

Lighting Assessment

**Site Address: Land Adjacent To Lane End House, Shinfield Road,
Shinfield, RG2 9BB**

Local Authority: Wokingham Borough Council

Date: 21 November 24

Ref: LA/SB/REV-A

Clarification

This Lighting Assessment has been prepared for our client as stated within our appointment only and expressly for the purposes set out in an appointment and we owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in writing and signed, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. This report has been based solely on the specific design assumptions and criteria stated herein.

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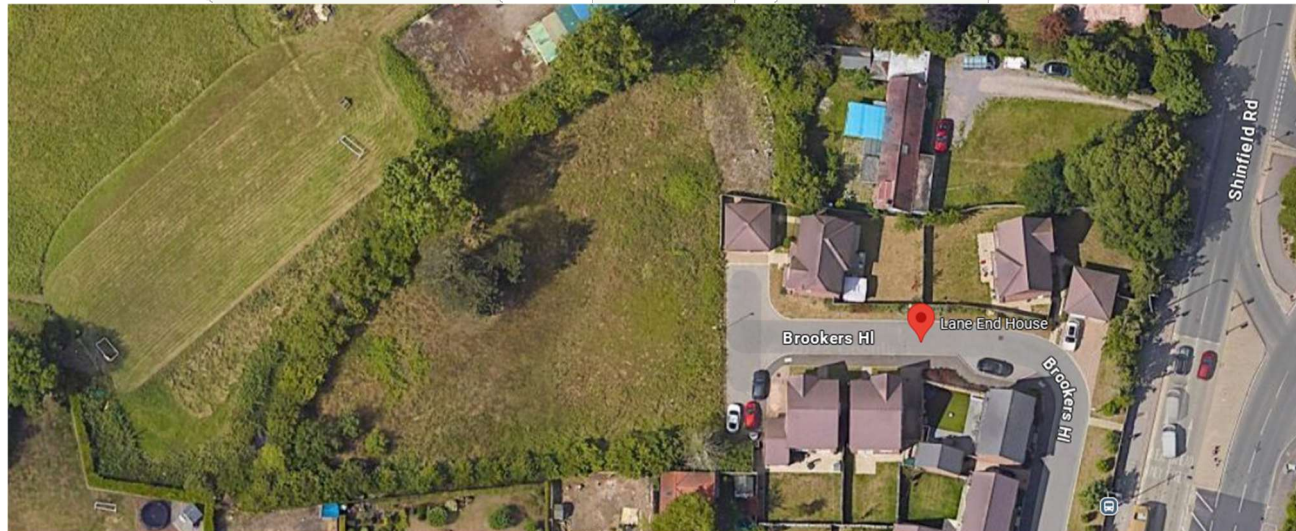
1.0 Introduction

1.1 This report is submitted in response to planning condition 9 “Lighting Scheme” relating to the proposed residential development (app ref 222304) and describes the indicative exterior lighting works to be provided at the proposed new development (the Proposed Development) based on the layout submitted with the application.

1.2 The assessment details the key principles that the exterior lighting design follows. These principles are in place to ensure adequate illumination of external areas, and that the design meets the criteria of the documents detailed in Table 1.

1.3 Accompanying this assessment are lighting calculations (Appendix A) and an indicative lighting strategy (Appendix B). These have been prepared to demonstrate that the exterior lighting at the proposed development has a minimal impact on the environment.

1.4 Site Location (Google Maps 2024):



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2.0 Lighting Criteria

2.1 Standards and Guidance

2.1.1 An exterior lighting system is required to for security purposes and to facilitate safe movement around the Proposed Development for all users. Exterior lighting is to be in accordance with the below list of documents and site-specific design criteria:

Table 1: Standards and Guidance Documents

Document Reference	Document Title
1	ILP Guidance Notes for the Reduction of Obtrusive Light GN01:2020
2	ILP and BCT GN08:2018 Bats and artificial lighting in the UK

2.2 Luminaire Selection and shielding

2.2.1 The following lighting fixtures were selected. They have been compared against the lighting standards and applicable guidance notes.

