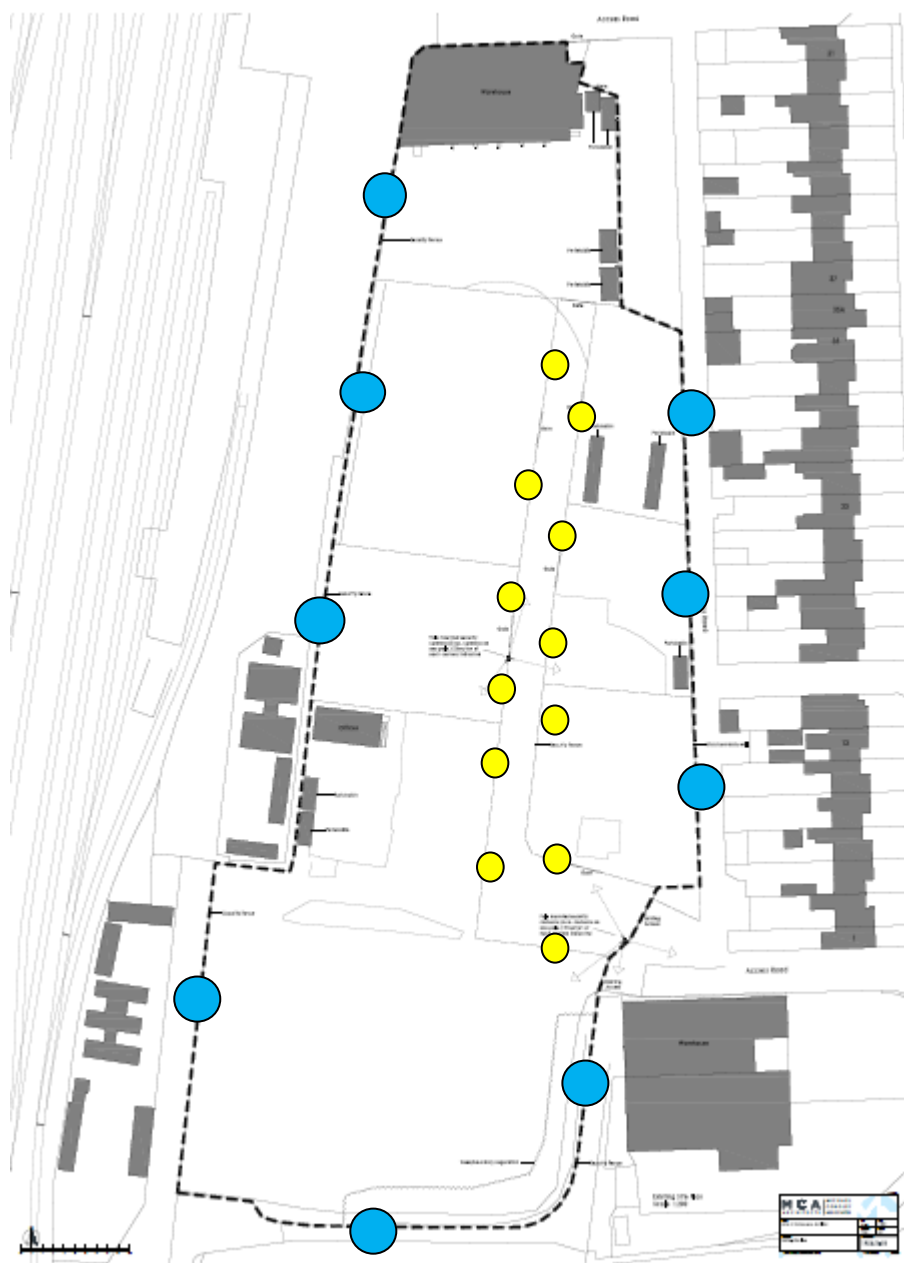
7.4. Lighting Strategy

The Proposed Development at Dutton Lane, Eastleigh will require lighting to support safety, security, and operational tasks in specific areas of the site during the hours of darkness. Lighting will be fit for purpose and designed to be sensitive to nearby human and ecological receptors, minimising unnecessary light spill and glare.

