External Lighting Planning Compliance

For the

Residential Development at Hacketstown

At

Hackettstown, Skerries, Dublin

For

Land Development Agency

Date of Issue: 10/03/2022 Revision: 04

Document History

Revision No.	Description	Prepared By	Reviewed By	Date
Rev 01	Issued for Review	SM	NH	30/04/2021
Rev 02	Draft Issue - Updated for revised scheme	SM	NH	28/01/2022
Rev 03	Draft Issue - Updated for revised Landscape scheme	SM	NH	18/02/2022
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1. Introduction

This purpose of this report is to detail the considerations and criteria when developing the proposed street lighting layout for Residential Development at Hacketstown. The proposed lighting layout is indicated on 19105-LDA-AXE-00-XX-DR-60001.

1.1 Planning Overview

[The Land Development Agency, intend to apply to An Bord Pleanála for a ten year permission for a strategic housing development at this site located at Hacketstown in the townlands of Milverton, Townparks and Hacketstown, Skerries, Co. Dublin. The subject lands are accessed via Golf Links Road to the south and Ballygossan Park Phase 1 to the north. The site is bound by the Dublin – Belfast railway line to the west, the Golf Links Road to the east and south, and by individual houses to the east and south. The application site is c. 6.7 hectares.

The development entails 345 no. residential units comprising of 84 no. 1-bed units, 104 no. 2-bed units (68 no. 2-bed apartments and 36 no. 2-bed duplexes), 157 no. 3-bed units (118 no. 3-bed duplexes and 39 no. 3 - bed houses) ranging in height from 2 no. – 4 no. storeys. The proposed development is set out in 8 blocks.

In addition the development includes Public Open Space and communal open space is proposed to serve the apartments, car parking spaces and Childcare and community facility.

2. Proposed Lighting

2.1 Strategy

The strategy and approach to design is

- To provide appropriate lighting along the main roads, footpaths and on the paths in the park areas.
- To provide appropriate lighting to junctions.
- To provide control to the lighting.

2.2 Design

The lighting has been designed based on the following criteria

The lighting is to be powered from a new public lighting supply and a series of minipillars

The lighting class to I.S. EN 13201-2-2015 selected for the design is Lighting Class P3

The road lighting luminaires are to be LED and controlled by individual electronic solid state photocell per luminaire

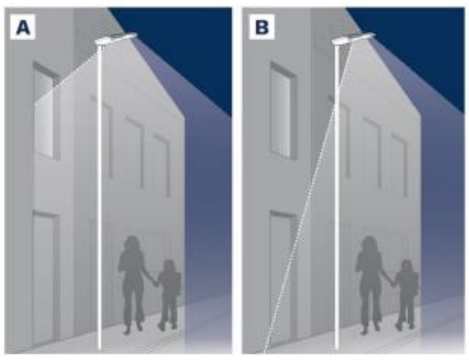
The lighting columns shall be tubular type manufactured from galvanised steel

The light fittings along the riparian zone also consider the bat lighting guidelines – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010);

2.3 Proposed Fittings

The proposed luminaires are as indicated on the proposed lighting layout is indicated on 19105-LDA-AXE-00-XX-DR-60001

The lights near the riparian zone utilise a warmer light and a have a sharp cut off using a Back Light control system which minimises light spill from the back of the luminaire.



