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EXTERNAL LIGHTING STATEMENT

Proposed Employment Development

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Executive Summary

This External Lighting Statement has been prepared to support the planning application submitted by Bericote Properties Limited, for the Proposed Employment Development, Bognor Regis.

The proposed development will comply fully with Arun District Council Local Plan Document: Quality of environment 21.3; *Policy QE DM2 Light pollution*.

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1 INTRODUCTION & BACKGROUND

This external lighting statement forms part of the accompanying documentation to support the planning application for the Proposed Employment Development, Bognor Regis.

This statement demonstrates how the proposed development will meet the requirements set out in the Arun District Council Local Plan Document: Quality of environment 21.3; *Policy QE DM2 Light pollution*.

1.1 Background

Light pollution

- 1.1 Similar to noise pollution, light pollution can cause sleep disturbance and annoyance and is caused by the brightening of the night sky over inhabited areas and excessive brightness from light causing high levels of glare. Dark night skies are important for health and wellbeing, the conservation of natural habitats and for cultural heritage, especially the ability to observe the stars at night.
- 1.2 In addition to impacting upon human health and natural habitats, light pollution is a sign of wasted energy from excessive lighting from high-energy bulbs. The Campaign to Protect Rural England (CPRE) produced maps of the night skies in the South East in 1993 and 2000. The maps show that only 1% of the region experienced truly dark night skies and that most of Arun experienced relatively bright night skies.
- 1.3 Lighting schemes must therefore be designed carefully as part of the overall development proposal to prevent light spillage and glare. Schemes will be considered against the latest national guidance and lighting standards.
- 1.4 The Green Infrastructure Policy identifies a District wide network of green spaces and Green Infrastructure Corridors valued for their tranquility. Tranquil spaces play a multifunctional role as part of the Green Infrastructure network. Light pollution intrudes upon intrinsically dark landscapes and nature conservation and can have an impact upon the tranquility of a place. The Green Infrastructure policy has identified the importance of tranquil spaces, which will be protected from light pollution to ensure that areas defined by their tranquility are protected from the negative effects of light in development.

Policy QE DM2 - Light pollution

Planning permission for proposals, which involve outdoor lighting, must be accompanied by a lighting scheme prepared according to the latest national design guidance and relevant British Standards publications. Outdoor lighting schemes will be considered against the following criteria:

- a. No adverse impact on neighbouring uses or the wider landscape;
- b. Light levels being the minimum required for security and working purposes;
- c. Minimising the potential glare and spillage; and
- d. The degree to which out-door lighting can be powered by on-site renewable sources.

Where appropriate, the Local Planning Authority will seek to control the times of illumination. Developments shall also be consistent with all other Local Plan policies.

2.0 The Development Site

- 2.1 This document has been prepared following consultation with the Local Planning Authority to support the planning application for the Proposed Employment Development, Bognor Regis; and sets out the building external lighting strategy as aligned with the requirements of Arun District Council Local Plan Document.
- 2.2 To the northern, eastern and western boundaries of the proposed development site, there are predominantly open land, farm development buildings and local roads (Shripney Road A29). A caravan park is situated beyond the A29 to the west. The proposed lighting installations will have to take account of nearby roads to minimize glare and minimize light spillage onto adjacent plots/buildings.
- 2.3 To the southern boundary of the proposed development site there is an industrial estate, and local roads (Rowan Way). The proposed lighting installations will have to take account of nearby roads to minimize glare and minimize light spillage onto adjacent plots/buildings.

3.0 Assessment of the Need for Lighting

- 3.1 Notwithstanding the legislative requirements to provide adequate means of illumination to prevent the occurrence of dangerous incidents. The external lighting is a requirement to prevent vehicular and pedestrian incidences.
- 3.2 The three key issues that drive the requirement for artificial lighting in the developers service yards are:
- Safety of vehicular and pedestrian movement;
 - Security of property and goods; and
 - Extension of working practices;
- 3.3 The occupier will not operate the development without external lighting because the perceived operational risks are too high. External service yards are sometimes at their busiest during the hours of darkness. The risk to personal injury or property damage from vehicular or product movement is high.
- 3.4 The safety and loss prevention benefits of providing external lighting outweigh any positives for not providing external lighting.
- 3.5 Lighting in itself is not a problem; it only becomes a problem where it is excessive, poorly designed or badly installed¹. Additional control measures for providing artificial external lighting have been considered, and will be incorporated into the external lighting design, where required. Refer to Section 6 of this report for a list of the control measures to be incorporated into the lighting design