Table 2: Luminaire Specification and shielding examples

Luminaire	Proposed Locations	Characteristics		Image
Orlight Downlight (only) 3010-S Black	Front of proposed property. Mounted 2.2m above ground level. To be controlled via movement sensor.	Upward Light:	0%	
		Wattage:	5W	
		Colour temperature:	3000K (Warm White)	

Bega Lighting 24 370 K3 Wall Light Graphite.	Property perimeter 2.2m above ground level. To be controlled via movement sensor.	Upward Light:	0%	
		Wattage:	8W	
		Colour temperature:	3000K (Warm White)	
	Parking area. To be controlled via movement sensor.	Upward Light:	0%	
		Wattage:	2.3W	
		Colour temperature:	3000K (Warm White)	
Bega Lighting 77 237 K3 Bollard Light Graphite				

2.2.2 Energy efficiency – the design has considered appropriate optic settings for the development layout ensuring (as practicable as possible) light is only provided where required.

2.2.3 Light pollution (vertically and horizontally) has been minimised as much as possible through careful luminaire selection. The design follows the principles set out in the ILP Guidance Notes for the Reduction of Obtrusive Light GN01:2020 and conforms with the below:

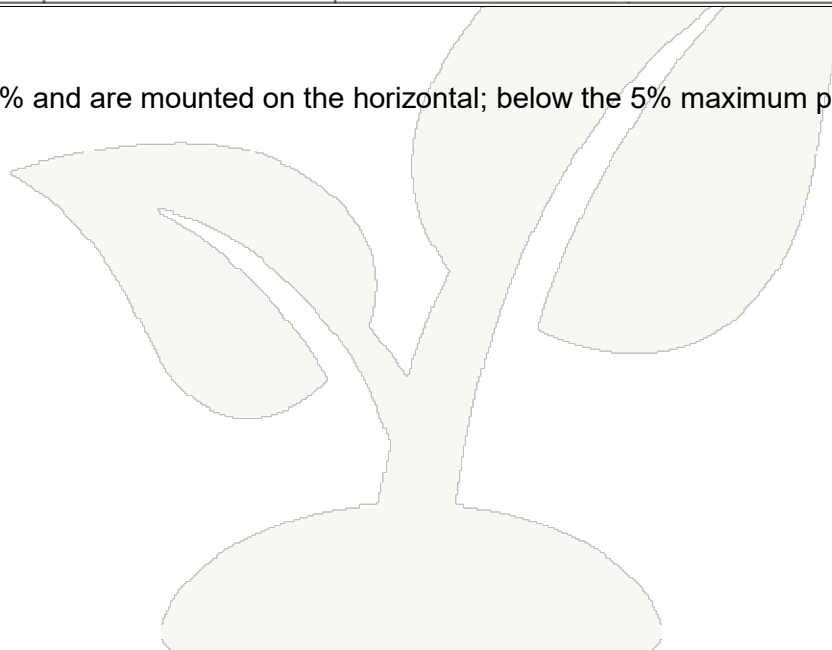
Table 3 (Table 3 GN01/20): Maximum values of vertical illuminance on properties.						
Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance on the vertical plane (E _v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx	1 lx	2 lx	5 lx

2.2.4 The proposed site is considered under Environmental Zone E3 (medium district brightness). The proposals conform with this.

2.2.5 Upward Light Ratios

Table 4 (Table 6 GN01/20) Maximum values of upward light ratio (ULR) of luminaires.					
Light technical parameter	Environmental zone				
	E0	E1	E2	E3	E4
Upward Light Ratio (ULR %)	0	0	2.5	5	15

2.2.6 All proposed units have an ULR of 0% and are mounted on the horizontal; below the 5% maximum permitted.



3.0 Ecology

3.1.1 The lighting proposals consider the impact on bats and other surrounding wildlife.

3.2 The following section reviews the ILP and BCT Guidance Note 08/18 Bats and artificial lighting in the UK recommendations for appropriate luminaire specification.