Proposed illumination will be provided using flood and area lighting luminaires, installed at heights of no greater than 10 metres. Where available, luminaires with integral LEDs and manufacturer-provided photometric data will be specified. This allows the photometric footprint of each luminaire to be accurately modelled, ensuring that potential effects of light spill beyond the site boundary are minimised or mitigated. Where manufacturer

photometry is not available, indicative luminaires with similar characteristics have been used for modelling purposes. A proposed layout map can be seen in **Figure 7.1**.

Figure 7.1: Locations of Proposed Lights



The lighting strategy has been developed with reference to the specific operational requirements of the seven-yard areas. Not all areas will require illumination; only those used during low-light hours for vehicle manoeuvring, loading, and general operational tasks will be lit. Areas used primarily during daytime hours or for infrequent access may remain unlit.

The design criteria seek to ensure that the lighting:

- Complies with the obtrusive light limits for the Environmental Zone in which the site is located.
- Is sensitive to the surrounding industrial and residential context.
- Provides a recognised standard of illuminance for all operational areas requiring illumination, consistent with best practice guidance (e.g., BS EN 12464-2 and ILP recommendations).

This strategy ensures that the lighting installation supports safe and efficient operations across the site, while minimising environmental impact and integrating appropriately with the surrounding lit industrial environment of Dutton Lane.

Table 7.2 and **Table 7.3** summarises the proposed lighting.

Table 7.2: Recommended Lighting Strategy – Flood Lights

Location	Open Storage Area (Yards)
Correlated Colour Temperature	4000K
Light Source	LED (Light Emitting Diode)
Height	8m (No Greater than)
Mounting Arrangement	Column Mounted
Luminaire Tilt	30 degrees
Upward Light Ratio	0%
Example Luminaire	
Controls Options	PIR and Switch Controlled: ON upon the detection of movement, OFF after 5 minutes. Full switch off after 10pm for individual yards.
Other Limitations	Must not exceed 30 Degree beam angle, luminaires on the east side of the site to reduce any Light Spill to neighbouring Residential properties.

Table 7.3: Recommended Lighting Strategy – Illuminated Bollards

Location	Open Storage Area (Communal Area)
Correlated Colour Temperature	4000K
Light Source	LED (Light Emitting Diode)
Height	1.5m (No Greater than)
Mounting Arrangement	Fence Mounted Fitting
Luminaire Tilt	30 degrees
Upward Light Ratio	0%
Example Luminaire	
Controls Options	PIR Sensor: ON upon the detection of movement, OFF after 5 minutes
Other Limitations	Must not exceed 5% ULRO.

7.5. Mitigation by Design

The potential effects of artificial lighting at the Dutton Lane site can be effectively mitigated through the proposed lighting strategy, prepared by a suitably competent lighting professional. The design follows principles of good lighting practice and employs appropriate lighting equipment to ensure operational areas are safely illuminated without causing obtrusive light that would exceed the recommended limits for the Environmental Zone (E3).

Lighting is required only in yards and areas where night-time operations take place, providing safety and security for employees performing tasks during hours of darkness. Yards that are used primarily during daylight or for infrequent operations will not be fitted with lighting, avoiding unnecessary energy use and light spill.

All installed lighting will be controlled via photocell or timer, ensuring that lights are only active during operational hours, specifically between 7am and 7pm. This approach minimises light emissions outside of necessary hours. Additionally, lighting along the eastern perimeter of the site will be fitted with back shields to further reduce light spill and prevent intrusion onto neighbouring areas.

The indicative light spill diagrams included in Appendix 3a represent a worst-case scenario, showing the maximum potential spread of light without consideration of any blocking, shielding, or other mitigating features. In practice, the lighting design ensures that light is focused on operational areas while minimising impact on the surrounding environment.