A. Without Back Light control | B. With Back Light control

Appendix A – Lighting Calculations

DIALux

Typical Roadway

Luminaire list

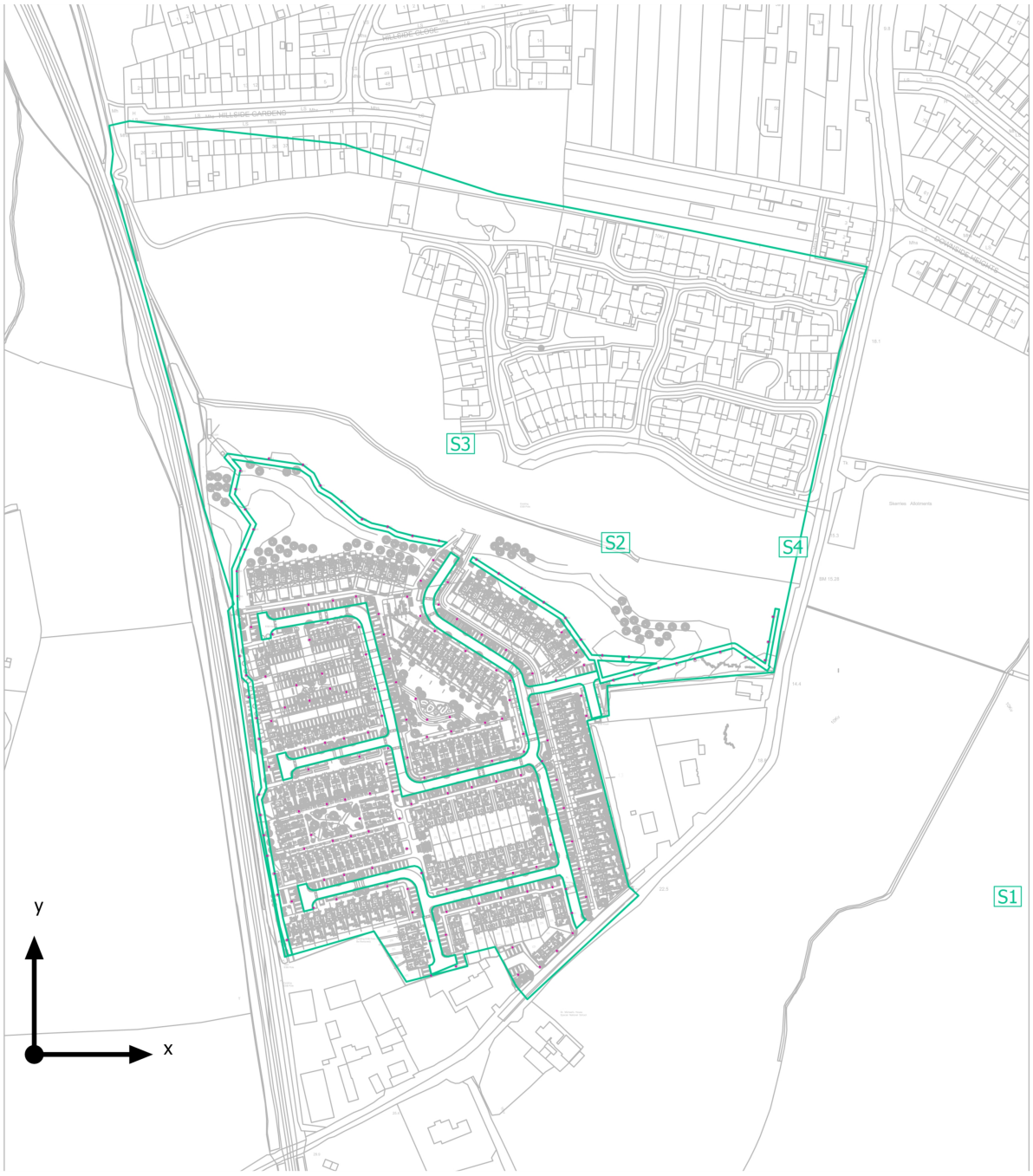
Φ_{total}	P_{total}	Luminous efficacy
356412 lm	2832.5 W	125.8 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
104	SCHREDER	404502	AMPERA MINI 5068 Flat glass GIANT@400mA NW 740 230V 16 OSLON SQUARE 404502	20.6 W	2672 lm	129.7 lm/W
67	SCHREDER	404502	AMPERA MINI 5068 Flat glass GIANT@350mA NW 740 230V 8 OSLON SQUARE 404502	10.3 W	1172 lm	113.8 lm/W

DIALux

Typical Roadway

Calculation objects



Typical Roadway

Calculation objects

Surface result objects

Properties	Ø	min	max	g_1	g_2	Index
Surface result object 1 Perpendicular illuminance (adaptive) Height: 0.000 m	1.77 lx	0.000 lx	65.3 lx	0.00	0.00	S1
Surface result object 1 Luminance Height: 0.000 m	0.11 cd/m²	0.000 cd/m²	4.16 cd/m²	0.00	0.00	S1

