SDCC RATHCOOLE

Public Lighting Report

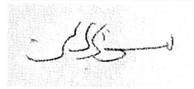
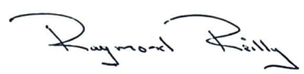
South Dublin County Council

Project number: 60765651
RATH-ACM-XX-XX-RP-EL-400001

Sept 2026

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Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
01	02/09/2026	For Information	RR	Raymond Reilly	Regional Director
02	07/10/2026	Part 10	RR	Raymond Reilly	Regional Director

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Table of Contents

1. Introduction 5
2. Design 5
3. Standards 7
4. Light Pollution 7
5. Lighting Controls 8
6. Underground Cable Installation and Infrastructure 8
Appendix A External Lighting Report 10

Figures

Figure 1: Proposed Development 5
Figure 2: Proposed Lux levels 6
Figure 3: Main Road Lighting BGP702 6
Figure 4: Carpark courtyard lighting 7
Figure 5: Light Spill 8
Figure 6: Photocell (PECU) 8

Tables

Table 1: Lighting class Comparability Table; extract from BS 5489-1:2013 7

1. Introduction

The proposed development comprises a new Rathcoole Housing Project in South County Dublin together with associated external works, access, landscaping and public realm improvements. The site comprises greenfield lands located to the south and south-east of Rathcoole Village, adjoining established residential areas, with Rathcoole Park located immediately to the north.

The development will include a new housing project, pedestrian and cycle routes, vehicular access, a car park area, a proposed roadway and improved connections to the surrounding footpath network.
The external work will include landscaping, seating, cycle stands, and permeable paving. Existing trees and selected site features will be retained and protected as appropriate.

Overall, the development will provide a modern leisure and community facility with improved recreational amenities, accessibility and landscaping while integrating with the existing surrounding facilities and landscape.

This report was generated for planning requirements and outlines the design intent and considerations to be taken regarding the public lighting scheme within the proposed development. Refer to Figure 1 below.

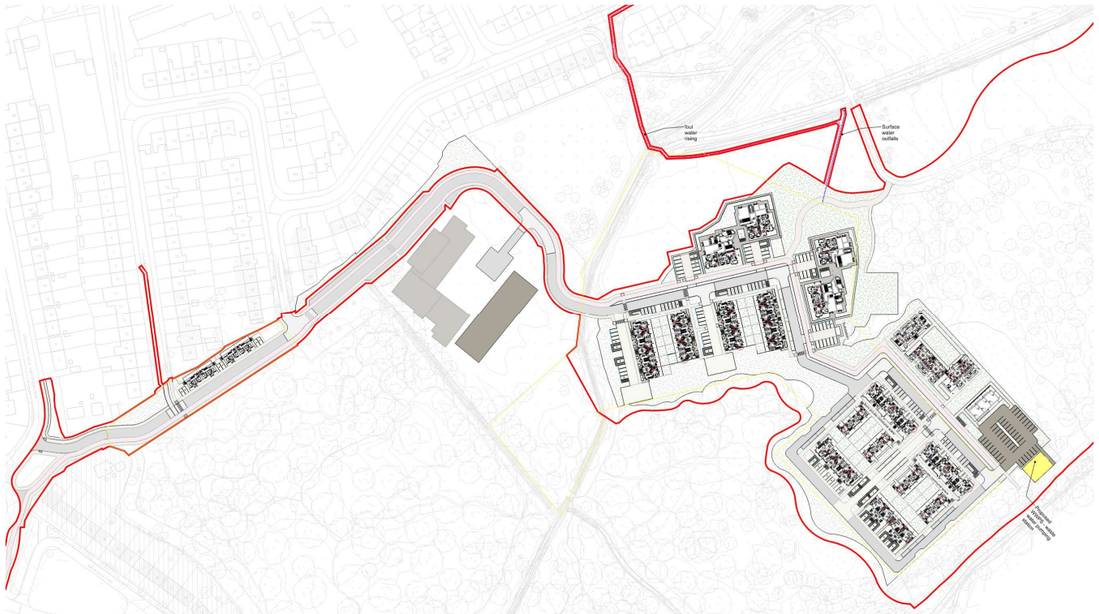


Figure 1: Proposed Development

The report has been developed with the following principal considerations:

I. Provide adequate illumination to contribute towards the safe use of the road and walkways by both vehicles and pedestrians within the development.

II. Minimise light pollution and visual glare for drivers, pedestrians and neighbouring areas.

III. Provide a visually interesting environment.

IV. The complete external lighting installation will be designed in accordance with the regulations for electrical services as ETCI National Rules for Electrical Installations IS EN 10101:2020+AC2:2025 as well as BS5489-1:2013 Code of practice for the design of road lighting, IS EN 13201:2003-2, South Dublin County Council Public Lighting Specification and Technical Guidance Document Part M 2010 regarding Illumination levels.

The predicted performance of the external lighting installations has been assessed in detail using predictive lighting simulation software, Lighting Reality

The design comprises of pole mounted and architectural luminaires throughout the development is described in section 2 and lighting control is detailed in Section 5.

2. Design

The proposed external lighting scheme, (drawing ref: 60765651-ACM-ZZ-ZZ-DR-EL-021001, 60765651-ACM-ZZ-ZZ-DR-EL-021002 & 60765651-ACM-ZZ-ZZ-DR-EL-021003) is designed based on best practice, National Transport Authority guidance's and, more importantly, national & international industry standards, incorporating the following considerations.

- Light pollution.
- Disability and discomfort glare.
- Sky glow.
- Current edition of "South Dublin County Council Public Lighting Specification".
- Ecological sensitive

The key items that underpin the design approach are as described below:

- Compliance with lighting standards/ regulations for pedestrian footpath & road lighting functionality.
- Mitigate light spill onto adjoining trees / neighbouring dwellings.
- Coordination with landscape designer to ensure:
  - Luminaire and tree positions are coordinated
  - Luminaires located to avoid damage to the light fitting from falling branches and to avoid the need to regularly maintain them.
- Optimisation of the lighting design to minimise potential impacts on the ecologically sensitive area.