7.6. Installed Lighting

As previously noted, as this is a retrospective planning application, some of the existing customer have already installed lights within the yards they rent. A review of this external lighting presently installed on site has been undertaken in accordance with the Institute of Lighting Professionals (ILP) *Guidance Notes for the Reduction of Obtrusive Light* for Environmental Zone E3. The assessment confirms that all existing luminaires operate within the recommended limits for both pre-curfew and post-curfew periods.

Appendix 3b indicates the recorded and modelled values demonstrate that:

- Vertical illuminance at the façades of the nearest residential properties is well below the published E3 thresholds.
- Light spill at and beyond the site boundary is minimal and does not give rise to adverse impacts.
- Sky glow and upward light ratios are compliant with the relevant guidance.

On this basis, the existing lighting installation is not considered to give rise to unacceptable levels of obtrusive light and is not expected to cause any detriment to the amenity of nearby dwellings. No mitigation is required for the current lighting arrangement.

7.7. Future Lighting Requirements and Control Measures

Although the existing lighting complies with all relevant environmental criteria, the operating model of the site as an open storage facility accommodating a range of potential future users means that additional lighting may be required over time to support safe and secure operations. Without appropriate control, future installations could give rise to increased light spill or glare. A proposed light map as seen in **Figure 6.1** indicates the proposed lighting layout to ensure safety, security and amenity across the site.

To ensure continued compliance with E3 environmental zone limits and to safeguard the amenity of surrounding receptors, it is proposed that a Customer Lighting Strategy be adopted and secured by condition- these conditions and limitations are set out within the Customer Lighting Strategy in **Appendix 4**.

The purpose of the strategy shown in **Appendix 4** is to establish a clear framework within which any future lighting may be specified and installed. This will ensure that lighting required for **safety, security**, and

operational amenity is delivered without creating adverse effects on the wider area. The strategy will include, as a minimum:

- Defined maximum illuminance and luminance levels for any new lighting installations.
- Requirements for luminaire type, optical control, mounting height, aiming angles and shielding.
- Control measures such as timers, dimming profiles and curfew arrangements to avoid unnecessary operation.
- Measures to limit glare, light spill and upward light.

By combining a fixed, agreed-layout plan with a robust Lighting Strategy secured via planning condition, the proposal ensures that any future lighting whether installed by future tenants or introduced as part of evolving site operations will remain subject to a clear, enforceable framework. This provides flexibility for future users, while protecting the environment and preserving the amenity of surrounding residents.

In conclusion, we propose to install additional communal-area lighting only where required to ensure safety, security and operational amenity across the site. Any such communal lighting together with any external lighting that future tenants may wish to install — will be required to comply fully with the parameters set out in the approved Customer Lighting Strategy (**Appendix 4**). The proposed new communal lighting can be seen in the accompanying lighting-layout plan (**Figure 6.1**). The assessment set out in **Section 7.6** demonstrates that all existing tenant-installed and communal lighting already lies comfortably within the obtrusive-light limits for Environmental Zone E3, with no adverse impacts on neighbouring dwellings. Accordingly, no additional mitigation is required for the current installation. The combined approach controlled communal lighting plus tenant-installed lighting strictly managed under the Strategy establishes a clear, enforceable framework that preserves flexibility for future users while safeguarding nearby residential amenity and ensuring continued compliance with environmental standards.

8. LIGHTING IMPACT ASSESSMENT

8.1. Overview

The following section summarises the assessment of the proposed impact of the scheme.

Poorly designed lighting can contribute the following obtrusive light components which will be assessed in the following section:

- **Light spill, and specifically Light Intrusion to Windows;**
- **Sky glow;** and
- **Glare.**

Consideration of both human and ecological receptor are required.

