

Neath Sports Centre

Creation of 2Nr. Padel Courts with associated floodlighting and canopy

Padel Lighting Statement



Site	Neath Sports Centre, Neath Abbey Road, Neath SA10 7BR		
Project	Creation of 2Nr. Padel Courts with associated floodlighting and canopy		
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Contents

Introduction and Lighting Design Overview.....	3
Purpose of the Report	3
Design Overview	3
Lux, Lumens and Candela.....	3
Design Standards and Environmental Classification	5
Environmental Status	5
Relevant Lighting Standards.....	5
Technical Sports Lighting Proposal.....	7
Hours of Use	7
Floodlighting System	7
Floodlight Specification.....	7
Lighting Performance and Impact Assessment.....	8
Floodlighting Performance.....	8
Energy Efficiency and Intelligent Controls.....	8
Lighting Intrusion	8
Post Installation Monitoring	9

Introduction and Lighting Design Overview

Purpose of the Report

This Padel Lighting Statement has been prepared to support the planning application for the development of two new covered padel courts at Neath Sports Centre. The purpose of this document is to assess the proposed floodlighting scheme in terms of its technical design, environmental performance, and compliance with planning policy and guidance. The report summarises the lighting design approach, outlines performance data and mitigation measures, and demonstrates how potential impacts have been minimised through best practice.

The lighting scheme has been designed in accordance with the standards set out within:

- LTA Rules of Padel for National and International Competitions
- BS EN 12193:2007
- The National Planning Policy Framework (2024)

Design Overview

- The proposal includes a 4-column LED floodlighting system designed to illuminate each padel court (8Nr. floodlights total).
- Delivers a maintained average illuminance of 500 lux, meeting the requirements of BS EN 12193, LTA Rules of Padel for National and International Competitions.
- Lighting design complies with ILP GN01/21 for Environmental Zone E3, with:
 - An Upward Light Ratio (ULR) of 0%
 - Controlled beam angles to minimise light spillage.
 - Pre-set curfew controls to extinguish lighting automatically following the final session.
- Designed to limit impact on residential amenity, ecological features, and the wider environment.
- Enables safe, extended use of the facility for community and club-based football.
- Further sections of this report provide full details of the technical specifications, modelling outputs, planning compliance, and mitigation strategy.

Lux, Lumens and Candela

Lumens is a measure of how much light is emitted from a source. Lumens are set out within guidance as the lumens will vary from light source to light source. The more lumens a floodlight emits the brighter the floodlight.

Lux is a unit of measurement for the intensity of light falling on a surface when considering the area over which the light is spread. For example, if a light source delivers 2,500 lumens concentrated onto 1m², it produces an illuminance of 2,500 lux. However, with the lumens spread across 10m², the illuminance decreases to just 250 lux. As the light spreads further from the point source, the intensity per square metre reduces.

Candela is a measure of how bright a light source appears in a particular direction to an observer.



Figure 1 - Lumen, Lux and Candella Diagram

Design Standards and Environmental Classification

Environmental Status

The Institution of Lighting Professionals (ILP) Guidance Notes for the Reduction of Obtrusive Light (GN01:2023) sets out the below environmental zones to classify a sites illumination level.

The site has been classified as **Environmental Zone E3** due to the sites location within the location of Neath, which has been highlighted within the ILP table below. This classification reflects a “Well inhabited rural and urban settlements, small town centres of suburban locations” setting and prescribes specific limits on obtrusive light during both pre-curfew and post-curfew hours.

Table 1 - 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 (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 of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

Relevant Lighting Standards

The proposed sports lighting system has been designed in accordance with recognised national and international standards to ensure performance, safety, and sustainability. It has been tailored to meet the needs of the centre, community users, and the surrounding environment through appropriate illuminance levels, glare control, and LED energy-efficient technology.

A new lighting system should meet the lighting standards set out in the LTA guidance with the lighting requirements as shown in the table below.

Table 2 – LTA Rules of Padel Lighting for National and International Competition

Property	Maintained average illuminance
Maintained average illuminance	> 500 Lux
Uniformity (Min / Ave)	> 0.7
Lamp colour temperature	Tk > 4000
Lamp colour rendering	≥ 70

To minimise running costs the lighting system is designed to allow individual padel court switching to facilitate economical management and prevent over lighting to areas when not in use.

In addition, the lighting system design seeks to comply with complimentary recommendations published within BS EN 12193:2007 Light and lighting. Sports lighting.