To address the afore mentioned the following measures are adopted:

- Consciously positioned luminaires to limit negative spill and light pollution whilst also maintaining the required Lux levels uniformly across the pedestrian footpath around the development.
- An asymmetrical beam optic is employed to physically contain unnecessary light spillage and light pollution.
- Lighting class as set out in Table 3 of IS EN 13201-2:2015 within the development shall be as below:

  <u>Parking</u>

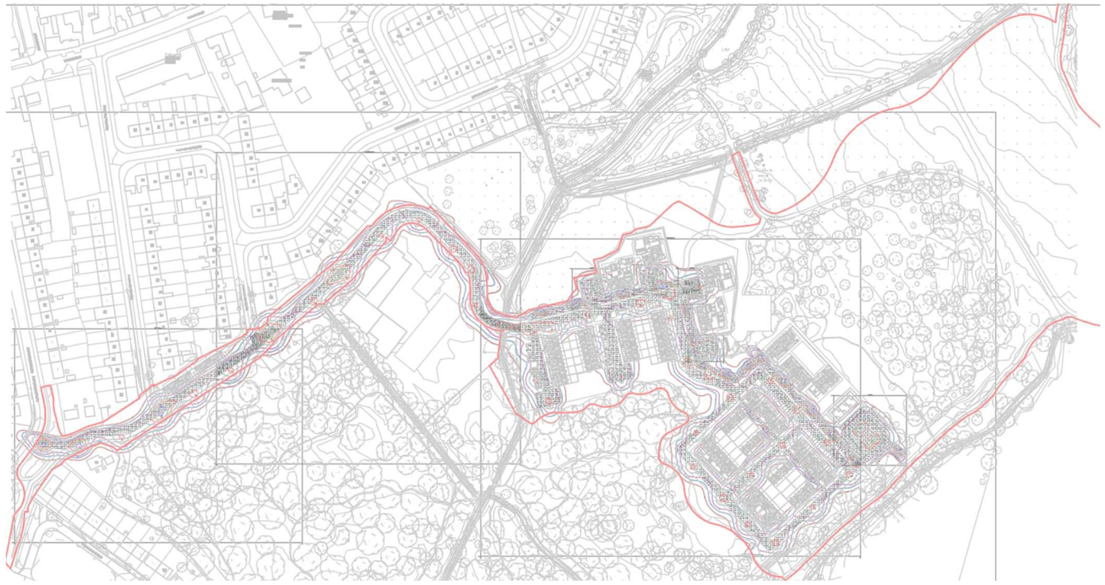
  Lighting Class P5: Illumination levels within the parking area shall be designed in accordance with I.S. EN 13201.

  <u>Cycle Path / Pedestrian Path</u>

  Lighting Class P5: Illumination levels within the parking area shall be designed in accordance with I.S. EN 13201.

  <u>Main Road</u>

  Lighting Class P4: Illumination levels within the parking area shall be designed in accordance with I.S. EN 13201.
- It is proposed that 4-metre-high LED lamp lighting poles will provide illumination to the cycle path & pedestrian path area, 6-metre-high LED lamp indirect lighting poles will provide illumination to the Car Park area, and 8-metre-high LED lamp lighting poles will provide illumination to the main road. This design is cognisant of the fact that light pollution both in terms of sky glow and light spill.



Residential Main Roads
Results - Horizontal Illuminance (lux)
Eav= 11.67
Emin= 2.14
Emax= 27.66
Emin/Emax= 0.08
Emin/Eav= 0.18
Emax/Eav= 2.37

Carparking 2
Results - Horizontal Illuminance (lux)
Eav= 9.20
Emin= 2.47
Emax= 18.84
Emin/Emax= 0.13
Emin/Eav= 0.27
Emax/Eav= 2.05

Residential Main Roads
Results - Horizontal Illuminance (lux)
Eav= 10.35
Emin= 2.04
Emax= 43.57
Emin/Emax= 0.05
Emin/Eav= 0.20
Emax/Eav= 4.21

Carparking 4
Results - Horizontal Illuminance (lux)
Eav= 7.67
Emin= 2.10
Emax= 15.62
Emin/Emax= 0.13
Emin/Eav= 0.27
Emax/Eav= 2.04

School area - Future Planning
Results - Horizontal Illuminance (lux)
Eav= 10.79
Emin= 2.85
Emax= 24.35
Emin/Emax= 0.12
Emin/Eav= 0.26
Emax/Eav= 2.26

Carparking 3
Results - Horizontal Illuminance (lux)
Eav= 8.59
Emin= 3.69
Emax= 16.83
Emin/Emax= 0.22
Emin/Eav= 0.43
Emax/Eav= 1.96

Carparking 1
Results - Horizontal Illuminance (lux)
Eav= 7.29
Emin= 2.52
Emax= 15.79
Emin/Emax= 0.16
Emin/Eav= 0.35
Emax/Eav= 2.16

Carparking 5
Results - Horizontal Illuminance (lux)
Eav= 10.75
Emin= 2.14
Emax= 36.82
Emin/Emax= 0.06
Emin/Eav= 0.20
Emax/Eav= 3.43

Figure 2: Proposed Lux levels

For the General External lighting, it is proposed to utilise low wattage 3000K LED luminaires with +5/-20° inclination to the adjacent surface (Figure 3).