8.2. Light Intrusion

Light intrusion to windows is one of the major considerations when assessing the potential impacts of the lighting strategy. Light intrusion to windows is typically modelled by calculating vertical illuminance (E_v), i.e. the level of light falling on a vertical surface. **Table 7.1** highlights the maximum recommended E_v based on the local Environmental Zone, post pre and post curfew.

Indicative light spill modelling has been conducted using Lighting Reality Pro lighting design software. Lighting Reality Pro provides Isolux contour maps showing how light spreads across the site. This helps to visualise how light will be distributed over the Open storage facility and can also be used to assess the development's potential impact on surrounding areas.

This assessment uses 2-dimensional lighting software for calculations, where site topography and light limiting features have not been accounted for within the design. This approach slightly limits the accuracy of the exact locations of Isolux contours shown on light spill mapping, but presents an absolute worst-case scenario, ensuring that lighting levels are not higher than those assessed.

It should be noted that the calculations do not include back shields as data for the type of luminaire proposed at this site is not available with back shields. Therefore, the calculations represent a worst-case scenario, without mitigation.

The results of the calculation of vertical illuminance can be seen in **Table 8.1** for the human and ecological receptors identified in **Section 4.2** of the report. These results present the “*worst case scenario*” and do not consider the features that may offer blocking/shielding effects.

Table 8.1: Vertical Calculation Results

Receptor Name	Pre-Curfew limit (Lux)	Post-Curfew limit (Lux)	Vertical illuminance (Pre-Curfew)	Vertical illuminance (post-curfew)	Pre- Curfew compliance	Post-Curfew
01 Human Amenity – Rear facades of Properties on Dutton Lane	5	10	0.23	0	YES	YES

Table 8.1 shows that **without mitigation**, pre and post-curfew vertical illuminance levels would be below the relevant E3 Environmental Zone limits outlined in PLG 04 and replicated in **Table 3.2** at the human amenity receptors.

8.3. Glare

There are two types of glare that needs to be considered:

- Disability Glare: Glare which impairs the vision of objects but may not cause discomfort.
- Discomfort Glare: Glare causing discomfort which may not impair the ability to see objects.

The Proposed Development has been designed to ensure that obtrusive light in the form of glare is minimised in line with obtrusive light guidance and criteria. Glare will be minimised by ensuring that the main beam angle of all luminaires are directed away from any potential observer into the centre of site wherever possible, and angled at less than 70 degrees from the horizontal. Therefore, it is not considered that glare will be an issue at any of the surrounding receptors.

8.4. Sky Glow

Sky glow is the brightening of the night sky caused by artificial lighting resulting from the reflection of radiation (visible and non-visible), scattered from the constituents of the atmosphere, for example gas molecules, aerosols and particulate matter.

Sky Glow comprises two separate components:

- Natural sky glow - sky glow which is attributable to radiation from celestial sources and luminescent processes in the Earth's upper atmosphere.
- Man-made sky glow - sky glow which is attributable to man-made sources of radiation, e.g. outdoor electric lighting.

Sky glow will be minimised by using modern LED integrated luminaires with good photometric control, angled at less than 70 degrees from the horizontal and by using additional shields as appropriate. Providing appropriate lighting is installed, the development is unlikely to have a noticeable impact upon local levels of sky glow.

8.5. Potential Mitigation

In addition to the mitigation measures incorporated into the lighting design as standard, since the proposed lighting design meets the requirements of the Environmental Zone **E3** limits, no further mitigation is required.

8.6. Summary of Residual Effects

8.6.1. Human Amenity

The assessment has shown that unmitigated, there could be an increase vertical illuminance, pre-curfew, at the closest sensitive human receptors, with the dwellings located closest to the proposed lights on Dutton Lane to experience the greatest impact. However, since the proposed lighting design meets the requirements of the Environmental Zone **E3** limits. Therefore, the residual effects are assessed to be insignificant, primarily due to the limited use of the site, the temporary nature of the impacts and the low likelihood of intrusive impacts. Furthermore, the lighting would be implemented in line with relevant British Standards and guidance through the implementation of the lighting design.

