



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

HURTSWOOD PADEL CLUB

LIGHTING TECHNICAL REPORT

DFL-UK

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EXECUTIVE SUMMARY

This Lighting Technical Report has been prepared for the proposed lighting installation at Hurstwood Padel Club, located within St Francis Sports and Social Club. The accompanying drawings, produced by Designs for Lighting Ltd (DFL), demonstrate that light levels at nearby residential properties remain well within the acceptable limits for obtrusive light, as defined in GN01:2021. This report also provides a response to the comment raised by the Environmental Health Officer, shown below.

"Please can the applicant also provide further details regarding the lighting scheme. What I am trying to establish is whether or not any residents in the locality will be affected by the proposed lighting. I would consider this to be an E3 zone, and would therefore like to know the predicted illuminance (in lux), in the vertical plane at the windows of dwellings in the vicinity so that I can assess any impact from the proposed lights."

The comment has been addressed within this report.

The lighting proposed within the Application Site will not breach the limits of an E3 environment and will be compliant to relevant policy and guidance.

1. INTRODUCTION

1.1. General

- 1.1.1. This Lighting Technical report 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 Technical Report 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 ³light emitted from premises so as to be prejudicial to health or a nuisance;

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

2.2. National Planning Policy Framework 2024 (Published 2025)

- 2.2.1. The National Planning Policy Framework (NPPF) sets out the government's planning policies for England and how they are expected to be applied and provides a framework for local plans. With regard to light pollution, the NPPF was updated in February 2025 and states that the following elements are to be 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. Mid Sussex District Council, Mid Sussex District Plan 2014 - 2031.

- 3.1.1. The relevant Local Planning Authority (LPA) for the Proposed Development is the Mid Sussex District Council with policies detailed within the Mid Sussex District Plan 2014 – 2031, Adopted in March 2018 applying to the lighting associated with the Proposed Development.

The applicable policies are:

DP26: Character and Design

Strategic Objectives: 2) To promote well located and designed development that reflects the District's distinctive towns and villages, retains their separate identity and character and prevents coalescence; 4) To protect valued characteristics of the built environment for their historical and visual qualities; 12) To support sustainable communities which are safe, healthy and inclusive; and 14) To create environments that are accessible to all members of the community.

All development and surrounding spaces, including alterations and extensions to existing buildings and replacement dwellings, will be well designed and reflect the distinctive character of the towns and villages while being sensitive to the countryside. All applicants will be required to demonstrate that development:...

[...does not cause significant harm to the amenities of existing nearby residents and future occupants of new dwellings, including taking account of the impact on privacy, outlook, daylight and sunlight and noise, air and light pollution (see Policy DP29);

DP29: Noise, Air and Light Pollution

Strategic Objectives: 3) To protect valued landscapes for their visual, historical and biodiversity qualities; and 12) To support sustainable communities which are safe, healthy and inclusive.

Evidence Base: Data held by Environmental Health, Air Quality Action Plan – Stonepound Crossroads, Hassocks.

The environment, including nationally designated environmental sites, nationally protected landscapes, areas of nature conservation or geological interest, wildlife habitats, and the quality of people's life will be protected from unacceptable levels of noise, light and air pollution by only permitting development where:...

[...Light pollution:

- The impact on local amenity, intrinsically dark landscapes and nature conservation areas of artificial lighting proposals (including floodlighting) is minimised, in terms of intensity and number of fittings;*
- The applicant can demonstrate good design including fittings to restrict emissions from proposed lighting schemes;...]*

[...The degree of the impact of noise and light pollution from new development or change of use is likely to be greater in rural locations, especially where it is in or close to specially designated areas and sites.

4. BRITISH STANDARDS

4.1. BS EN 12193:2018 – Light and Lighting – Sports Lighting.

- 4.1.1. This British and European standard specifies lighting for indoor and outdoor sports events, the document covers most sports events practised within Europe. The document considers the application of artificial lighting, control methodology, uniformity, glare restrictions, illuminance and colour properties for optimal performance.

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 ⁶ (Max %)	Light Trespass (Into Windows) E _v (lux)		Building Luminance Average, Pre-curfew
		Pre- Curfew	Post-Curfew ⁷	Average L (cd/m ²)
E0	0	0	0	0
E1	0	2	0 (1 ⁸)	0
E2	2.5	5	1	5
E3	5	10	2	10
E4	15	25	5	25

Table 2: Obtrusive Light Criteria

⁶ ULR (Upward Light Ratio) is the maximum permitted percentage of luminaire flux that goes directly into the sky.