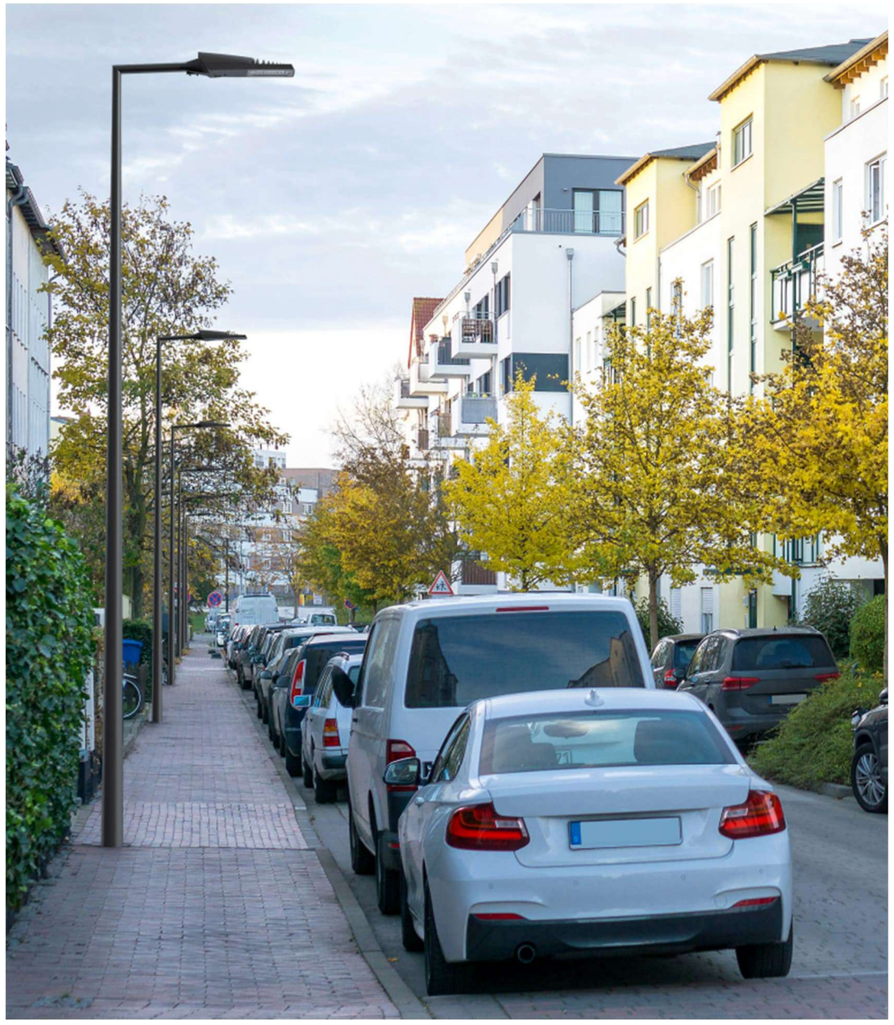


Figure 3: Main Road Lighting BGP702

In addition, the Car Parking courtyard, it is proposed to utilise LED luminaires to suit the aesthetic element of the landscape layout throughout the development. (Figure 4).

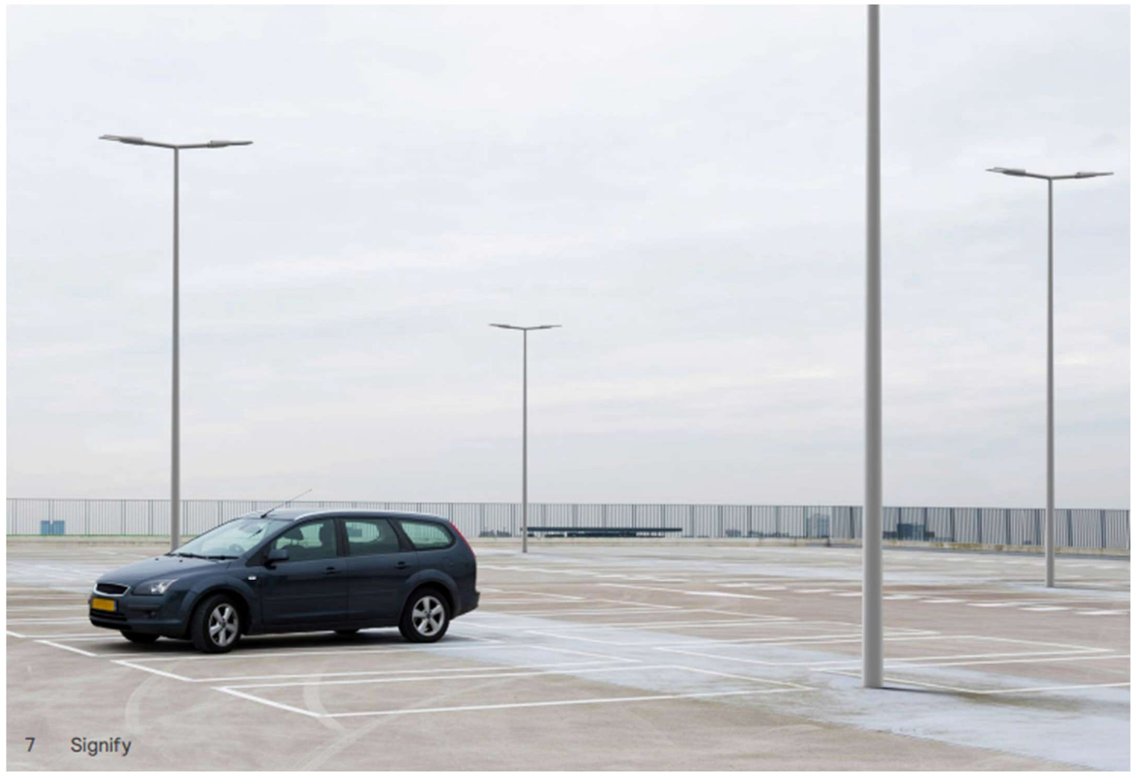


Figure 4: Carpark courtyard lighting

- Energy & Efficiency & Performance Standard for Light Bulbs, Public Consultation Document, October 2008
- South Dublin County Council Public Lighting Specification
- Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010).