¹ Lighting in the Countryside, Towards Good Practice: 2006

4.0 Lighting Standards

4.1 The following external lighting standards and guidance documents will form the basis for assessment of the minimum lighting design standard to be provided for the development:

- British Standards:
 - BS 5489, 1:2003 Code of Practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas
 - BS EN 13201, 2:2003 Road lighting – Part 2: Performance requirements
- Countryside Commission/DOE:
 - Lighting in the Countryside: Towards good practice
- CIBSE Lighting Guides:
 - LG1, The Industrial Environment (1989)
 - LG6, The Exterior Environment (1992)
- CIE Publications:
 - 92, Guide for floodlighting (1992)
 - 126, Guidelines for minimizing Skyglow (1997)
- ILE/CIBSE:
 - Lighting the Environment - A guide to good urban lighting
 - Guidance Notes for the Reduction of Obtrusive Light GN01 (2005)

5.0 Design Standards

5.1 The whole of the Lighting shall be designed to achieve the following maintained illuminances at floor level:

Loading docks (exc. Side of loading canopy)	20 lux
Loading canopy	20 lux
Access roadways	BS 5489
Car parks	30 lux
Hard standing areas	30 lux
Main entrances	50 lux
HGV parking areas	10 lux
Gatehouse Area	50 lux
Transfer areas	50 lux

5.2 The whole of the external lighting installation shall achieve a minimum light level of 5 lux.

5.3 The uniformity ratio of the whole of the lighting installation shall be 0.35.

- 5.4 Floodlighting to the service yards will comprise a combination of lighting columns around the site perimeter, at a height not to exceed 12m mounting height; and preferably be 8m high, and building mounted floodlights, mounted along the elevations at a height not to exceed 10m; and preferably be mounted at 8m high.
- 5.5 The proposed external lighting installation will be designed in accordance with the environmental zone classification E3 that is set out within ILE guidance for reduction of light pollution². The table below is an extract from the ILE guidance note and sets out the environmental zone classifications for different environmental conditions. We have adopted the obtrusive light limitations for this external lighting installation as prescribed for a E3 classification.

TABLE 1 – OBTRUSIVE LIGHT LIMITATIONS FOR EXTERIOR LIGHTING INSTALLATIONS							
Environmental Zone	Sky Glow ULR [Max %]	Light into Windows E_v [Lux] (1)		Source Intensity I [kcd] (2)		Building Luminance Before curfew (3)	
		Before curfew	After curfew	Before curfew	After curfew	Average, L [cd/m ²]	Maximum L [cd/m ²]
E1	0	2	1*	0	0	0	0
E2	2.5	5	1	20	0.5	5	10
E3	5.0	10	2	30	1.0	10	60
E4	15.0	25	5	30	2.5	25	150

Notes:

Environmental Zone classification:

E1: Intrinsically dark areas - National Parks, Areas of Outstanding Natural Beauty, etc

E2: Low district brightness areas - Rural or small village locations

E3: Medium district brightness areas - Small town centres or urban locations

E4: High district brightness areas - Town/city centres with high levels of night-time activity

ULR = Upward Light Ratio of the Installation and is the maximum permitted percentage of luminaire flux for the total installation that goes directly into the sky.

E_v = Vertical Illuminance in Lux normal to glazing Light Intensity in Candelas

L = Luminance in Candelas/m²

(1) Light Into Windows – These values are suggested maximums and need to take account of existing light trespass at the point of measurement.

* Acceptable from public road lighting installations ONLY.

(2) Source Intensity – This applies to each source in the potentially obtrusive direction, *outside* of the area being lit. The figures given are for general guidance only and for some large sports

² The Institution of Lighting Engineers (ILE) Guidance Notes for the Reduction of Light Pollution: 2003

lighting applications with limited mounting heights, may be difficult to achieve. If the aforementioned recommendations are followed then it should be possible to further lower these figures.

(3) Building Luminance – This should be limited to avoid over lighting, and relate to the general district brightness. In this reference building luminance is applicable to buildings directly illuminated as a night- time feature as against the illumination of a building caused by spill light from adjacent floodlights or floodlights fixed to the building but used to light an adjacent area.