Calculation surfaces

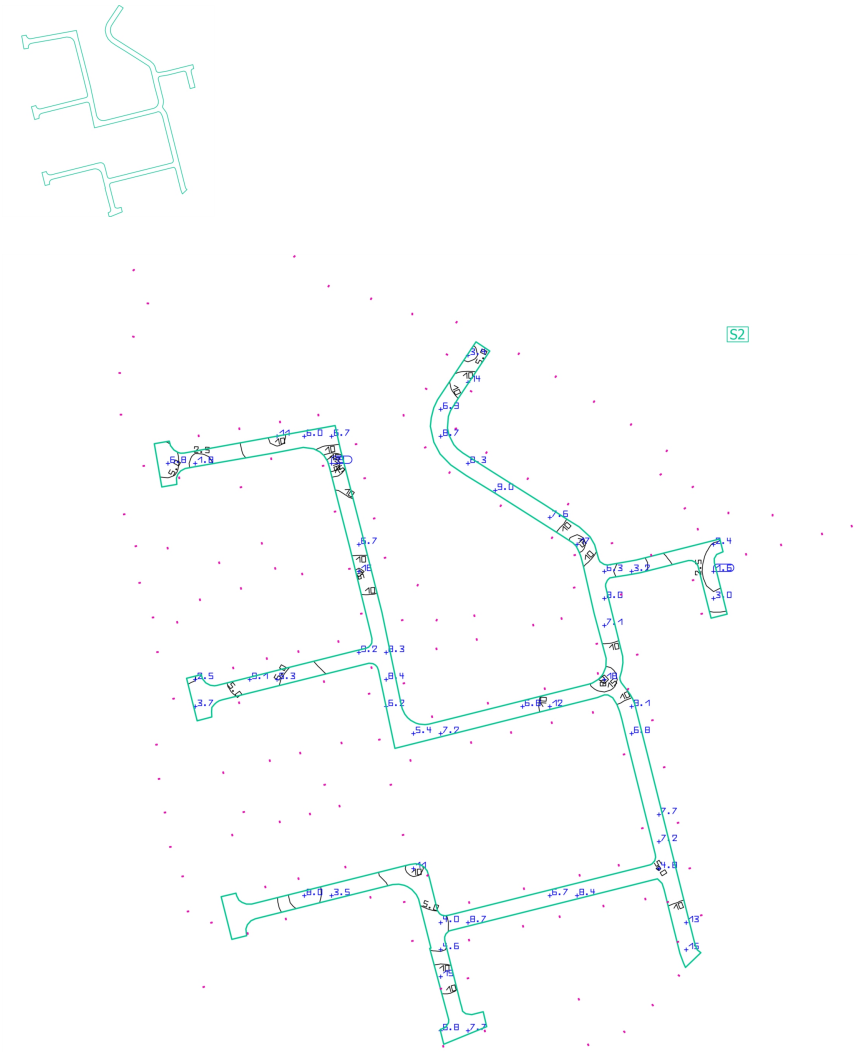
Properties	$\bar{E}$	E_{min}	E_{max}	g_1	g_2	Index
Roadway Calculation Surface Perpendicular illuminance Height: 0.000 m	7.96 lx	1.57 lx	19.5 lx	0.20	0.081	S2
Walkway 1 Perpendicular illuminance Height: 0.000 m	8.94 lx	1.01 lx	27.7 lx	0.11	0.036	S3
Walkway 2 Perpendicular illuminance Height: 0.000 m	6.58 lx	2.06 lx	12.4 lx	0.31	0.17	S4

Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

DIALux

Typical Roadway

Roadway Calculation Surface



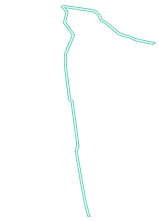
Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Roadway Calculation Surface Perpendicular illuminance Height: 0.000 m	7.96 lx	1.57 lx	19.5 lx	0.20	0.081	S2

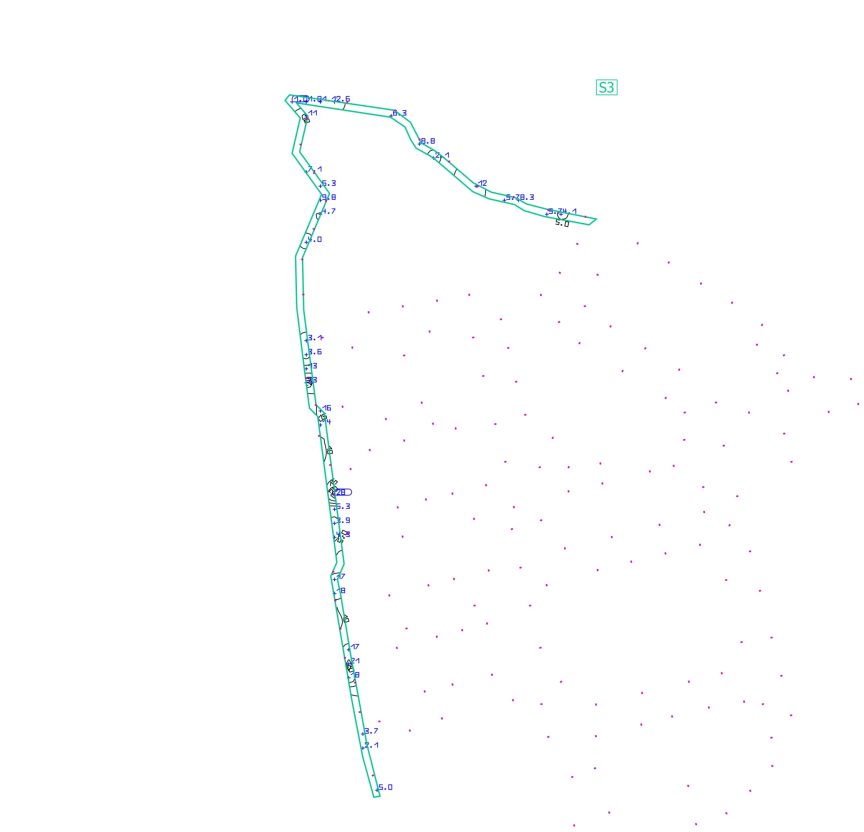
Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