6 Requirements for pedestrians and pedal cyclists

6.1 General requirements

The P classes in Table 3 or the HS classes in Table 4 are intended for pedestrians and pedal cyclists on footways, cycleways, emergency lanes and other road areas lying separately or along the carriageway of a traffic route, and for residential roads, pedestrian streets, parking places, schoolyards, etc.

NOTE 1 Guidance on the application of the above-mentioned classes is given CEN/TR 13201-1.

The average illuminance ($\bar{E}$), the minimum illuminance (E_{min}), the average hemispherical illuminance ($\bar{E}_{hs}$) and the overall uniformity of the hemispherical illuminance (U_o) are to be calculated and measured according to EN 13201-3 and EN 13201-4.

The road area for which the requirements of Tables 3 and 4 apply can include all the road area such as carriageways on residential roads and reserves between carriageways, footways and cycleways.

NOTE 2 Limitation of disability glare can be demonstrated by evaluating f_{TI} values for all relevant combinations of observation directions and observer positions (see Annex C) or achieved by the selection of luminaires according to the classes G*1, G*2, G*3, G*4, G*5 or G*6 (see A.1).

NOTE 3 Limitation of discomfort glare can be achieved by the selection of luminaires according to the classes D1, D2, D3, D4, D5 or D6 of Annex A (see A.2). For the HS classes of Table 4, only the classes D5 or D6 are relevant.

Table 3 — P lighting classes

Class	Horizontal illuminance		Additional requirement if facial recognition is necessary	
	$\bar{E}$* [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		

* 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.

NOTE 4 A high colour rendering contributes to a better facial recognition.

Table 1: Lighting class Comparability Table; extract from BS 5489-1:2013

3. Standards

Adherence to the relevant Standards/ Regulations ensures a compliant public lighting design at the proposed development.

Reference Standards

- National Rules for Electrical Installations, Electro-Technical Council of Ireland. IS EN 10101:2020
- BS 5489-1 (2013) Code of Practice for the Design of Road Lighting – Part 1: Lighting Roads and Public Amenity Areas
- IS EN 12464-2 (2011) ‘Lighting for Workplaces. Outdoor Workplaces’
- IS EN 13201 (2015) Road Lighting – Part 2: Performance Requirements,
- Housing Schemes: Guidebook for ESB Networks Standards for Electrical Services.
- Guidance Notes for The Reduction of Obtrusive Light’ Institution of Lighting Engineers, 2005
- Guide to Obtrusive light, The ILE Guidance Notes on the Reduction of Obtrusive Light and CIE
- Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations

4. Light Pollution

Light pollution is a recognised statutory nuisance. Obtrusive light from installations must be minimised taking into consideration the following.

- Sky glow (direct upward waste light),
- Light trespass (intrusive light and light into windows/windscreens),
- Over illumination, glare (source intensity) and clutter.

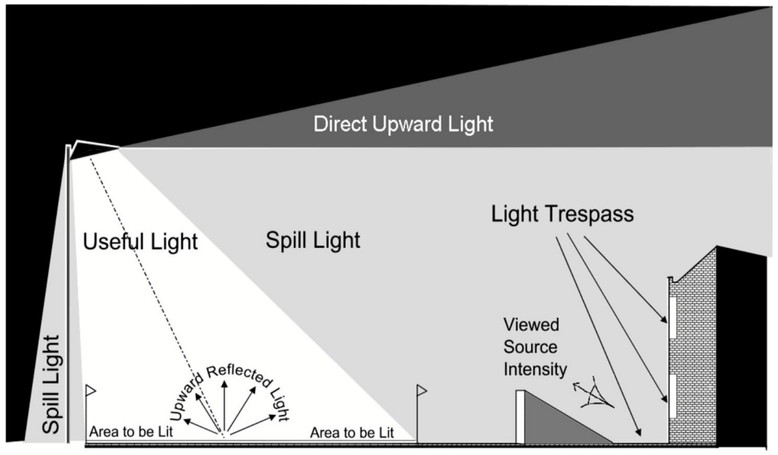


Figure 5: Light Spill

Outline predictive modelling software (Lighting Reality) has facilitated a study, which identifies and reduces potential light pollution.

Predictive modelling has further allowed for the optimum spacing of luminaires which minimise visual clutter from the artificial lighting scheme. Potential problems from glare and over-illumination have been considered and the design proposals use high-quality optics coupled with aiming and commissioning to militate against these issues. Also, by optimizing illumination levels, it is possible to help mitigate against sky glow.

For the pedestrian and roadway lighting, it is proposed to utilise low wattage LED luminaires with +5/-20° inclination to the adjacent surface. Luminaires are positioned to comply with IS EN 16462-2 (2007) requirements meeting average Illuminance (Em), uniformity (Uo) and glare rating (GRL) requirements.

5. Lighting Controls

Switching control of the lighting columns will be achieved by means of photocell control. Each individual luminaire shall be capable of being switched "ON" from dusk to dawn, unless otherwise requested by South Dublin County Council.

An individual solid-state Photo-Electric Control Unit (PECU) which will include a “fail safe” circuit that switches the luminaire on in the event of photocell failure will control each luminaire. The PECU will incorporate a phototransistor complying with I.S.428: 1991 as the light sensor, e.g., SELC 84 by Solar Enterprises Ltd., or equivalent approved by the Council. The unit will have a manufacturer's guaranteed warranty period of at least 6 years. The PECU will be designed to fit the National Electrical Manufacturers Association (NEMA) socket provided on each luminaire. Each luminaire will be fitted with a NEMA-type socket for mounting of the PECU unless otherwise directed by the AECOM Engineers. The socket will be fitted with a watertight gasket and secured by 4 non-corrodible screws that shall maintain the IP rating of the canopy. The NEMA socket shall be wired to the luminaire control circuit.



Figure 6: Photocell (PECU)

The maximum angle of light output from all the luminaires has no direct upward illuminance.