8.6.2. Human Safety

The assessment has shown that vertical illuminance will be below the E3 limits on Dutton Lane the mitigation measures proposed will limit glare. Therefore, providing the recommendations contained within this report are implemented, the lighting proposals should have a negligible impact on human safety.

8.6.3. Sky Glow

Providing the recommendations contained within this report are implemented, the lighting proposals should have a negligible impact on sky glow.

9. CONCLUSION

This report considers the effects of the proposed lighting for the development of the open storage facility at Dutton Lane, Eastleigh, which comprises seven operational yards and associated landscaping.. The assessment evaluates the potential for obtrusive light associated with the exterior lighting design, ensuring that illumination is appropriate for operational needs while minimising impacts on surrounding human receptors.

9.1. Baseline Conditions

The Application Site is within a Semi Urban environment which is assessed to be an **E3** Environmental Zone.

In the absence of baseline survey data, the appropriate guidance documents have been used to establish the likely baseline light levels within the immediate area surrounding the site.

A comprehensive desktop assessment was undertaken to determine likely baseline conditions. Although a site-based survey was not undertaken, the area is typically semi urban and aligns with an **E3** Environmental Zone as described in ILP GN01:2021. District brightness associated with suburban environments is described as low, with CPRE night blight mapping indicating limited levels of skyward radiance into the night sky (**Figure 6.1**).

In conclusion, we propose to install additional communal-area lighting only where required to ensure safety, security and operational amenity across the site. Any such communal lighting together with any external lighting that future tenants may wish to install will be required to comply fully with the parameters set out in the approved Customer Lighting Strategy (**Appendix 4**). The proposed new communal lighting can be seen in the accompanying lighting-layout plan (**Figure 6.1**). The assessment set out in **Section 7.6** demonstrates that all existing tenant-installed and communal lighting already lies comfortably within the obtrusive-light limits for Environmental Zone E3, with no adverse impacts on neighbouring dwellings. Accordingly, no additional mitigation is required for the current installation. The combined approach controlled communal lighting plus tenant-installed lighting strictly managed under the Strategy establishes a clear, enforceable framework that preserves flexibility for future users while safeguarding nearby residential amenity and ensuring continued compliance with environmental standards.

9.2. Residual Effects

Using a detailed lighting design and the mitigation measures outlined in **Section 7.5** and **Section 8.5**, the residual effects are assessed to be **insignificant** for the identified residential receptors. This is due to the low potential for obtrusive light to have a significant impact, through the implementation of the detailed lighting design. This is due to both mitigation measures and the temporary use of the site.

Potential human sensitive receptors located outside the boundaries of the site are unlikely to be subjected to obtrusive light from the development, due to the measures implemented within the detailed lighting design, that has been prepared by suitably competent lighting professionals.

It has also been identified that impacts in relation to human safety and sky glow will also be considered insignificant.

In conclusion, lighting levels associated with the Proposed Development will be appropriate for the Environmental Zone in which they are set (**E3**), and lighting will be designed to minimise obtrusive light. As

