



**LIGHTING STRATEGY REPORT**

**PROPOSED DEVELOPMENT**

**AT**

**ST CLARE BUSINESS PARK**

**VERSION 2.0**

**Issued by:-**

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## PROJECT REVISION SHEET

# ST CLARE BUSINESS PARK

170209

### Revision 1.0

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V1	23-03-2020		Comments	PR	PL
V2	08.06.2022		Updated Scheme	SK	NP

## 1. Introduction

This report sets out the lighting design criteria and proposed strategy that will be applied for the new installation of the external artificial lighting scheme at the proposed development at St Clare Business Park Richmond for residential and commercial development.

## 2. Planning Policy

**London Plan Part A Policy D 8**

**London Borough of Richmond Upon Thames Local Plan July 2018**

**Policy LP 10**

### **Light Pollution**

D. The Council will seek to ensure that artificial lighting in new developments does not lead to unacceptable impacts by requiring the following, where necessary:

1. an assessment of any new lighting and its impact upon any receptors;
2. mitigation measures, including the type and positioning of light sources;
3. promotion of good lighting design and use of new technologies.

## 3. The Site

The site of the proposed development is bounded by; Windmill Road, Holly Road and the railway line.



The surrounding areas are generally well lit with all surrounding roads having existing street lighting columns.

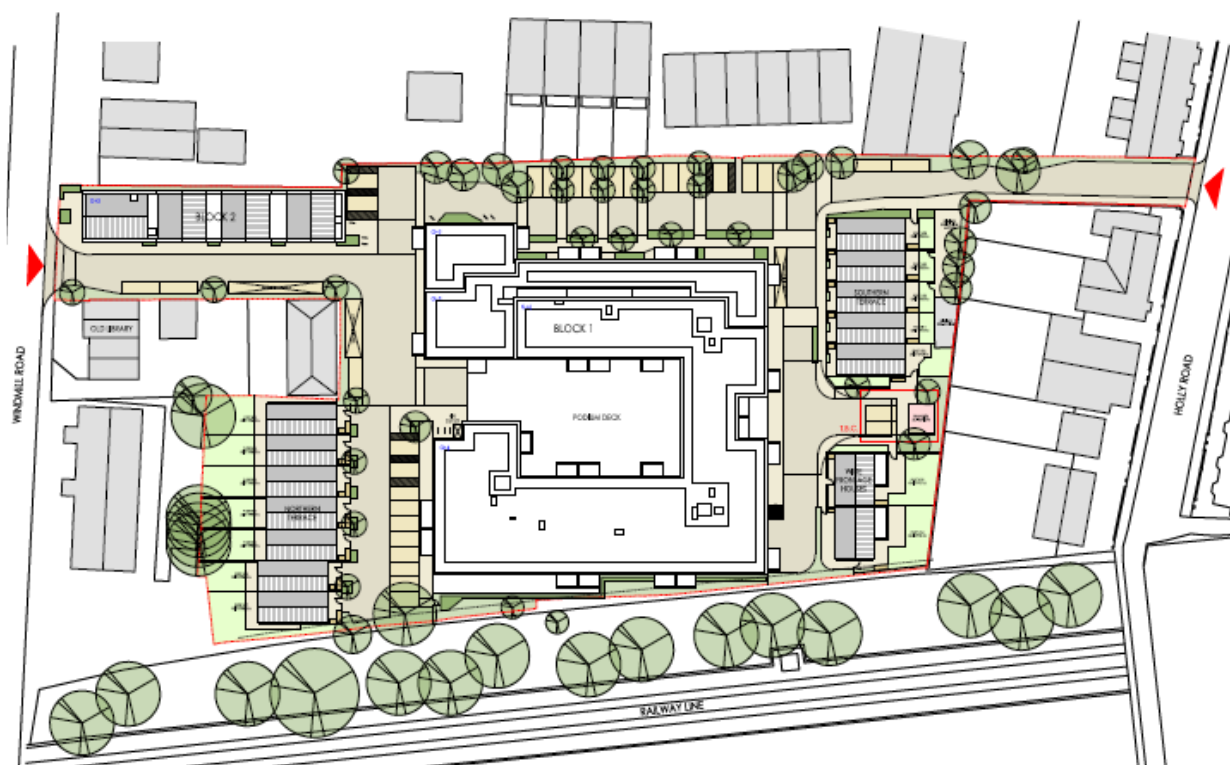


Views of surrounding areas

#### 4. Proposed Development

Demolition of existing buildings and erection of 1no. mixed use building between three and five storeys plus basement in height, comprising 98no. residential flats (Class C3) and 1,172sq.m of commercial floorspace (Class E); 1no. three storey building comprising 893sq.m of commercial floorspace (Class E); 14no. residential houses (Class C3); and, associated access, external landscaping and car parking. Demolition of existing buildings and erection of 1no. mixed use building between three and five storeys plus basement in height, comprising 98no. residential flats (Class C3) and 1,172sq.m of commercial floorspace (Class E); 1no. three storey building comprising 893sq.m of commercial floorspace (Class E); 14no. residential houses (Class C3); and, associated access, external landscaping and car parking.

The following images detail the ground floor spaces, for a detailed description of the development refer to the Design and Access Statement provided by AHR Architects.



Proposed site plan

#### 5. Design Standards

The external lighting to the St Clare development will be designed giving consideration to the following design guides and British standards.