In accordance with the IS EN 12464-2; lighting and workplaces, it is calculated that the environmental zone will be E3, i.e. medium district brightness, with a maximum sky glow (URL) of 2.5%. Maximum light trespass (into windows in the surrounding buildings) of 5 Lux and 1 Lux at pre-curfew and post-curfew, respectively, source intensity of 7.5x10³ cd and .5x10³ cd at pre-curfew and post-curfew, respectively, while the adjacent buildings luminance will be 25 cd max at pre-curfew; refer to figure 2.

All lamps selected have a DALI ballast and, as a result are dimmable. Dimming of the lamp, if required, is controlled via an astronomical clock which is built into the circuit board of the luminaire determining when the lamp should be switched on/off based on time and date. The required timings to be agreed with SDCC (propose to dim between 11pm - 6am).

A series of specific calculations using predictive modelling software results for test illuminance, luminous intensity and glare from a range of angles relative to a light source was conducted. These is concentrated on uniformity and glare in the roadway and pedestrian areas and on light spill and luminous intensity.

The public lighting scheme has been designed so as to maximise energy efficiency and to minimize light spill in so far as possible.

6. Underground Cable Installation and Infrastructure

The underground cable installation shall be in full compliance with *“*South Dublin County Council Public Lighting Specification”.

Underground cables shall be 6mm² NYCY 0.6/1kV CABLE TO DIN VDE 0276-603. The cables shall have an integral earth core, i.e. the wire armour shall not form part of the electric conducting circuit. The size of the cable shall be adequate to limit to 4% voltage drop from the ESB Networks supply point. Cable size shall not be less than 6 mm2 cross-sections.

In all cases, public lighting cables shall adhere to the following standards:

- NYCY cable to DIN VDE 0276603 (0.61kV) must be used throughout the installation, suitably sized. Steel Wired Armour (SWA) cable is not accepted.
- The minimum acceptable cable size is 6mm2.
- No jointing of cables will be accepted in any circumstances.

Underground public lighting cable shall be used exclusively for the public lighting installation.

Where ESB high voltage cables (11 KV / 22 KV) run in parallel with Public Lighting cables in ducts, a minimum separation of 300 mm shall be maintained. Where ESB high voltage cables and Public Lighting Cables cross, they shall do so at right angles. The requirement of crossing at right angles also applies to gas mains.

ESB Networks Mini-Pillars and Public Lighting Section Pillars shall be installed a minimum of 2- metres apart. If this is not physically possible and only with the explicit permission of ESB Networks and Public Lighting Services, these may be installed closer together and equipotentially bonded in accordance with the requirements of the latest edition of the National Rules for Electrical Installations, IS EN 10101.

An earth electrode shall be installed at each public lighting section pillar. The earth electrode used shall comply with the requirements of the latest edition of the National Rules for Electrical Installations, IS EN 10101.

Ducting shall comply with latest version of IS EN 61386-1-21-22-23-24 and shall be single walled, coloured red and manufactured from High-Density Polyethylene (H.D.P.E). The nominal external diameter of the duct shall be 107 mm with a minimal wall thickness of 5 mm. Each length of duct shall be stamped with the words “Public Lighting” or “Street Lighting”, in 9mm in height in black lettering repeated at 1-metre intervals. Ducts shall be laid with this legend facing upwards.

Ducting shall be laid in fully coupled unbroken lengths and shall be installed to achieve the minimum buried depths of NYCY cable in the High Density (HD) Polythene ducts as indicated in latest edition of the National Rules for Electrical Installations, IS EN 10101. Draw wires will be provided at all termination points. All ducts shall be marked with electrical marking tape at 300mm below finished ground level

A minimum depth of 450 mm cover is required in urban footways, grass margins, pedestrian ways, laneways, and gateway entrances. A minimum depth of 750 mm is required at road crossings or in carriageways.

Road crossing ducts shall be adequately protected by a cover of lean mix concrete and at a depth consistent with road construction requirements, normally a minimum of 750 mm. The duct ends shall be protected from ingress of rubble or other material.

Two lengths of ducting shall be provided at road crossings and under cobble locked surfaces, driveways etc. In general, the ducting shall be up to 500mm in front of the column positions, with a minimum of 140mm between centre of the duct and the `face of the column.

For ease of future maintenance Public Lighting poles will be proposed in retention sockets in so far as is possible and drop-down columns will be considered to avoid the MEWP access to replace LED fittings. Retention sockets will be designed in conjunction with specialist manufacturers and suppliers depending on the space allowable below ground.

Retention socket shall be compliant with South Dublin County Council specification for public lighting.

Access chamber shall be provided at all access points for road crossings. Access chamber shall be ‘ej’ manufactured FJ 60/45, to EN124, loading class B125, suitably resistant to intrusion, of at least 600mm x 450mm square.

Appendix A External Lighting Report

DATE:	**10 August 2026**
DESIGNER:	**Alan Gross**
PROJECT No:	**60765651**
PROJECT NAME:	**SDCC Rathcoole Project**

LIGHTING REALITY

Public Lighting Design - Rathcoole Project

Main Roads are designed to P4 Class
5lux avg
1lux min

Column are 8 meters height
Luminaires 3000K
Brackets 1 to 1.5 meters to iluminate path to path

Cicle path and Pedestrian path are designed to P5 class
Column are 4 meters height

Carparking are designed to P5 Class

Column are 6 meters height

Outdoor Lighting Report

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	Residential Main Roads	702227.83	726433.13	221.72	164.57	1.50	1.50
2	School area - Future Plann...	702383.44	726493.72	234.11	239.62	1.49	1.50
3	Residential Main Roads	702587.06	726422.73	292.59	244.14	1.49	1.50
4	Carparking 1	702657.49	726613.53	30.30	30.30	1.44	1.44
5	Carparking 2	702705.01	726624.00	24.82	23.00	1.46	1.44
6	Carparking 3	702739.08	726616.45	21.66	27.47	0.87	1.10
7	Carparking 4	702746.69	726572.51	27.43	20.21	1.44	1.44
8	Carparking 5	702859.00	726492.57	56.05	53.71	1.47	1.49

