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LIGHTING REPORT

for the

PROPOSED DEVELOPMENT SEA GARDENS PHASE 1 BLOCK A

at

SEA GARDENS BRAY COUNTY WICKLOW

For

SHANKILL PROPERTY INVESTMENTS LIMITED

issue no.	issue date	pages	issued for	approvals		
				by	checked	approved
03	18/06/2025	9	Planning	EP	BKD	KM
02	12/06/2025	9	Planning	EP	BKD	KM
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Table of Contents

1. INTRODUCTION.....	4
2. STANDARDS & REGULATIONS	5
3. DESIGN CONSIDERATIONS	5
4. LIGHTING DESIGN.....	7
5. LIGHTING SIMULATION RESULT	8
6. LIGHTING CONTROL	8
7. CONCLUSION	9

APPENDIX 1 SITE LIGHTING REPORT & LUMINAIRE SCHEDULE

APPENDIX 2 SITE LIGHTING DRAWINGS

1. INTRODUCTION

This Lighting Report was compiled by METEC Consulting Engineers in June 2025 on behalf of our client, Shankill Property Investments Limited., as part of the Planning Submission for the Proposed Block A Development at Sea Gardens, Bray, Co. Wicklow.

The proposed development will consist of the provision of 159 no. residential units over/around a shared 2-level podium comprising of: 9 no. 4-bedroom, 3 and 4-storey terraced townhouses with associated private terraces; and 150 no. apartments in 2 no. blocks ranging in height from 6 to 10-storeys (Block A1) and 7 to 11-storeys (Block A2) and consisting of a total of 48 no. 1-bedroom units, 58 no. 2-bedroom units, 44 no. 3-bedroom units, all with private balconies or terraces. The blocks will also include communal lounge areas; a communal gym in Block A1; refuse storage areas; and associated plant. The shared 2-level podium will include car, motorcycle and bicycle parking, with additional car parking provided within the curtilage of 5 no. of the proposed townhouses. The proposed development will also include: public open space including play areas; communal open space within the central podium courtyard; pedestrian / cycle linkages with adjoining existing and permitted developments; associated connections to the surrounding road network; all associated landscaping and public lighting; an ESB substation; drainage arrangements; utility connections; and all site development works. A detailed development description is set out in the Planning Report prepared by RPS and enclosed as part of the LRD application package.

This Lighting Report and associated drawing outlines the proposed Site Lighting scheme for the development. This lighting Report will verify that the lighting design is fit for purpose, conform with regulatory requirements, and indicate acknowledgement of the site's sensitivities. It should also be noted that a section of the site is intended to be taken in charge by Dun Laoghaire Rathdown County Council as per the Taking in Charge drawings provided by Howells.

The Proposed lighting for the site has been designed to provide a safe environment for pedestrians, cyclists and moving vehicles. The lighting design also takes into consideration and is adequately placed for safety and to minimise light pollution to the adjacent areas.

The works will include for the installation of new lighting columns within and surrounding the Block A development.

2. STANDARDS & REGULATIONS

CURRENT ENGINEERING BODIES, RECOMMENDATIONS AND GUIDES

- IS EN 40-1 – Lighting Columns (Definitions and terms)
- IS EN 40-2 – Lighting Columns (General requirements and dimensions)
- IS EN 40-3 – Lighting Columns (Design and verification and Verification by testing)
- IS EN 40-5 – Lighting Columns (Definitions and terms)
- I.S. 10101: National Rules for Electrical Installations
- BS EN 13201 part 2 – Road Lighting Performance requirements
- BS EN 13201 part 3 – Road Lighting Details calculation of performance
- BS EN 13201 part 4 – Details methods of measuring light performance
- BS EN 60529 – Specification for Degrees of Protection for enclosures
- BS EN 60528-2-3 – Luminaires for Road & Street Lighting
- BS EN ISO 1461 Hot dip galvanised coatings on fabricated iron and steel articles. Specifications and test methods
- BS 7671:2018 – The IET Wiring Regulations – Requirements for Electrical Installations
- ET211/2003: Code of Practice for Public Lighting Installations in Residential Areas
- Institute of Lighting Professionals; Guidance Note 08/23; Bats and Artificial Lighting at Night
- Roads Act (Latest revision)
- Road Traffic Act (Latest revision)
- Safety, Health and Welfare at Work Act 2005
- Safety, Health and Welfare at Work Construction Regulations 2013 & Building Control Act 2007

3. DESIGN CONSIDERATIONS

3.1 General

The Public Lighting design has been carried out by Sabre Electrical Services who have a professional membership and accreditation in Exterior Lighting from the Institute of Lighting Professionals (ILP).

