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External Lighting Assessment

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Project:  
Gladman Park  
Tankersley

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Issue: One  
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11 The Shambles  
Wetherby  
LS22 6NG

Telephone: 01937 585082  
Email: [office@mrb.uk.net](mailto:office@mrb.uk.net)

BREEAM Consultancy  
Registered CIBSE Low Carbon Consultants

## 1.0 Introduction

The aim of this document is to provide an indicative external lighting strategy for the external operational lighting to support the development planning application.

The strategy is for an external lighting scheme that provides safe levels of illumination to support the proposed use of the site whilst mitigating the impact of the lighting in terms of obtrusive light and light pollution.

The planning stage strategy adopts the principles and guidance set out in the following Codes of Practice:

- BS 5489-1 2003: Code of Practice for the design of road lighting, lighting of roads and public amenity areas.
- Institution of Lighting Engineers (ILE): Guidance notes for the reduction of obtrusive light.

## 2.0 Explanation of Guidance

### 2.1 General

The following section provides a précis of the relevant points from the adopted guidance.

### 2.2 BS 5489-1 2003: Lighting Levels

Recommends a maintained average lighting level of 20lux with a uniformity ratio of 25%.

### 2.3 ILE Guidance: Reduction of Obtrusive Light

The site is taken to be classified as being an E3 Environmental Zone. In this respect Table 1 of the ILE guidance note recommends the following criteria:

Table 1: ILE Guidance Notes for the Reduction of Obtrusive Light GN01 (2005)

| Environmental Zone | Sky Glow UWLRL (Max. %) | Light into Windows EV |              | Source Intensity I(cd)** |              | Building Luminance *** L(cd/m <sup>2</sup> ) Av. Before Curfew |
|--------------------|-------------------------|-----------------------|--------------|--------------------------|--------------|----------------------------------------------------------------|
|                    |                         | Before Curfew         | After Curfew | Before Curfew            | After Curfew |                                                                |
| E1                 | 0                       | 2                     | 1*           | 2,500                    | 0            | 0                                                              |
| E2                 | 2.5                     | 5                     | 1            | 7,500                    | 500          | 5                                                              |
| E3                 | 5                       | 10                    | 2            | 10,000                   | 1,000        | 10                                                             |
| E4                 | 15                      | 25                    | 5            | 25,000                   | 2,500        | 25                                                             |

Notes to Table 1.

Where:

E1 – National parks, areas of outstanding beauty, other dark landscapes (countryside).

E2 – Areas of low district brightness (urban fringe, rural location).

E3 – Areas of medium district brightness (urban location, town).

E4 – Areas of high district brightness (urban centre with high night time activity, city).

UWLR (Upward Waste Light Ratio) = Maximum permitted percentage of luminaire flux that goes directly into the sky.

EV = Vertical illuminance in Lux.

I = Light intensity in Candelas.

L = Luminance  $\text{cd/m}^2$ .

Curfew = The time after which stricter requirements (for the control of obtrusive light) will apply.

\* Acceptable from public road lighting installations only (otherwise 0 lux applies).

\*\* Source intensity – this applies to each source in the potentially obtrusive direction, outside the area being lit. The figures given are for general guidance only and on some medium to large lighting applications with limited mounting heights they may be difficult to achieve. The choice of correct lanterns will reduce this to a minimum.

\*\*\* Building luminance – this will be limited to avoid over lighting and relate to the general district brightness.

All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours.

Where safety or security lighting is provided and will be used between 2300hrs and 0700hrs, this part of the lighting system will comply with the lower levels of lighting recommended during these hours in Table 1 of the ILE's Guidance notes, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier.

### 3.0 Preliminary Design Proposals

The preliminary design proposals are indicated on MRB drawing W631/EX001 which forms part of the planning submission.

Light fitting selection will concentrate on high efficacy light sources, with highly controlled optics to ensure a uniform downward light distribution for minimising unwanted obtrusive light spill.