BS EN 12193 is the European standard that deals with sports lighting to ensure good visual conditions for players, athletes, referees, spectators and CTV transmission. Its objective is to provide recommendations and specify requirements for good quality sports lighting by:

- Optimising the perception of visual information used during sports events
- Maintaining the level of visual performance
- Providing acceptable visual comfort
- Restricting obtrusive light

BS EN 12193 specifies lighting for indoor and outdoor sports events most practiced in Europe. It provides lighting values for the design and control of sports lighting installations in terms of illuminances, uniformity, glare restriction and colour properties of the light sources.

All the requirements are meant to be as minimum requirements. It also gives methods by which these values are measured. For the limitation of glare, it also points out restrictions on the location of the luminaires for specific sporting activities.

Selection criteria of chosen design:

- Adequate illuminance levels (as per above requirements)
- Good uniformity (as per above requirements)
- Low light pollution (displayed within design)
- Good aesthetic appearance
- Regular maintenance
- Vandal resistant equipment and materials

Technical Sports Lighting Proposal

Hours of Use

The proposed padel courts requires a sports lighting system to satisfy the necessary and planned usage. The lighting system is vital to ensure that clubs and local community are able to make use of the facility during the darker winter months, to ensure that play and matches can be safely accommodated.

The proposed sports lighting system will be operated during evenings of permitted use, after dusk and up to the approved curfew hour.

The proposed hours of use requested is follows:

Table 3 - Proposed Hours of Use

Day	First Activity	Final Activity
Monday-Friday	06:00	22:00
Saturday	09:00	20:00
Sunday (inc bank holidays)	09:00	20:00

Floodlighting System

The lighting system comprises of 4Nr. 6m high floodlighting columns per court (8Nr. total) mounted on the fence posts.



Figure 2 - Example of Fence Mounted Luminaires

Floodlight Specification

Philips Clearflood LED luminaires have been selected as they provide a complete sports lighting system as they offer:

- High efficiency luminaire with low energy consumption
- Precision optical control and asymmetric beam angles
- High performance output with outstanding uniformity



Figure 3 - Example Clearflood Luminaire

Lighting Performance and Impact Assessment

The following technical assessments has been undertaken to evaluate the lighting scheme's performance and its potential impacts on surrounding receptors. The results confirm that the design meets or exceeds all relevant standards for luminance, obtrusive light, and amenity protection, even under conservative (worst-case) modelling assumptions.

Floodlighting Performance

The lighting proposal is detailed within Padel Lighting Performance Report, which shows column locations, floodlight orientations, luminance levels on the courts and projected overspill values.

The design for the padel courts achieves values which meets the requirements of BS EN 12193 as shown in the table below (page 4 of Padel Lighting Performance Report).

Table 4 - Floodlighting Performance

Calculation	Switching Mode	Average (Lux)	Uniformity (Min/Ave)
Padel North	1	554	0.7
Padel South	2	554	0.7

All design calculations have been undertaken using an open, unobstructed site, thereby creating a worst-case scenario. Design values of overspill will be further reduced by the proposed canopy, existing mature trees, adjacent buildings, or natural screening.

The maintained luminance values for the 500 lux lighting has been calculated using a maintenance factor of 0.95 to account for environmental conditions and depreciation of light output between cyclical maintenance, including bulk lamp change.

The padel courts can be individually switched on and off to allow individual court usage to prevent over lighting when courts are not in use.

Energy Efficiency and Intelligent Controls

The system utilises dimmable LED luminaires with integrated control features that allow variable light settings based on pitch use and pre-set schedules. These features include:

- Programmable lighting for individual courts
- Seasonal scheduling aligned to BST/GMT
- Curfew enforcement with automatic switch-off

Lighting Intrusion

The ILP GN01/21 guidance defines maximum limits for vertical illuminance at surrounding premises for each environmental zone. The design ensures all light spill remains within the prescribed limits for Zone E3, including pre- and post-curfew values.