- *BS5489-1:2013* Code of practice for the design of road lighting Part 1: Lighting of roads and public amenity areas.
- *BS EN 13201-2:2015* Code of Practice for the design of road lighting Part 1 Lighting of roads and public amenity areas.
- PD CEN/TR 13201-1:2004, Road Lighting, Guidelines on selection of lighting classes.
- *CIBSE Lighting Guide LG6 Exterior Environment*
- *ILP Guidance Note for the Reduction of Obtrusive Light 2011*
- *Secure by Design Guide 2014 - Section 19 (Street Lighting)*
- *Bats and artificial lighting in the UK ILP Guidance Note 08/18*

## 6. Design Criteria

The external artificial lighting will be designed to the recommendations of BS EN 13201-2:2015 for P classes for areas intended for pedestrians and pedal cyclists as Table 3 from BS EN 13201-2:2015.

**Table 3 — P lighting classes**

Class	Horizontal illuminance		Additional requirement if facial recognition is necessary	
	$\bar{E}^a$ [minimum maintained] lx	$E_{min}$ [maintained] lx	$E_{v,min}$ [maintained] lx	$E_{sc,min}$ [maintained] lx
P1	15,0	3,00	5,0	5,0
P2	10,0	2,00	3,0	2,0
P3	7,50	1,50	2,5	1,5
P4	5,00	1,00	1,5	1,0
P5	3,00	0,60	1,0	0,6
P6	2,00	0,40	0,6	0,2
P7	performance not determined	performance not determined		

<sup>a</sup> To provide for uniformity, the actual value of the maintained average illuminance shall not exceed 1,5 times the minimum  $\bar{E}$  value indicated for the class.

In accordance with PD CEN/TR 13201-1:2004, Road Lighting, Guidelines on selection of lighting classes, the appropriate class for the pedestrian / cycle and motorised traffic areas is P2.

## 7. Reduction of Obtrusive Light

The Institute of Lighting Professionals Guidance Note GN 01 : 2011 make recommendations for the reduction of obtrusive light. Table 1 of the Guidance sets out Environmental Zones to which the recommended criteria is to be applied.

Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark	UNESCO Starlight Reserves, IDA Dark Sky Parks
E1	Natural	Intrinsically dark	National Parks, Areas of Outstanding Natural Beauty etc
E2	Rural	Low district brightness	Village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Small town centres or suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

Based upon the site location, and surrounding environment, it can be assumed that the site should be zoned as an E3, which represents a Medium district brightness area, such as residential suburbs.

GN01:2011 recommends the following criteria based on the selected Environmental Zone.

Environmental Zone	Sky Glow ULR [Max %] <sup>(1)</sup>	Light Intrusion (into Windows) $E_v$ [lux] <sup>(2)</sup>		Luminaire Intensity I [candelas] <sup>(3)</sup>		Building Luminance Pre-curfew <sup>(4)</sup>
		Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	Average, L [cd/m <sup>2</sup> ]
E0	0	0	0	0	0	0
E1	0	2	0 ( 1*)	2,500	0	0
E2	2.5	5	1	7,500	500	5
E3	5.0	10	2	10,000	1,000	10
E4	15	25	5	25,000	2,500	25

The luminaire, type, optics and locations will be selected to not exceed the recommended criteria for an E3 Zone, as scheduled in the above table wherever practicable.

## 8. Lighting Design Concepts and Philosophy

The lighting will be carefully designed to highlight elements throughout, as well as illuminate the development during hours of darkness for safety. Safe routes will be provided along key pathways across site to create a greater sense of security and personal safety within the development.

The main circulation routes and roads will be illuminated by lanterns on circa 4 metre columns to give good vertical illuminance with LED sources providing excellent colour rendering for good facial recognition. The luminaire optics will be selected to direct light away from windows in residential properties and natural habitats with additional directional hoods where necessary to minimise light spill or intrusion.

The external lighting will operate from dusk to dawn controlled by light sensors, with the exception of along the railway elevation where the lighting will be controlled by motion sensors.

All lighting will be by energy efficient LED sources with an efficacy ranging from 70 to 135lm/W.

## 9. Railway Elevation Lighting

In response to the ecology comments, the lighting will be designed to provide a dark corridor along the railway line to the west of the site, as far as reasonably practical by adopting measures recommended in the *ILP Guidance Note 08/18* including;

- External lights will use low-UV warm-white LED sources with directional, downward facing and shielded lights which point away from green features such as the tree line.
- Motion sensor controls will be provided to external lighting to ensure they are only illuminated when needed.
- Balcony lights will be carefully selected to have shielded light sources to minimise light spill beyond the balcony.
- Lights within dwellings facing on the railway line will be provided with LED recessed downlighters where installed in proximity to windows to reduce the risk of light spill and glare to the surrounding areas.
- Louvers will be provided to the openings to the car park to minimise light spill.





Site section

At the detailed design stage, the site lighting will be modelled to confirm predicted lighting intensity and spill with contour plans provided to demonstrate predicted light levels across the site and surrounding areas including the linear dark corridor.

## 10. Conclusion

The proposed external lighting for the St Clare Business Park development will contribute to providing a safe environment, with minimal impact on the surrounding areas including a linear dark corridor to the west of the site boundary by the use of carefully selected luminaires with energy efficient LED sources.