⁷ 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

⁸ If the installation is for public (road) lighting, then this may be up to 1 lx

5.2. LTA Padel Court Data Sheet

- 5.2.1. The LIA Guidance provides the foundation for Padel Court lighting design and sets out two recognised methods for achieving suitable illumination. These methods are shown below to ensure safe play conditions while minimising obtrusive light and environmental impact.

"Padel courts can be floodlit by two methods.

Method 1 involves the use of integrated or extended fence posts as part of the surrounding fence enclosure with a top bracket to mount either one or two low wattage light fittings. The extended fence posts usually being inset by 4.0m from the back of the court into the side elevations.

Method 2 involves the use of stand alone floodlight columns outside of the padel court enclosure to mount floodlight fittings.

The choice between the two methods depends on the number of padel courts to be lit and the complexities of the site i.e. are there houses in close proximity which may require superior fittings to control lux level spillage and reduce potential glare.

All light fittings are required to be manufactured to British and European standards with the associated CE marking. The padel court may be delivered as a 'package kit' from the manufacturer and therefore all the electrical components shall be detailed with a suitable lighting design prior to placing any order for the works.

All light fittings shall be installed to create a minimum 6m high clear space above the padel court playing area.

Padel court lighting designs will be produced using dedicated software by competent persons (consultants or manufacturers) with relevant experience in this regard. Planning requirements may require schemes to be developed by consultants rather than manufacturers where specific criteria may be stipulated to allow compliance with regulations

While the minimum levels are stated above a 10% over performance should be taken into consideration when undertaking the initial design i.e. (0.9 maintenance factor).

If there is a future requirement for an outdoor court to be potentially covered at some stage in the future then the indoor minimum standard should be adopted in the first instance or provision made within the switchgear, ducting and cabling arrangement for the future upgrade."

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 Hurstwood Padel Club. The Application Site lies between an established built-up area to the north east and west and open green areas to the south east. To the north and west, there are commercial buildings and residential housing, while to the south and east, extensive green spaces and playing fields provide a buffer from surrounding development. The site occupies a transitional zone between the urban area and adjoining open land. An indicative boundary of the site and proposed layout can be seen in **Figure 1**.