It is proposed that a section of the development will be taken in charge. The lighting scheme will be designed and installed in accordance with the requirements of Dun Laoghaire Rathdown County Council. The construction of lighting columns and luminaire

specifications will also comply with the Dun Laoghaire Rathdown County Council Public Lighting Installations in Residential and Industrial Areas Guideline Document.

A key consideration in the design of the proposed development was the character of the site provided by new and mature trees. The scheme seeks to retain as many of the quality trees as possible, in the interests of visual amenity and to protect biodiversity.

The proposed design has considered the negative impact of trees on the performance of the lighting systems and the possible negative effects of the lighting system on existing trees. A lighting layout has been selected to avoid conflict with the existing mature trees and in turn reducing unwanted shadowing and lighting uniformity issues. The decision to install lighting away from the mature existing trees will avoid conflict below ground such as roots interfering with power cables. This conflict can cause difficulty during installation, maintenance, and operation of the lighting system.

The drawing indicates that the Public Lighting is designed to comply with the relevant standards, regulations, recommendations and guidelines.

3.2 Road Usage

When designing the proposed lighting scheme for this Development the following traffic classifications have been considered:

- Vehicular Traffic
- Pedestrian Traffic
- Cyclist Traffic
- Car parking

3.3 Existing Trees

The site includes mature trees, many of which will be retained in accordance with Development Plan objectives and policy. This made the avoidance of tree positions an important aspect of the lighting design. The column positions are strategically placed to avoid these mature trees.

3.4 Light Spill

When designing the proposed lighting scheme, consideration has been given to obtrusive light and its control. The levels of light emitted by the luminaires has been restricted by reducing the inclination angel to between 0 & 5%.

The drawing indicates the 1 lux isoline as being contained within the redline boundary and so surrounding modes of transport and wildlife will not be affected.

3.5 Bat Conservation

When designing the proposed site lighting scheme, consideration has been given to best practice as outlined in Guidance Note 08/23; Bats and Artificial Lighting at Night - Institute of Lighting Professionals; with regards to reducing impact on bat population. The following have been considered:

- Column height $\leq 6\text{m}$
- Directional lighting to prevent light spillage & light pollution.
- All street lanterns calculated at 0° tilt in relevant areas
- All street lanterns available in 2700K LED (warm White)
- Modern light technology to restrict the horizontal plane of luminaires.

4. LIGHTING DESIGN

The lighting design has considered the current Dun Laoghaire Rathdown County Council Public Lighting Technical Specification & Requirements and EN 13201-2. Based on the guidelines set out in these documents the parameters applicable to the site are set out below:

LOCATION – Main Road – Lighting Class P4

Maintained (Eave) Lux Level = 5 – 7.5 Lux

Maintained (Emin) Lux Level = 1 Lux

LOCATION – Environmentally sensitive Pathways – Lighting Class P4

Maintained (Eave) Lux Level = 5 – 7.5 Lux

Maintained (Emin) Lux Level = 1 Lux

The proposed lighting consists of 4 different pole mounted fittings at heights ranging from 5m to 6m and bollard fittings as indicated on the drawings. The Luminaires selected are as follows:



C U PHOSCO 950



TRT BOLLARD

- **LAMP A** = C U PHOSCO E950-28-P6A-727-C0650-16W
- **LAMP B** = C U PHOSCO E950-28-P4A-727-C300-8W
- **LAMP C** = TRT LIGHTING VIA ASY CLO 2700K LED
- **Lamp H** = C U PHOSCO E950-28-P6A-727-C0650-16W
- **Lamp I** = C U PHOSCO E950-28-R2P-727-C250-7W

5. LIGHTING SIMULATION RESULT

The lighting class is determined using the Standards for road lighting Part 2: Performance requirements – EN 13201-2.

LOCATION – Main Road

Class P4 along roadway. Design achieves a maintained average illuminance of 5.08 Lux and minimum illuminance of 1.06 Lux.

LOCATION – Environmentally sensitive Pathways

Class P4 along pathways. Design achieves a maintained average illuminance of 5.08 Lux and minimum illuminance of 1.06 Lux.

6. LIGHTING CONTROL

All LED lanterns will have Constant Light Output (CLO). Luminaires will be automatically dimmed to 75% each night from 12 midnight to 6am. All lanterns will have a 7 pin NEMA socket fitted.