Luminaires

Luminaire A Data

Supplier	
Type	910925866536
Lamp(s)	LED50-4S/830
Lamp Flux (klm)	5.00
File Name	BGP702 T35 LED50-4S_830 PSD-SR DM1 1 FG.ies
Maintenance Factor	1.00
Imax70,80,90(cd/klm)	715.6, 63.9, 0.0
No. in Project	40

Luminaire B Data

Supplier	
Type	BGP281N-7c0d776f-3d53-4f7a-a555-7fcf41 e861bf
Lamp(s)	LED35-CLO-4S/730
Lamp Flux (klm)	3.43
File Name	BGP291-LED35-4S-730-DX50-FG-AR-CLO _IES-file (1).ies
Maintenance Factor	1.00
Imax70,80,90(cd/klm)	530.7, 56.1, 0.0
No. in Project	13

Luminaire C Data

Supplier	
Type	BDS300I-b9de8304-2cd4-4956-ad55-8f806 78d8bc0
Lamp(s)	LED27-CLO-1P/727
Lamp Flux (klm)	2.63
File Name	BDS300-LED27-1P-727-PSA-DM16P-PL1-D13_IES-file.ies
Maintenance Factor	1.00
Imax70,80,90(cd/klm)	419.0, 10.5, 0.0
No. in Project	19

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	702310.55	726512.45	8.00	101.00	0.00	0.00	1.00			
2	A	702341.55	726529.09	8.00	121.00	0.00	0.00	1.00			
3	A	702395.68	726564.37	8.00	126.00	0.00	0.00	1.00			

9750491777

Layout Continued

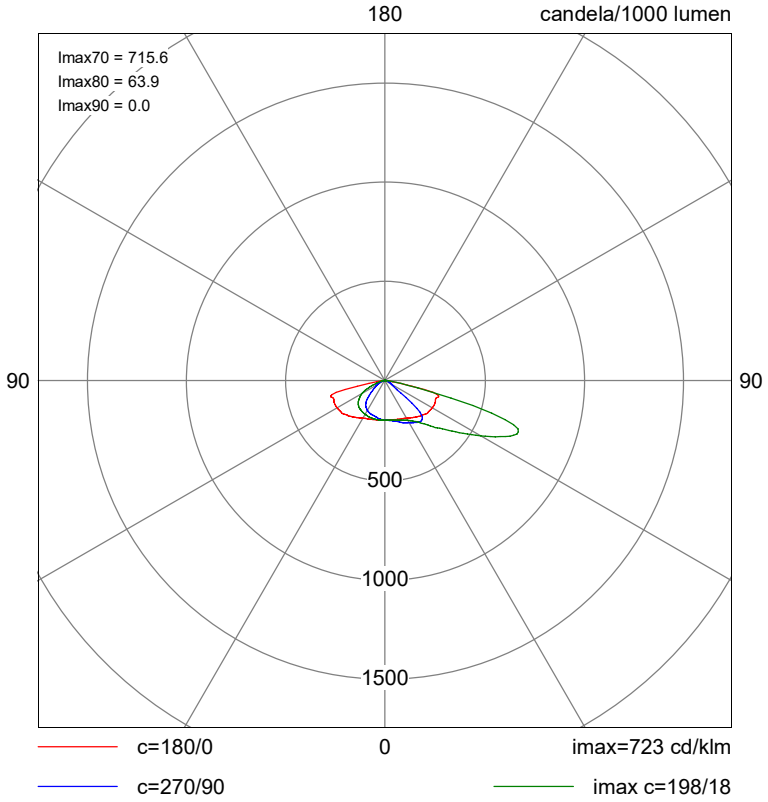
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4	A	702426.33	726588.45	8.00	118.00	0.00	0.00	1.00			
5	A	702459.41	726617.00	8.00	127.00	0.00	0.00	1.00			
6	A	702483.92	726636.72	8.00	127.00	0.00	0.00	1.00			
7	A	702511.84	726668.40	8.00	132.00	0.00	0.00	1.00			
8	A	702539.15	726679.70	8.00	75.00	0.00	0.00	1.00			
9	A	702578.27	726641.88	8.00	42.00	0.00	0.00	1.00			
10	A	702581.11	726615.15	8.00	23.00	0.00	0.00	1.00			
11	A	702623.06	726595.45	8.00	96.00	0.00	0.00	1.00			
12	A	702670.84	726606.60	8.00	102.00	0.00	0.00	1.00			
13	B	702678.30	726595.34	8.00	13.00	0.00	0.00	1.00			
14	B	702622.31	726581.12	8.00	14.00	0.00	0.00	1.00			
15	A	702709.97	726615.14	8.00	103.00	0.00	0.00	1.00			
16	A	702731.48	726605.65	8.00	13.00	0.00	0.00	1.00			
17	A	702731.14	726627.95	8.00	282.00	0.00	0.00	1.00			
18	A	702742.91	726571.07	8.00	15.00	0.00	0.00	1.00			
19	A	702764.07	726562.43	8.00	247.00	0.00	0.00	1.00			
20	A	702777.38	726545.09	8.00	319.00	0.00	0.00	1.00			
21	A	702751.88	726518.88	8.00	319.00	0.00	0.00	1.00			
22	A	702811.35	726559.16	8.00	242.00	0.00	0.00	1.00			
23	A	702832.19	726536.66	8.00	224.00	0.00	0.00	1.00			
24	A	702855.24	726511.61	8.00	221.00	0.00	0.00	1.00			
25	A	702872.38	726484.15	8.00	127.00	0.00	0.00	1.00			
26	A	702821.05	726506.54	8.00	135.00	0.00	0.00	1.00			
27	A	702797.02	726484.00	8.00	141.00	0.00	0.00	1.00			
28	A	702844.04	726459.22	8.00	127.00	0.00	0.00	1.00			
29	A	702816.14	726431.69	8.00	127.00	0.00	0.00	1.00			
30	A	702790.77	726445.75	8.00	40.00	0.00	0.00	1.00			
31	A	702772.02	726465.69	8.00	45.00	0.00	0.00	1.00			
32	A	702749.03	726490.23	8.00	47.00	0.00	0.00	1.00			
33	B	702680.43	726630.60	6.00	193.00	0.00	0.00	1.00			
34	B	702726.00	726639.84	6.00	191.00	0.00	0.00	1.00			
35	B	702758.46	726630.74	6.00	193.00	0.00	0.00	0.00			
36	B	702764.48	726575.00	6.00	101.00	0.00	0.00	1.00			
37	B	702888.65	726511.13	6.00	226.00	0.00	0.00	1.00			
38	B	702879.42	726521.43	6.00	222.00	0.00	0.00	1.00			
39	B	702879.34	726521.43	6.00	47.00	0.00	0.00	1.00			