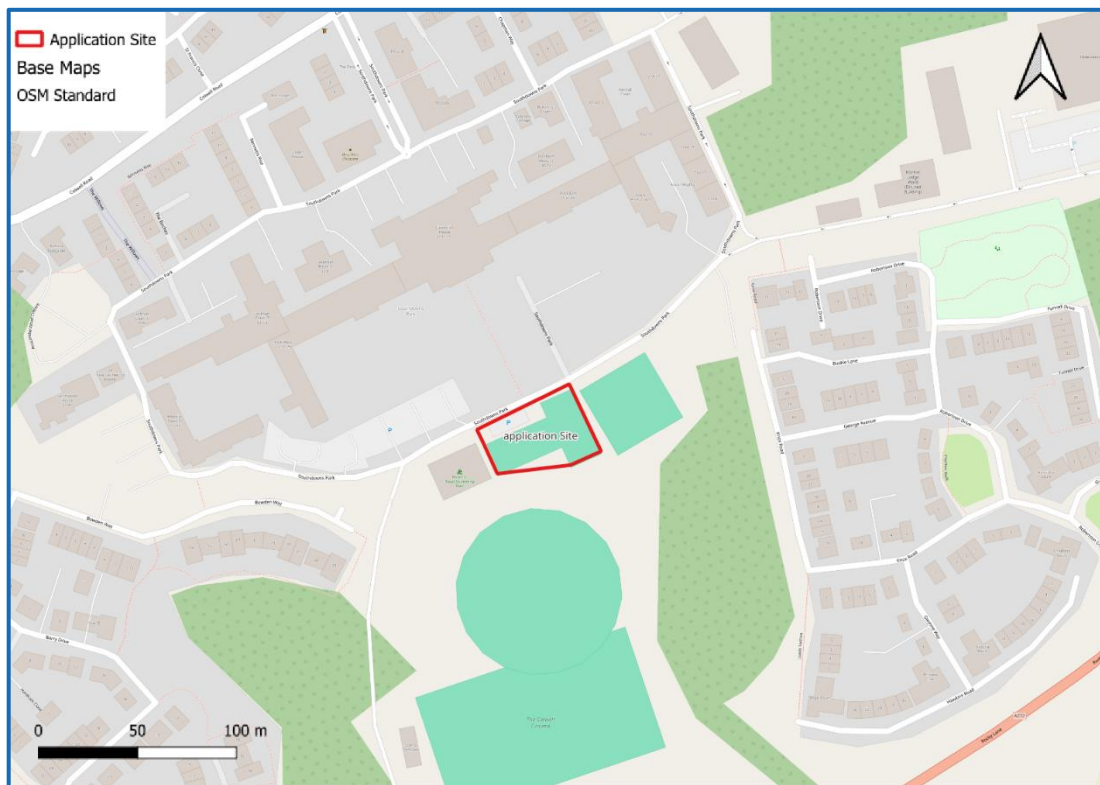


Figure 1: The Application Site location and boundary

6.1.3. The Proposed Development is for:

"Temporary (36 months) permission for change of use of existing tennis courts to padel courts and associated works. Tennis Courts at St Francis Sports and Social Club, Colwell Road, Haywards Heath, West Sussex RH16 4EZ"

6.1.4. The Site Layout Plan is shown in **Figure 2**.

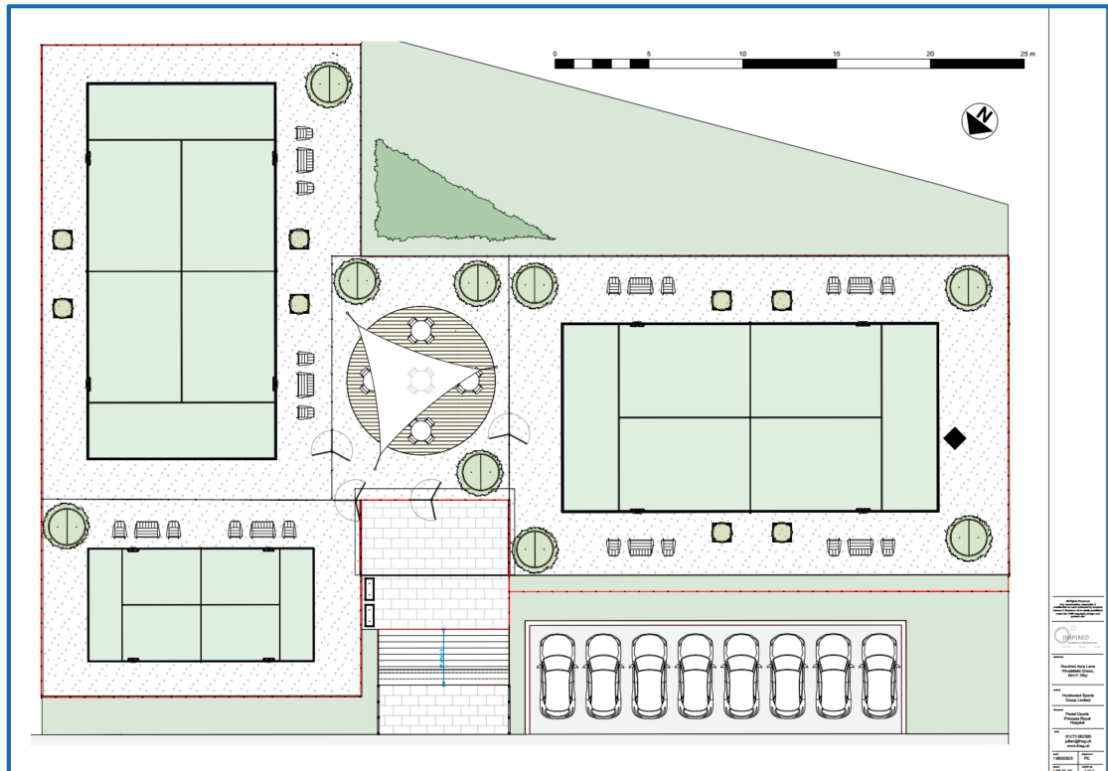


Figure 2: Proposed Development Site layout plan

6.2. Designated Sensitive Site

6.2.1. -The area is within 2 km⁹ proximity of a designated Special Area of Conservation (SAC), Sites of Special Scientific Interest Site(SSSI) and National Landscape (Formally AONBs) these are shown in **Figure 3** and referend to as.