DIALux

Typical Roadway

Walkway 1





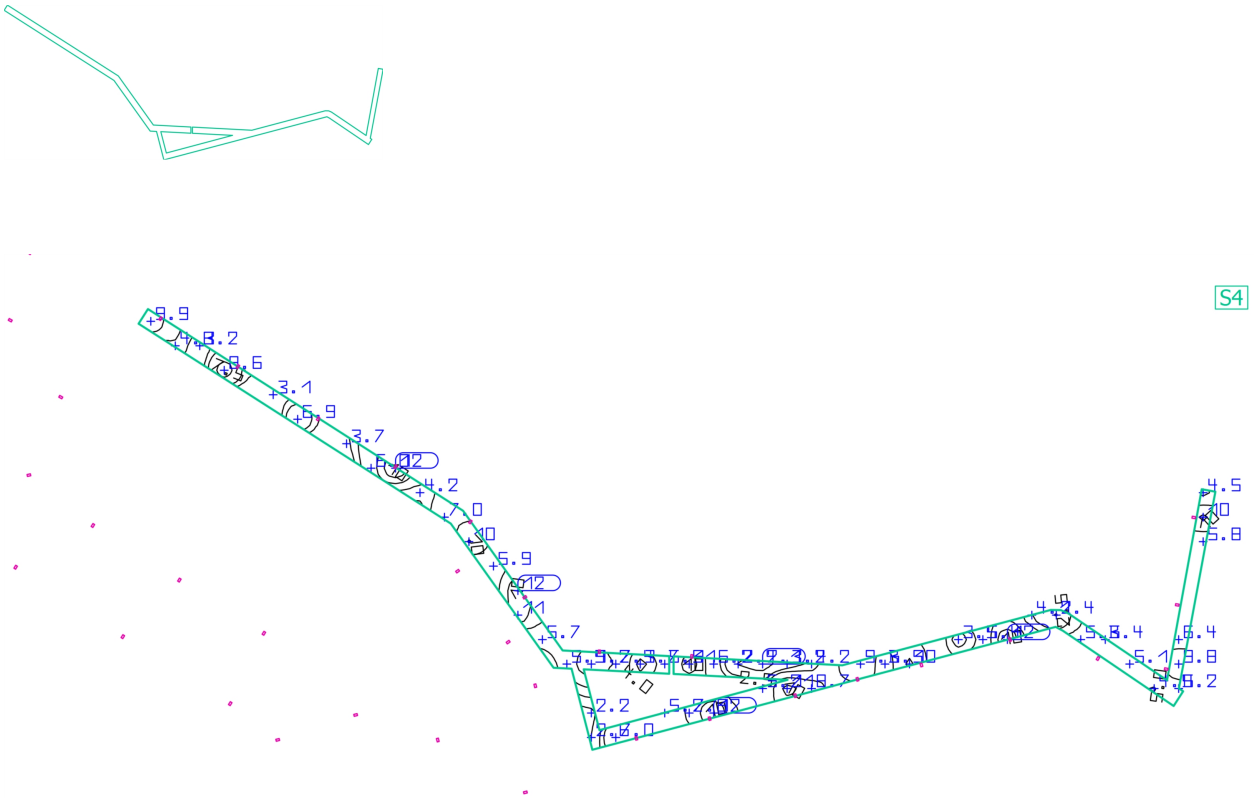
Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Walkway 1 Perpendicular illuminance Height: 0.000 m	8.94 lx	1.01 lx	27.7 lx	0.11	0.036	S3

Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

DIALux

Typical Roadway

Walkway 2



Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Walkway 2 Perpendicular illuminance Height: 0.000 m	6.58 lx	2.06 lx	12.4 lx	0.31	0.17	S4

Utilisation profile: DIALux presetting, Standard (outdoor transportation area)