Each light fitting shall be controlled via an individual Photoelectric Control Unit (PECU). The operation of the lighting shall be on a dusk-dawn profile, 35 lux on/18 lux off.

7. CONCLUSION

The proposed lighting installation achieves the following:

- Luminaire selection limits upward light spill and takes cognizance of local wildlife.
- The lighting scheme achieves the recommended lux levels in accordance with current regulations and standards.
- The lighting scheme achieves good uniformity throughout the development to ensure good visibility at night.

APPENDIX 1
SITE LIGHTING REPORT & LUMINAIRE SCHEDULE

DATE: 18 June 2025
DESIGNER: Alex Naper
PROJECT No: SES 07225 Rev A
PROJECT NAME: Sea Gardens Phase 1 Block A



Client: Shankill Property Investments Limited

MF derived from: $0.92 \times 0.89 \times 0.99$ (LMF (Low pollution environment & 72 month cleaning cycle) \times LLMF \times LSF)
LLMF & LSF values @ 100,000 hours & 25 degrees C Ta.

Residential area designed in accordance with EN13201-2:2015 Category P4.

Outdoor Lighting Report

PREPARED BY: Sabre Electrical Services Ltd.
Unit 11,
Bellview Industrial Estate,
Tolka Valley Road,
Dublin 11
D11 VN59
Phone Number: 01 8110875
Contact: Graham Sheehan
eMail: graham@sabrelighting.ie

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Grid 1	727992.09	719509.42	141.00	180.00	1.50	1.50
2	Grid 2	728002.31	719562.00	30.00	66.00	1.50	1.50

Luminaires

Luminaire A Data



Supplier	C U Phosco
Type	E950-28-P6A-727-C0650-16W
Lamp(s)	727N
Lamp Flux (klm)	2.45
File Name	E950-28-P6A-727-C0650-16W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	961.6, 241.7, 0.0
No. in Project	2

Luminaire B Data



Supplier	C U Phosco
Type	E950-28-P4A-727-C300-8W
Lamp(s)	727N
Lamp Flux (klm)	1.15
File Name	E950-28-P4A-727-C0300-8W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	20

Luminaire C Data



Supplier	TRT Lighting
Type	VIA ASY 203mA CLO 2700K LED
Lamp(s)	42 0007 0000 100
Lamp Flux (klm)	0.29
File Name	VIA_ASY_203mA_CLO_288LM_2.7K.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	598.0, 382.6, 53.1
No. in Project	4

Luminaire H Data



Supplier	C U Phosco
Type	E950-28-P6A-727-C0650-16W
Lamp(s)	727N
Lamp Flux (klm)	2.45
File Name	E950-28-P6A-727-C0650-16W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	961.6, 241.7, 0.0
No. in Project	4

Luminaire I Data



Supplier	C U Phosco
Type	E950-28-R2P-727-C250-7W
Lamp(s)	727N
Lamp Flux (klm)	0.90
File Name	E950-28-R2P-727-C0250-7W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	871.2, 97.0, 0.4
No. in Project	1

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
1	A	728011.82	719572.07	6.00	120.00	0.00	0.00	0.40	100%			
2	A	727996.14	719598.69	6.00	31.00	0.00	0.00	0.40	100%			
3	H	727983.32	719576.86	6.00	30.00	5.00	0.00	0.40	100%			
4	H	727995.47	719553.59	6.00	29.00	0.00	0.00	0.40	100%			
5	H	727970.34	719594.36	6.00	296.00	5.00	0.00	0.40	100%			
6	H	727966.93	719608.09	6.00	30.00	5.00	0.00	0.40	100%			
7	I	727953.99	719657.45	5.00	272.00	0.00	0.00	0.40	100%			
8	B	727981.84	719621.95	5.00	285.00	0.00	0.00	0.40	100%			
9	B	727969.02	719639.32	5.00	287.00	0.00	0.00	0.40	100%			
10	B	727975.59	719629.41	5.00	198.00	0.00	0.00	0.40	100%			
11	B	727975.69	719655.18	5.00	308.00	0.00	0.00	0.40	100%			
12	B	727985.22	719673.26	5.00	25.00	0.00	0.00	0.40	100%			
13	B	728000.10	719665.28	5.00	125.00	0.00	0.00	0.40	100%			
14	B	728020.93	719681.08	5.00	284.00	0.00	0.00	0.40	100%			
15	B	728042.99	719677.47	5.00	243.00	0.00	0.00	0.40	100%			
16	B	728055.62	719656.26	5.00	187.00	0.00	0.00	0.40	100%			
17	B	728062.61	719636.83	5.00	201.00	0.00	0.00	0.40	100%			
18	B	728073.88	719616.03	5.00	211.00	0.00	0.00	0.40	100%			
19	B	728085.98	719587.65	5.00	179.00	0.00	0.00	0.40	100%			
20	B	728097.13	719591.26	5.00	195.00	0.00	0.00	0.40	100%			
21	B	728105.94	719568.14	5.00	204.00	0.00	0.00	0.40	100%			
22	B	728080.31	719561.10	5.00	118.00	0.00	0.00	0.40	100%			
23	B	728068.43	719567.06	5.00	223.00	0.00	0.00	0.40	100%			
24	B	728054.87	719560.98	5.00	359.00	0.00	0.00	0.40	100%			
25	B	728046.26	719545.65	5.00	121.00	0.00	0.00	0.40	100%			
26	B	728028.88	719549.84	5.00	290.00	0.00	0.00	0.40	100%			
27	B	728014.29	719556.94	5.00	22.00	0.00	0.00	0.40	100%			
28	C	728020.47	719619.49	1.13	3.00	0.00	0.00	0.00	50%			
29	C	728032.27	719598.38	1.13	61.00	0.00	0.00	0.00	50%			
30	C	728024.68	719611.22	1.13	54.00	0.00	0.00	0.00	50%			
31	C	728028.11	719604.47	1.13	27.00	0.00	0.00	0.00	50%			