Table 5 - Maximum Values of Illuminance on Premises

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

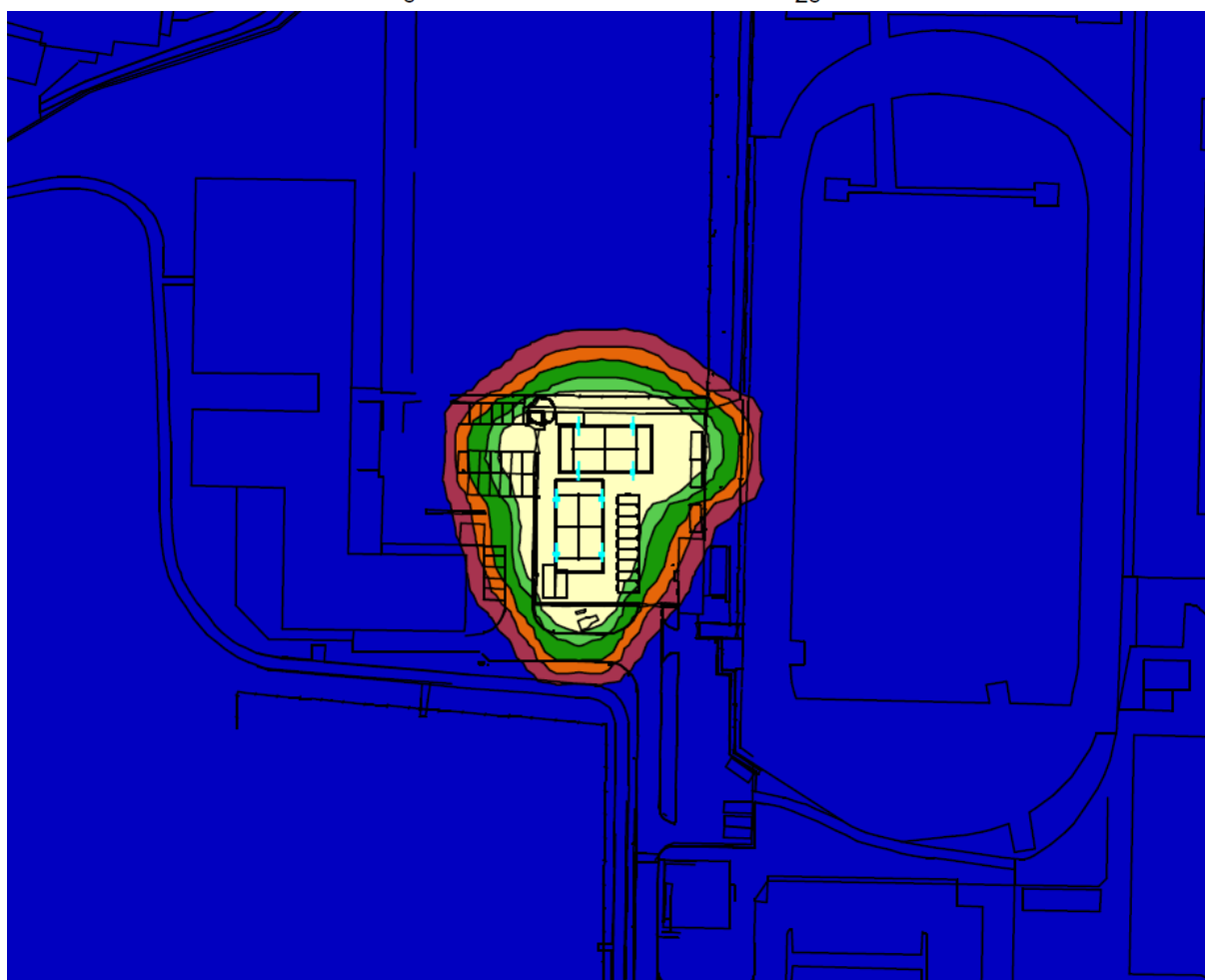
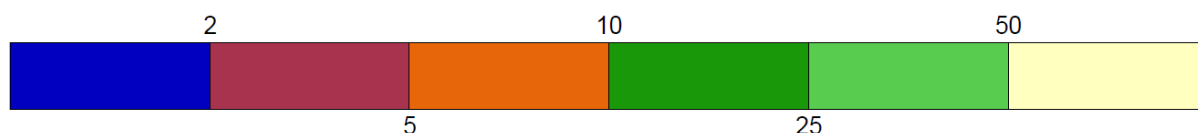


Figure 4 – Floodlighting Illuminance (Lux)

- Light intrusion at the nearest property is less than 2 lux (blue) at ground level, meeting the 10 lux pre-curfew limit for Environmental Zone E3.
- All floodlights will be extinguished after the curfew and therefore lighting intrusion will be 0 lux, meeting the 2 lux post-curfew limit for Environmental Zone E3.

Post Installation Monitoring

To verify that the floodlighting system performs as expected post-installation, the following monitoring steps are proposed:

- Commissioning tests: Upon installation, the lighting system will be tested for lux levels, alignment, and compliance with the approved lighting plan.
- User feedback: Reports of nuisance or light intrusion (if any) will be reviewed through the club's management structure and, if substantiated, may trigger re-alignment or dimming of affected luminaires.
- Curfew enforcement records: The intelligent control system will log usage to confirm compliance with operational limits and ensure no inadvertent after-hours illumination occurs.

This monitoring strategy ensures that both ecological and residential protections remain robust over the operational lifespan of the facility.