- **Recommendation 1:** All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.

Lighting Proposal: All proposed lighting utilises an LED light source to avoid light sources with high UV content.

- **Recommendation 2:** LED Luminaires should be used where possible due to their sharp cut off, lower intensity, good colour rendition and dimming capability.

Lighting Proposal: All luminaires specified are low wattage LED.

- **Recommendation 3:** Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).

Lighting Proposal: All proposed light sources feature peak wavelengths higher than 550nm, avoiding the light most disturbing to bats.

- **Recommendation 4:** Mounting heights should be carefully considered to minimize light spill.

Lighting Proposal: Maximum mounting height proposed is 2.2m.

- **Recommendation 5:** Luminaires should always be mounted on the horizontal, i.e. no upward tilt.

Lighting Proposal: All luminaires have a 0% Upward Light Ratio (ULR) and are set at the horizontal (0 degree tilt). Spill light can be well-controlled.

4.0 Environmental Residual Effects

The proposed lighting will have a residual effect on the environment, and these will occur at different phases during the project. The residual effects have been assessed below and consider the permanent and temporary effects.

4.2 Operational - Landscape and Visual (permanent impact)

4.2.1 There is a permanent impact on the visual scene and on existing wildlife. With the use of a design practice the impact can be minimised through good design – reducing the number of luminaires required and their height. With the use of modern lanterns and shielding, light is well controlled.

4.2.2 Recommendation: Design prepared in accordance with ILP Guidance on the Reduction of Obtrusive Light and BCT Guidance on Bats and Artificial Lighting.

4.3 Operational - Community (permanent impact)

4.3.1 A well-designed lighting installation will have a positive impact on the local community, providing:

- A reduction in the fear of crime
- Encourage the use of more sustainable modes of transport, such as walking, cycling.

4.3.2 Recommendation: This has been taken into consideration in the layout proposals.

4.4 Construction - Lighting (temporary impact)

4.4.1 Lighting during construction

4.4.2 Recommendation: Where temporary lighting is required for safety and security, contractor to use shrouded lighting angled downwards on a movement sensor. To be further considered and specified in Construction Environmental Management Plan (Planning Condition 10). Temporary lighting design & specification is to be supplied by others and does not form part of this report.

Appendix A – Lighting Calculation Reports

Lighting data & calculation to demonstrate effect on surrounding environment.

Luminaire A Data

Supplier	
Type	ORL3010-S
Lamp(s)	5W
LampFlux(klm)/Colour	0.54 3000K/85
File Name	ORL3010-S.Idt
Maintenance Factor	1.00
Imax70,80,90(cd/klm)	14.7, 7.2, 4.7
No. in Project	6

Luminaire B Data

Supplier	
Type	24370K3
Lamp(s)	463 lm, 10 W
Lamp Flux (klm)	0.46
File Name	BE_24370K3.IES
Maintenance Factor	1.00
Imax70,80,90(cd/klm)	32.6, 2.6, 0.0
No. in Project	20

Luminaire C Data

Supplier	
Type	77237K3
Lamp(s)	155 lm, 3 W
Lamp Flux (klm)	0.15
File Name	BEGA_77237K3.IES
Maintenance Factor	1.00
Imax70,80,90(cd/klm)	101.6, 32.4, 1.3
No. in Project	1

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Appendix A - Luminaire Schedule