- 5.6 The CIBSE recommendation for illuminating loading bay canopies is 150 Lux. However, the landlord has agreed to reduce this requirement for this site to 20 Lux. The diagram below indicates the position of luminaires placed on canopies above loading bays for safety purposes.

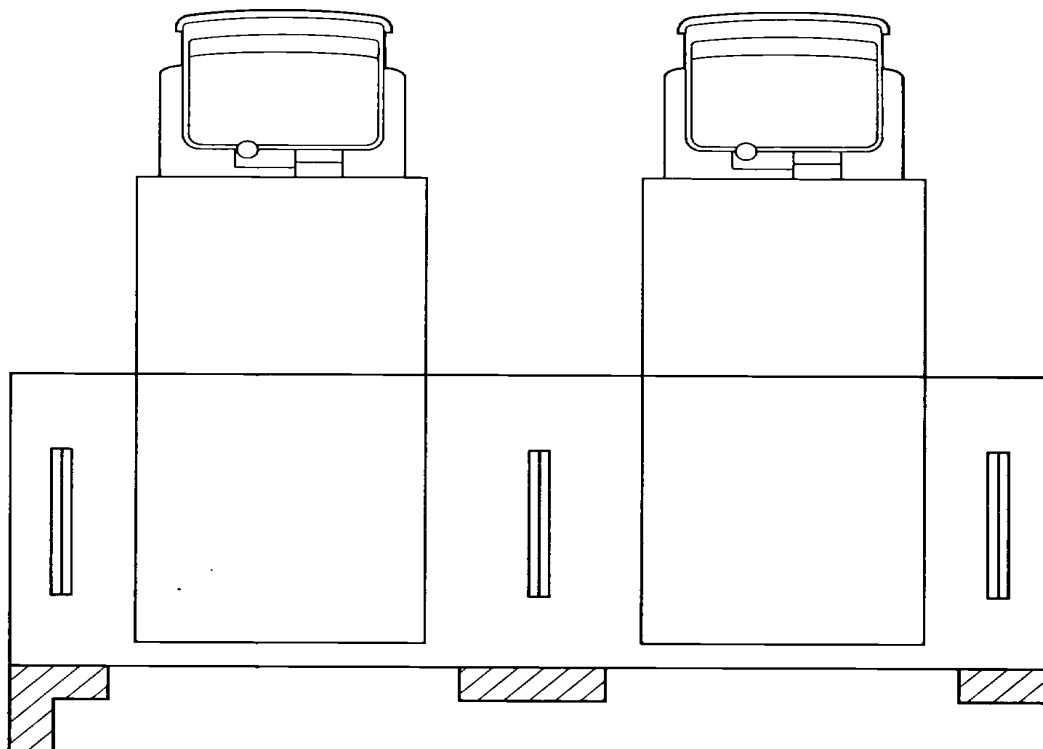


Diagram 1: Correct positioning of canopy loading bay lighting

6.0 Control Measures

- 6.1 This section describes the particular control measures that this site will incorporate to minimise light spillage, trespass and pollution.
- 6.2 The external lighting shall be time controlled to ensure that the lighting installation only operates within the specified operating hours, and to provide a facility to switch part of the external lighting installation off during periods of low activity.
- 6.3 In addition, the external lighting installation shall incorporate a photo-electric cell control, to prevent the lighting installation operating during the hours of daylight, thus conserving energy and minimizing carbon emissions. The photo-electric cell set-point threshold shall be set at 50 lux.
- 6.4 A manual override control facility will be provided for testing and maintenance purposes only.
- 6.5 The whole of the external lighting installation will comply with the performance requirements set out within the ILE guidance note for reduction of light pollution.
- 6.6 The external lighting design will not incorporate any luminaires that have aiming angles beyond the horizontal working plane.
- 6.7 Measures shall be taken to eliminate light spillage onto adjacent land from luminaires positioned on the development site.
- 6.8 Illuminance levels will be reduced to the absolute legal minimum to conserve energy and to minimize light pollution.
- 6.9 The design shall incorporate measures to prevent light spillage onto adjacent land.
- 6.10 Where practically possible, all luminaires facing out of the development will be positioned to minimize direct visual contact with the lamp source