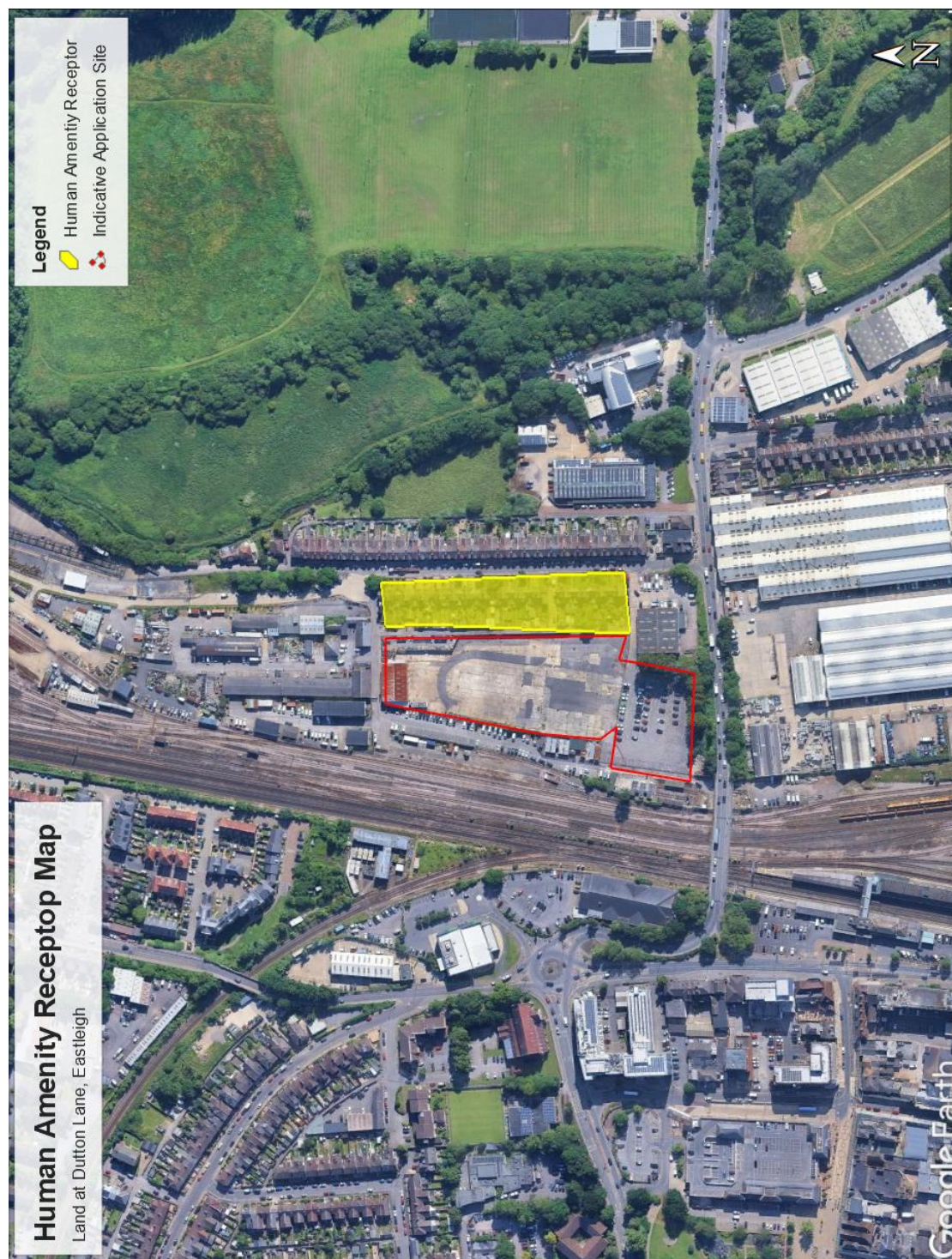
such, there are unlikely to be permanent residual effects that are of significance from artificial lighting installed as part of the development.

Lighting levels indicated with the Light Spill diagram represent the most adverse worst-case scenario, shielding effects such as the Trees have been not taken into consideration. Lighting has been modelled at the start of life with a MF of 1.00, not considering luminaire depletion. Light Spill within situ is likely to be considerably less.

Lighting to the Proposed Development will be implemented in accordance with the Lighting Strategy this will ensure that any additional lighting will not give rise to a breach of the guidance.