- Ashenground and Bolnore Woods – 1.08km from Application Site
- Ashenground and Bolnore Woods – 1.50km from Application Site
- Scrase Valley – 1.80km from Application Site
- Bedelands Farm – 1.90km from Application Site
- Blunts and Paiges Wood – 2.04km from Application Site

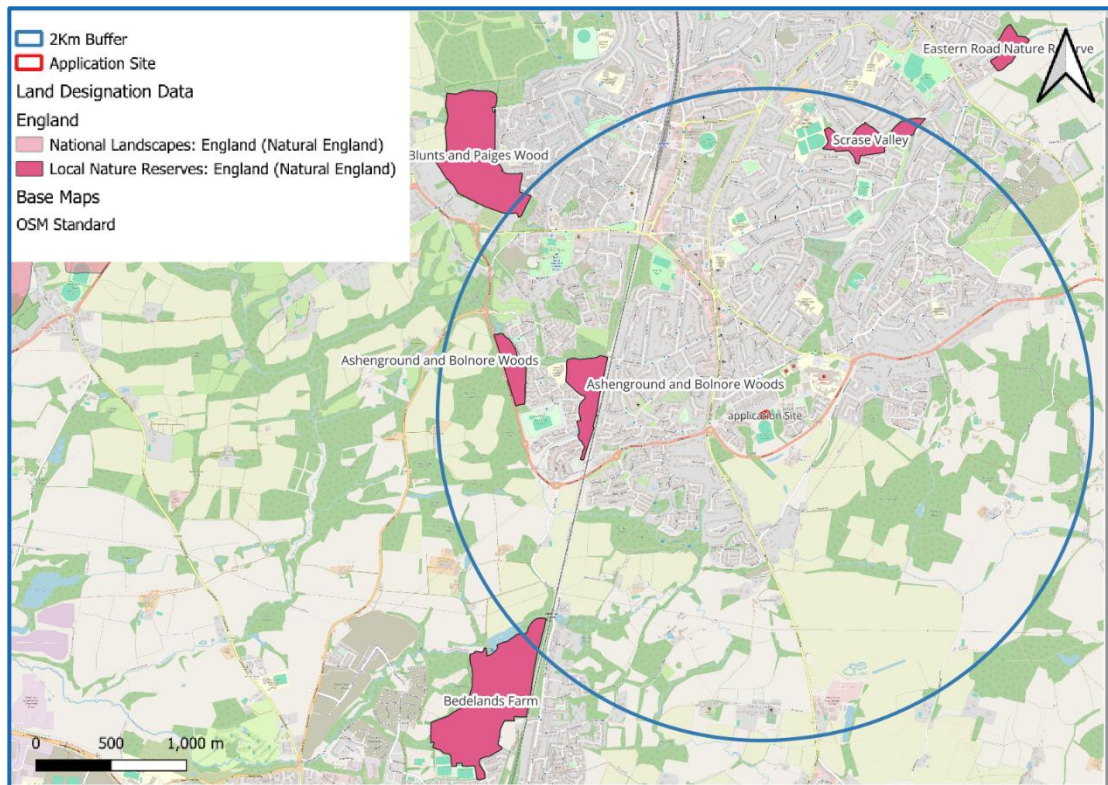


Figure 3: Site designation

⁹ 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. There is existing street lighting along the roads surrounding the Application Site, comprising of LED fittings mounted on green columns. The lighting provides general illumination along the carriageway and footpaths, through residential areas. This continues down Southdowns Park illuminating the roadway past the Application Site. See **Figure 4** for visual representation of the surrounding lit environment.