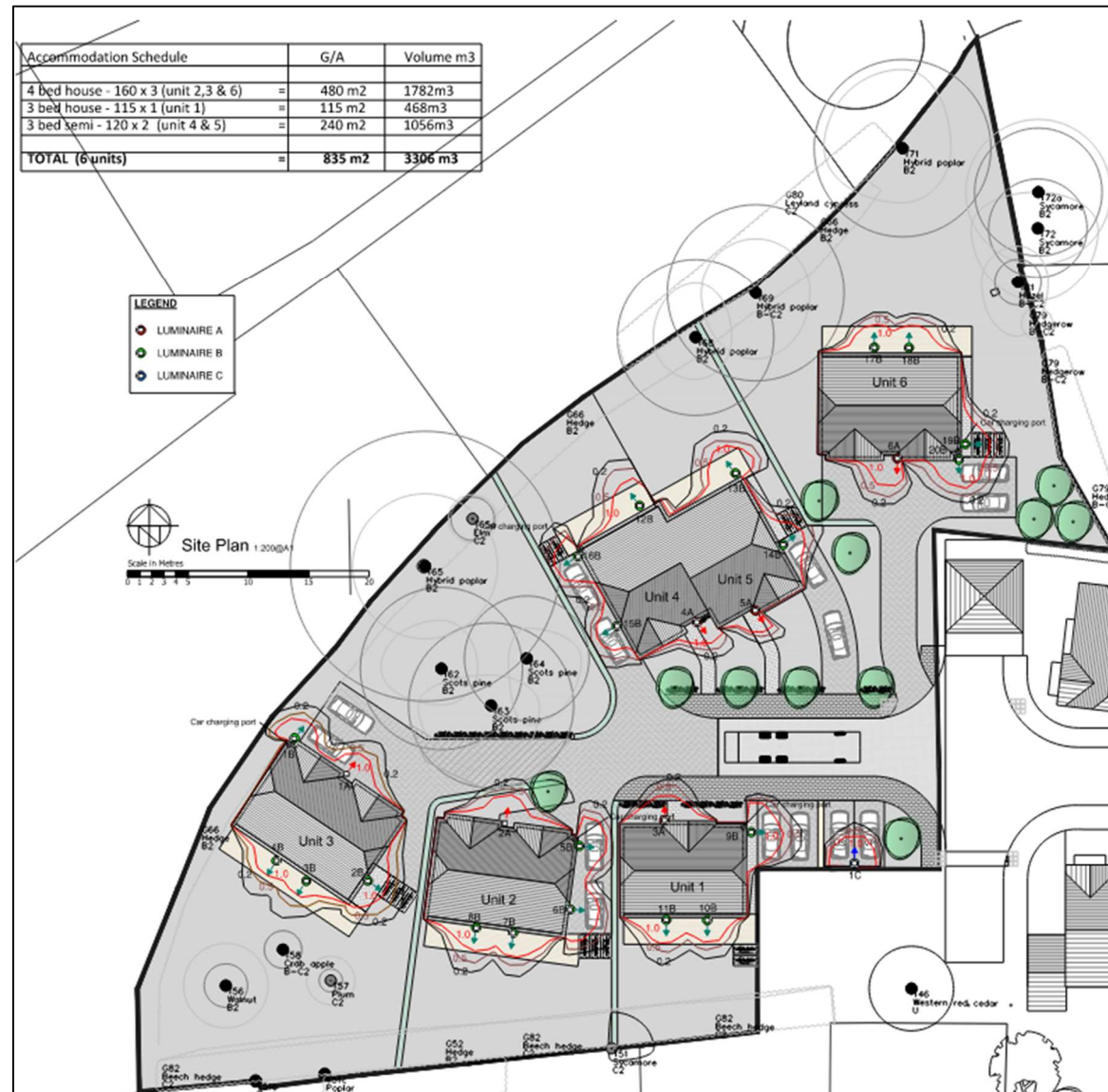
ID	TYPE	HEIGHT
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2A	A	2.2
3A	A	2.2
4A	A	2.2
5A	A	2.2
6A	A	2.2
1B	B	2.2
2B	B	2.2
3B	B	2.2
4B	B	2.2
5B	B	2.2
5B	B	2.2
6B	B	2.2
7B	B	2.2
8B	B	2.2
9B	B	2.2
10B	B	2.2
11B	B	2.2
12B	B	2.2
13B	B	2.2
14B	B	2.2
15B	B	2.2
16B	B	2.2
17B	B	2.2
18B	B	2.2
19B	B	2.2
20B	B	2.2
1C	C	0.9

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Appendix B

Horizontal Illuminance -

Site Overview



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Appendix B

Horizontal Illuminance - Northern Side



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