Appendix 1 Human Receptor Map

Appendix 1: Human Receptor Map

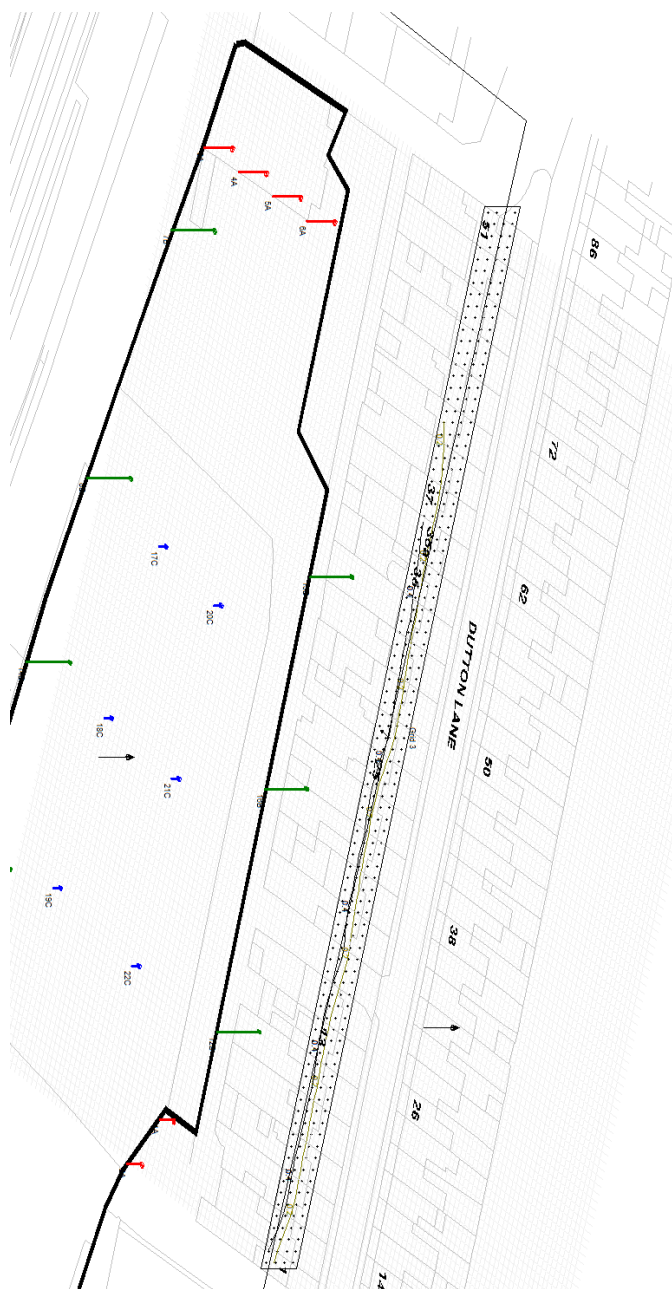


Appendix 2

Vertical Illuminance Calculation Grids

Appendix 2: Vertical Illuminance Calculation Grids

Human Receptor 01- 0.22 Lux



Appendix 3 Light Spill Model

Appendix 3: Light Spill Model

See separate document

Appendix 4

Customer Lighting Strategy

Appendix 4: Customer Lighting Strategy

Purpose

This Site Lighting Strategy provides a single, prescriptive framework for all lighting installations within the site. It is designed to:

- Ensure operational lighting for safety, security, and wayfinding.
- Prevent obtrusive light impacts to nearby residential receptors.
- Enable individual tenants or operators to install or upgrade lighting without needing separate planning approval, provided they follow this strategy.
- Maintain compliance with ILP E3 Environmental Zone guidance, including pre- and post-curfew limits.
- All future lighting on site must comply with the requirements herein. No deviation is permitted without prior written approval from the site operator.

General Design Principles

- No Upward Light
- All luminaires shall have zero upward light ratio (ULR = 0%).
- All light must be directed downwards.
- Minimise Obtrusive Light
- Light spill, glare, and sky glow must be minimised.
- Luminaires must be selected and oriented to prevent direct illumination of neighbouring properties.
- Use Only Where Necessary
- Lighting must only be installed where required for safety, security, or operational purposes.
- Avoid over-illumination.
- Efficiency and Colour
- LED luminaires only, with CCT $\leq$ 3000K.
- Glare controlled to UGR-equivalent levels suitable for each application.
- Luminaires must have high optical efficiency to minimise wasted light.

