

Lossiemouth Skatepark Initiative

Planning Statement & Light Impact Assessment

Floodlighting Installation

Opening Statement

Abacus Lighting are working alongside the Lossiemouth Skatepark Initiative to seek planning consent on a newly proposed Skatepark, which will be located just off Elgin Road (refer to site plan/lighting design for exact location).

Lossiemouth Skatepark Initiative sits as a sub group of Lossiemouth Community Development Trust. Our aim is to progress and deliver a skatepark for the town. The proposed surf-skatepark will be a top-quality, free-to-use sports facility for the people of Lossiemouth and the surrounding area, for people of all ages and abilities.

The site is in a central, easily accessible location with a bus stop situated directly opposite it. A playpark, football pitch and playing fields sit adjacent to the site which enhances its accessibility. The site has the advantage of being in a safe location for children to use, and is visible from all surrounding angles.

Due to a lack of free facilities in Lossiemouth, we foresee the skatepark being very successful and well used.

A lighting scheme is required to ensure year round use of the facility. Scotland has many dark months and this would reduce evening/after school use. The skatepark lighting system would increase safety to park users and also enhance aesthetics of the skatepark to the general public.

Abacus Design Outline

In designing a suitable floodlighting solution key specification issues had to be considered. These included the illuminance level required, the environmental zone category for the site, the minimum mast height & the number type of floodlights. Details of how these issues were resolved are as follows:-

1. To ascertain the illuminance level required we referred to the British standard requirements for an exterior Skatepark, however there is no set specification for a Skatepark. Therefore, we used a similar sport (similar in terms of speed, size of area, and size of moving items), and determined that a maintained average illuminance of 100 lux, with a uniformity of 0.5 would be more than suitable for community use.
2. For the relevant environmental zone reference was made The Institution of Lighting Engineers: *Guidance Notes for The Reduction of Light Pollution, 2000* (as attached). This document categorises the environment into four zones ranging from National Parks to City Centres. This site would fall into Zone E3 for a suburban locations.
3. The mast height was calculated using the method detailed in the CIBSE guide LG4 "Sports Lighting". This uses angles projected from the centre of the pitch & the touch line to produce a head frame location zone. When applied to this project the optimum mast height ranged from 12m to 8m for the Pitch. An 8m mounting height was chosen as it would allow the floodlights to be mounted horizontally. This will result in low vertical overspill & good uniformity on the playing surface, without compromising cost. The 10m column will offer a slim line profile which will minimise daytime impact. If the mounting height was reduced to any lower than 10m the floodlights would be elevated above the horizontal consequently increasing overspill and glare.
4. In order to meet the requirements of The Institution of Lighting Engineers: *Guidance Notes for The Reduction of Light Pollution, 2000*, the Abacus AL7000 Vela LED floodlight, was chosen as being suitable. Details of the main features of this product are highlighted below.

Product Specification – AL7000 Vela LED Floodlight

Benefits

- Ease of maintenance and replacement of parts due to the modular construction
- Effective light control and low light output ratio (ULOR) with the design of the outer body and canopy

Technical features

- Various wattages available between: 196W - 609W
- 250W driver (IP67)
- Colour temperature: 5000K
- CRI: 70
- Cree / Philips Lumileds
- Single phase 230V
- Single plug and play high quality connector for power and controls
- Running current: 700 mA
- Lumens per watt circa 102.5+lm / W
- 1-10V dimming available as standard
- Three distribution types available: narrow, medium, wide
- Low upward light output ratio (ULOR)
- Die cast aluminium black LED modules
- 3mm sheet aluminium outer body
- Polyester power coated body as standard, finished silver (RAL 9006)
- Mounting bracket options: under slung or over slung
- Modular construction

For full details of dimensions, specification and an image please see the colour brochure enclosed.

Abacus Lighting Design

Our proposals can be seen on lighting scheme UKS17201_A which is attached.

The Abacus lighting proposals are detailed on the design, these show the mast locations, floodlight orientations, illuminance levels on the pitch & projected overspill values.

The design achieves an illuminance value of 100 lux on the playing area, the maintained illuminance values are calculated using a maintenance factor of 0.90. This takes into account light losses due to dirt accumulation on the floodlight front glass & lamp lumen depreciation, ensuring that the minimum requirements for safe play are achieved.

The use of the Vela LED floodlight ensures that horizontal & vertical overspill containment is excellent. As less than 10 Lux vertical illuminance will be projected towards any residential property windows the system will exceed the requirements for an environmental zone E3 location. Upward waste light will also be minimised & at the floodlight elevations used less than 5% will be projected into the atmosphere. This will meet the recommendations of The Campaign For Dark Skies, an organisation who lobby for low light pollution systems & recommend the use of Abacus Challenger 1 systems. The performance of the AL6000 floodlight has allowed us to minimise the impact of the light on the surrounding woodland area, however given the close proximity of this some spill light is to be expected.

All design calculations have been undertaken using an open, unobstructed site, the values of overspill will be further reduced any existing mature trees or natural screening.

Conclusion

The proposed system would be suitable for installing in an environmental zone E3, meeting the most stringent of light control parameters whilst maintaining the specified illuminance levels for the sports pitch.

The impact on residents will be minimised as overspill values into gardens will be no more than moonlight & vertical illuminance into windows before curfew are below the values recommended by the ILP. Daytime visual impact will also be minimised by using slim line masts & light grey floodlights which do not stand out against the skyline.

Once installed the AL7000 series light control system will provide the optimum sports lighting solution, ensuring that light reaches the sports surface & not into the sky or polluting the environment.

Our scheme will significantly reduce overspill light, decrease glare and fundamentally reduces the impact on the environment and local residents.

Abacus Lighting Limited are world leaders in the design & manufacture of low pollution exterior lighting solutions. For further information regarding Abacus low light pollution products please contact our Head Office on 01623 511111 or visit www.abacuslighting.com.

For and on behalf of Abacus Lighting Ltd

Josh Egginton | Abacus Lighting
Key Account Executive - UK Sport

Oddcroft Lane, Sutton-in-Ashfield,
Nottinghamshire, NG17 5FT, United Kingdom
Tel: (Office) +44 1623 511 111 | Mob: +44 7970 100771

www.abacuslighting.com | jegginton@abacuslighting.com