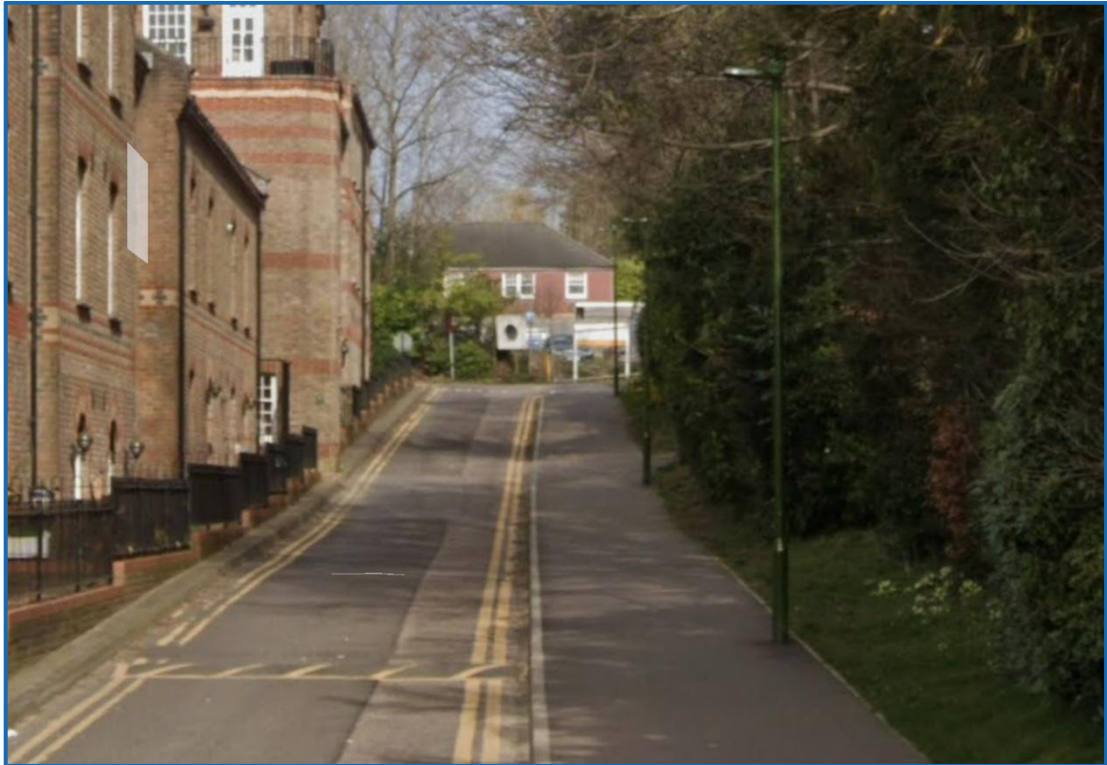


Figure 4: view of the lighting in the surrounding environment

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 6.3) are similar to those expected within an E3 zone.
- 6.4.2. The Environmental Zone criteria detailed within Table 1 and Table 2 informs the basis of the Lighting Strategy. The Application Site is considered to be located within an E3 Environmental Zone.

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

Table 3: Limitations of identified environmental zone.

7. IDENTIFIED RECEPTORS

7.1. Human Amenity

- 7.1.1. To the North, East and West of the site, Potential Human Amenity Receptors (PHAR) have been identified as shown in **Appendix 3 – Sensitive Receptors**. Therefore, this Lighting Strategy has been written in accordance with GN01:2021 (Table 2 - Obtrusive Light Criteria).
- 7.1.2. A description of the potential human receptors can be seen in **Table 4**.

Receptor Type	Receptor No. (Appendix 3)	Description
Human Amenity	PHAR 001	Apartment building to the north of the Application Site
Human Amenity	PHAR 002	Dwellings to the East of the Application Site
Human Amenity	PHAR 003	Dwellings to the West of the Application Site

Table 4: Potential Human Amenity Receptors (PHAR)

8. LIGHTING STRATEGY

8.1. Summary

- 8.1.1. The Proposed Development will require lighting for safety and amenity at limited times during the hours of darkness. Lighting will be fit for purpose and sensitive to nearby human 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. The following criteria seeks to ensure that the lighting is not outside of the obtrusive light limits for the Environmental Zone in which the Application Site is located, is sensitive to the area, and provides a recognised standard level of lighting for all adoptable areas requiring illumination. Luminaires will distribute light downwards only to reduce the potential for light spill onto the boundaries surrounding the buildings and upwards towards the sky.
- 8.1.6. All lighting unless otherwise stated is to emit a warm white colour temperature light (4000 Kelvin or less) to reduce the potential for adverse effects onto potentially sensitive receptors.
- 8.1.7. Lighting in unadopted areas will be required in the following task areas:
 - > Padel Courts

8.2. Padel Courts

- 8.2.1. The Padel Court will be illuminated in accordance with BS EN 12193:2018 for the purpose of allowing the proper play of Padel Tennis as per Lawn Tennis Associate Guidance.
- 8.2.2. Additional rear shields are proposed to control light spill.
- 8.2.3. Performance requirements for the Padel Court are outlined in **Figure 5**.
- 8.2.4. Following a risk assessment, the lighting class will remain as recommended in BS EN 12193:2018