Layout Continued

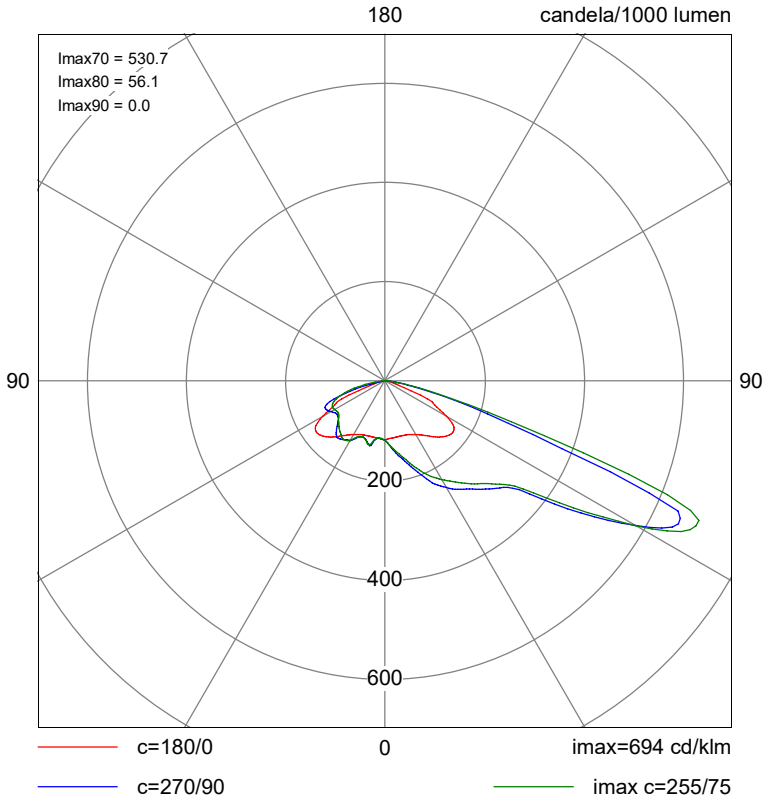
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
40	B	702888.65	726511.17	6.00	39.00	0.00	0.00	1.00			
41	A	702278.09	726505.71	6.00	115.00	0.00	0.00	1.00			
42	A	702249.53	726506.45	6.00	76.00	0.00	0.00	1.00			
43	A	702367.62	726546.15	8.00	127.00	0.00	0.00	1.00			
44	A	702339.67	726539.27	8.00	308.00	0.00	0.00	1.00			
45	A	702422.81	726600.94	8.00	304.00	0.00	0.00	1.00			
46	A	702473.25	726643.00	8.00	318.00	0.00	0.00	1.00			
47	A	702563.66	726657.67	8.00	51.00	0.00	0.00	1.00			
48	A	702602.85	726597.37	8.00	83.00	0.00	0.00	1.00			
49	C	702635.42	726612.31	4.00	285.00	0.00	0.00	0.00			
50	A	702641.89	726596.31	8.00	107.00	0.00	0.00	1.00			
51	C	702660.72	726618.14	4.00	281.00	0.00	0.00	0.00			
52	C	702696.60	726626.33	4.00	285.00	0.00	0.00	0.00			
53	C	702726.17	726633.21	4.00	277.00	0.00	0.00	0.00			
54	C	702747.72	726613.01	4.00	195.00	0.00	0.00	0.00			
55	C	702753.13	726589.57	4.00	186.00	0.00	0.00	0.00			
56	C	702758.33	726571.69	4.00	241.00	0.00	0.00	0.00			
57	C	702777.36	726563.64	4.00	248.00	0.00	0.00	0.00			
58	C	702792.39	726570.48	4.00	308.00	0.00	0.00	0.00			
59	C	702803.83	726577.13	4.00	223.00	0.00	0.00	0.00			
60	C	702821.61	726558.57	4.00	220.00	0.00	0.00	0.00			
61	C	702842.71	726535.73	4.00	223.00	0.00	0.00	0.00			
62	C	702859.13	726518.05	4.00	220.00	0.00	0.00	0.00			
63	C	702877.24	726498.09	4.00	223.00	0.00	0.00	0.00			
64	C	702794.31	726533.57	4.00	29.00	0.00	0.00	0.00			
65	C	702807.79	726518.48	4.00	31.00	0.00	0.00	0.00			
66	C	702828.01	726497.05	4.00	29.00	0.00	0.00	0.00			
67	C	702841.59	726482.46	4.00	52.00	0.00	0.00	0.00			
68	C	702909.61	726504.45	4.00	227.00	0.00	0.00	0.00			
69	A	702627.66	726557.97	8.00	14.00	0.00	0.00	1.00			
70	B	702682.63	726576.29	8.00	14.00	0.00	0.00	1.00			
71	B	702695.23	726557.16	6.00	99.00	0.00	0.00	1.00			
72	B	702640.34	726538.11	6.00	99.00	0.00	0.00	1.00			