Horizontal Illuminance (lux)

Grid 1



Results

Eav	5.08
Emin	1.06
E _{max}	12.44
E _{min} /E _{max}	0.09
E _{min} /E _{av}	0.21

Horizontal Illuminance (lux)

Grid 2



Results

Eav	5.22
Emin	1.15
Emax	14.94
Emin/Emax	0.08
Emin/Eav	0.22

APPENDIX 2
SITE LIGHTING DRAWINGS



THIS DRAWING IS THE PROPERTY OF SABLRE LTD. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. ANY UNAUTHORIZED REPRODUCTION OR TRANSMISSION IS STRICTLY PROHIBITED. THE USER OF THIS DRAWING AGREES TO HOLD SABLRE LTD. HARMLESS FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING OUT OF OR RESULTING FROM THE USE OF THIS DRAWING. THE USER OF THIS DRAWING AGREES TO HOLD SABLRE LTD. HARMLESS FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING OUT OF OR RESULTING FROM THE USE OF THIS DRAWING.

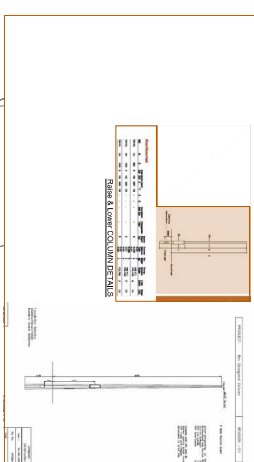
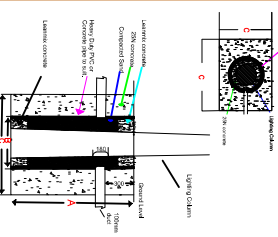


- Luminaire A E850-26-P6A-727-C0650-16W
6m Column, Qty 2
- Luminaire B E850-26-P6A-727-C300-8W
9m Release & Lower Column, Qty 20
- Luminaire C VIA ASY 203ma CLO 2700K LED
1m Bollard, Qty 3
- Luminaire H E850-26-P6A-727-C0650-16W
Existing LED luminaire.
- Luminaire I E850-26-R2P-727-C250-7W
Existing LED luminaire.

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Typical Base detail, to be checked by site engineers.

COLOUR/HEIGHT/DEPTH	TYPE	QTY	UNIT
COLOUR/HEIGHT/DEPTH	A	2	6m
COLOUR/HEIGHT/DEPTH	B	20	9m
COLOUR/HEIGHT/DEPTH	C	3	1m



SABLRE ELECTRICAL SERVICES LTD.
Specialist Contractors
PUBLIC LIGHTING - FOOD LIGHTING - SPORTS LIGHTING

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CLIENT/SUBCONTRACTOR: Shankill Property Investments Limited
PROJECT: Sea Gardens Phase 1 Block A

TITLE: Public Lighting Layout
DRAWN: A/N SCALE: 1:5000 A1 DATE: 06-06-23
ISSUED: SES 07225 ISSUE: 2

DO NOT SCALE FROM THIS DRAWING