Table A.16						
Outdoor			Reference area		Number of grid points	
			Length m	Width m	Length	Width
Tennis	PA		30	15	13	7
	TA		36	18	15	7
Padel ^a	PA		20	10	13	7
Class	Horizontal illuminance		Horizontal illuminance TA		R_G	R_a
	$E_{hor Ave lx}$	U_{2hor}	$E_{hor Ave lx}$	U_{2hor}		
I	500	0,70	75 % PA	75 % PA	50	70
II	300	0,70	75 % PA	75 % PA	50	60
III	200	0,60	75 % PA	75 % PA	55	60
^a A safety zone around both entrances of width 2 m, height 4 m and extending 4m from the centre to both sides is to be kept clear of any obstacles.						

Figure 5: Performance Requirements

Area	Class	BS EN 12193:2018 Requirements		MF used	Note
		Eav Lux	U _o		
Padel Courts	III	200	0.60	0.90	Compliant

Table 5: Design Parameters BS EN 12193:2018

Equipment Specification	
Application Area	Padel Court
Correlated Colour Temperature (Kelvin)	≤4000 K
Lumen Output	≤ 11,000 lumens
Height	≤6m
Mounting Arrangement	Post top
Luminaire Tilt	0
Upward Light Output Ratio E3 < 5%	0%
Luminaire Manufacturer	Phillips (Or Similar Approved)
Luminaire family	Clearflood Gen 2(Or Similar Approved)
Example Luminaire Image	
Light Spill Diagram reference	Type A and Type B
Controls	Timeclock in feeder pillar and rear shields, On at dusk off no later than 22:00 hours

Table 6: Luminaire Performance Requirements

9. TECHNICAL ASSESSMENT

9.1. Overview

- 9.1.1. The Light Spill Diagram shown in **Appendix 1 – Light Spill Diagram** and **Appendix 2 – Vertical Light Spill Diagram**, demonstrates that the Light Spill Levels associated with the proposed lighting would comply with the obtrusive light guidance set out in ILP GN01:2021, at sensitive receptors.
- 9.1.2. To ensure the worst-case scenario has been modelled, the highest potential light levels have been modelled / presented in the light spill diagram, with the project maintenance factors set at MF = 1.0¹⁰. This demonstrates the light levels at their highest (initial light levels at the start of luminaire life).

9.2. Technical Assessment

- 9.2.1. The proposed lighting within the task area(s) is compliant to the relevant policies, standards and guidance.
- 9.2.2. Where human receptors are potentially sensitive to vertical light spill, a vertical illumination grid has been modelled, as shown in **Appendix 2 – Vertical Light Spill Diagram**. The light levels based on the modelling do not exceed 2 Lux, keeping the light levels within the guidance given within GN01:2021 for an area identified as an E3 environment.

Receptor No	GN01/2021 requirements		Maximum vertical Illuminance (Lux)	Notes
	Pre-curfew	Post Curfew		
PHAR 001	10 Lux	2 Lux	0.02	Well below GN01:21 limitations
PHAR 002	10 Lux	2 Lux	0.01	
PHAR 003	10 Lux	2 Lux	0.02	

Table 7: PHAR results table, maximum illuminance

¹⁰ <https://www.dfl-uk.com/knowledge-hub/faqs/>

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. Where applicable, shields are proposed to further minimise spill.
- 9.3.3. 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.
- 9.3.4. The detailed design is to be completed by a competent person or persons in accordance with the details within this Lighting strategy.
- 9.3.5. Additional mitigation and enhancement is detailed in **Table 8**.

Mitigation/Enhancement	Method	note
Restricting of Upward Light	All luminaires will have an Upward Light Output Ratio of 0%	
Rear spill shields	All luminaires are to have rear shields to limit light spill onto sensitive areas of the Application Site	
Timeclock in feeder pillar	A timeclock is to be installed in the feeder pillar controlling the lanterns switch on and off times	It is recommended that the lighting would be turned on 15 minutes before play and off 15 minutes after play. This is to ensure the smooth functioning of the Padel Court and to restrict the amount of time the lighting is in use.

Table 8: Mitigation and enhancements

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. 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** and **Appendix 2 – Vertical Light Spill Diagram**.