Approved Lighting Types and Heights

Lighting Type	Maximum Mounting Height	Controls
Wall-mounted	3.0 m	Fully shielded/downlight-only; suitable for building perimeters and access points.
Column-mounted floodlight	6.0 m	Must have fully controlled optics; avoid pointing toward residential properties; shielding/baffles required on eastern boundary.
Wayfinding/ bollard	2.0 m	Downlighting only; illuminance sufficient for navigation; avoid overlighting.

Additional Requirements:

- All luminaires must be fully shielded or have cowls/baffles as needed to prevent spill toward adjacent properties.
- Any lighting adjacent to eastern boundary must include additional shielding to protect residential amenity.
- Any luminaires in communal areas (e.g., shared circulation paths) may be constant, but all others must include PIR sensors.

Controls and Operation

- PIR Sensors for Non-Communal Areas
- All luminaires outside communal circulation areas must be equipped with motion detection.
- Lights switch off automatically after 5 minutes of no detected movement.
- Curfew / Dimming
- Where practical, lighting should be dimmed during quiet periods (e.g., late night).
- No luminaire shall operate at higher than required illuminance levels at any time.
- Timers / Photocells
- Lighting may be controlled by timers or photocells for safety/security but must remain compliant with ILP E3 limits.
- Shared Responsibility
- Each tenant/operator is responsible for ensuring installed lighting meets the criteria in this strategy.
- No additional planning approval is required if all criteria are met.

Shielding, Aiming, and Orientation

- All luminaires must be aimed to avoid direct line-of-sight to residential properties.
- Floodlights and wall-mounted luminaires near the eastern boundary require rear shields or baffles.
- Column-mounted floodlights must have cutoff optics or adjustable shields to control spill.
- Bollards and path lights must be downward only, with side emission minimised.
- Visual Example: (schematic or diagram could be inserted showing shielding, aiming, and maximum heights).

Technical Standards

- Illuminance Levels: Horizontal illuminance and vertical illuminance must remain below ILP E3 guidance limits.
- Colour Temperature: $\leq 3000\text{K}$, neutral warm white recommended.
- Glare Control: Ensure UGR appropriate for pedestrian or operational areas.
- Luminaire Type: LED only, fully shielded/downlight.
- Maintenance: Lighting must be regularly maintained, ensuring alignment, shielding, and optical performance are preserved.

Pre-Installation Checklist (Internal Approval Only)

Before installation, each tenant/operator must verify the following:

- Luminaire datasheets confirm downlight-only optics and ULR = 0%.
- Mounting heights do not exceed permitted maxima.
- Aims and orientation comply with shielding requirements.
- Controls (PIR, timers, dimming) are correctly set.
- Lighting is sufficient for operational needs, but not excessive.
- Spill and vertical illuminance at boundaries remain below ILP E3 thresholds.
- Once these checks are completed, installation may proceed without further planning review.

Ongoing Compliance and Maintenance

Each tenant/operator is responsible for ongoing compliance.

The site operator will conduct periodic audits to ensure alignment, shielding, and sensor operation remain effective.

Any replacement or additional luminaires must conform to this strategy.

Any complaints regarding obtrusive light from neighbouring properties must trigger a review and adjustment of affected lighting.

Summary

This strategy provides a rigorous, repeatable framework that allows multiple users to safely install lighting without compromising amenity, safety, security or the site's planning compliance. By following the specified luminaire types, mounting heights, shielding, controls, and operational rules, all future lighting installations will remain:

- Safe and functional for the site.
- Compliant with ILP E3 limits.
- Low-impact on nearby dwellings.