10.1.4. The Environmental Health Officer provided the following comment,

“Please can the applicant also provide further details regarding the lighting scheme. What I am trying to establish is whether or not any residents in the locality will be affected by the proposed lighting. I would consider this to be an E3 zone, and would therefore like to know the predicted illuminance (in lux), in the vertical plane at the windows of dwellings in the vicinity so that I can assess any impact from the proposed lights.”

This comment has been considered within this Lighting Technical report and relevant lighting layouts (**4239-DFL-ELG-XX-LD-EO-13001-S3** and **4239-DFL-ELG-XX-CA-EO-13001-S3**).

10.1.5. The lighting system has been designed to achieve suitable illumination levels for sports use in accordance with relevant guidance, while incorporating modern fittings and controls to improve efficiency and reduce obtrusive light impacts on nearby receptors.

10.1.6. 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 (Mid Sussex District Plan 2014 – 2031).

APPENDIX 1 – LIGHT SPILL DIAGRAM

See accompanying document 4239-DFL-ELG-XX-LD-EO-13001-S3

APPENDIX 2 – VERTICAL LIGHT SPILL DIAGRAM

See accompanying document 4239-DFL-ELG-XX-CA-EO-13001-S3

APPENDIX 3 – SENSITIVE RECEPTORS

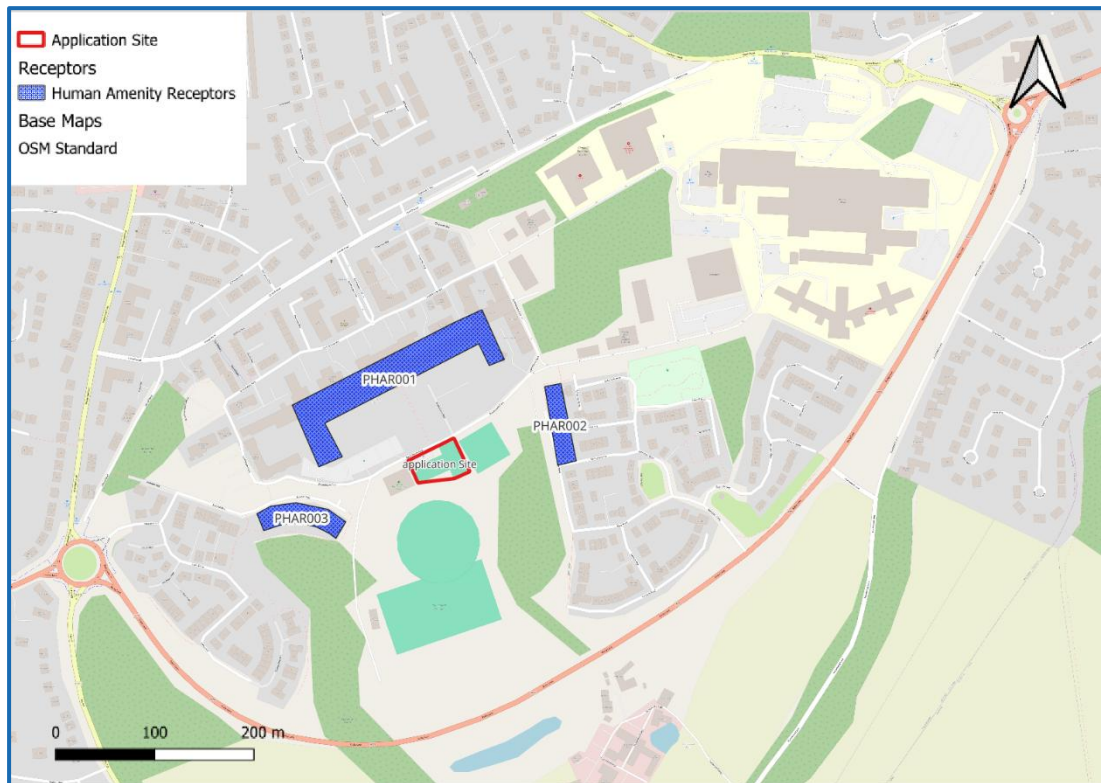


Figure 6: Sensitive receptors

TECHNICAL DESCRIPTIONS, DEFINITIONS AND ABBREVIATIONS

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

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

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

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

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

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

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

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

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

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

Luminous intensity: is light brightness or how intense the light source is. Light intensity is how intense a light source is emitted or received in a particular direction, this is measured in 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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