Polar Diagrams

Luminaire A 910925866536



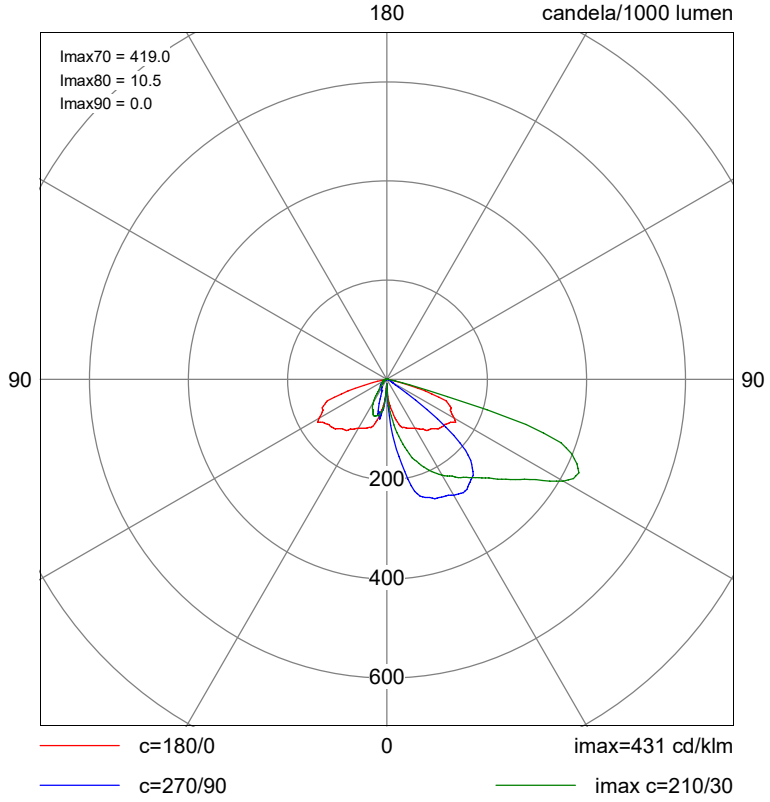
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9750491777

Polar Diagrams Continued

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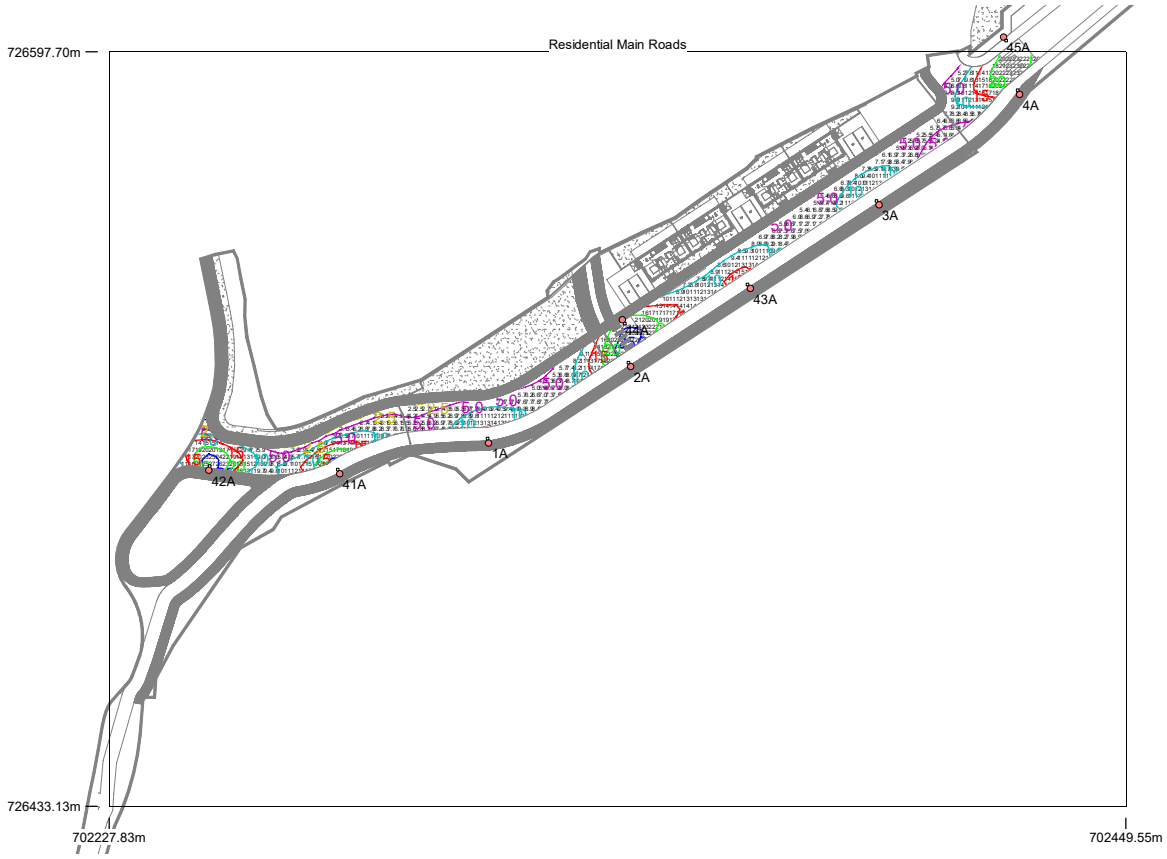
DATE: 10 August 2026 DESIGNER: Alan Gross

PROJECT No: 60765651 PROJECT NAME: SDCC Rathcoole Project

LIGHTING REALITY

Horizontal Illuminance (lux)

Residential Main Roads



Results

Eav	11.67
Emin	2.14
Emax	27.66
Emin/Emax	0.08
Emin/Eav	0.18

9750491777

Horizontal Illuminance (lux)

School area - Future Planning



Results

Eav	10.79
Emin	2.85
Emax	24.35
Emin/Emax	0.12
Emin/Eav	0.26

9750491777

Horizontal Illuminance (lux)

Residential Main Roads

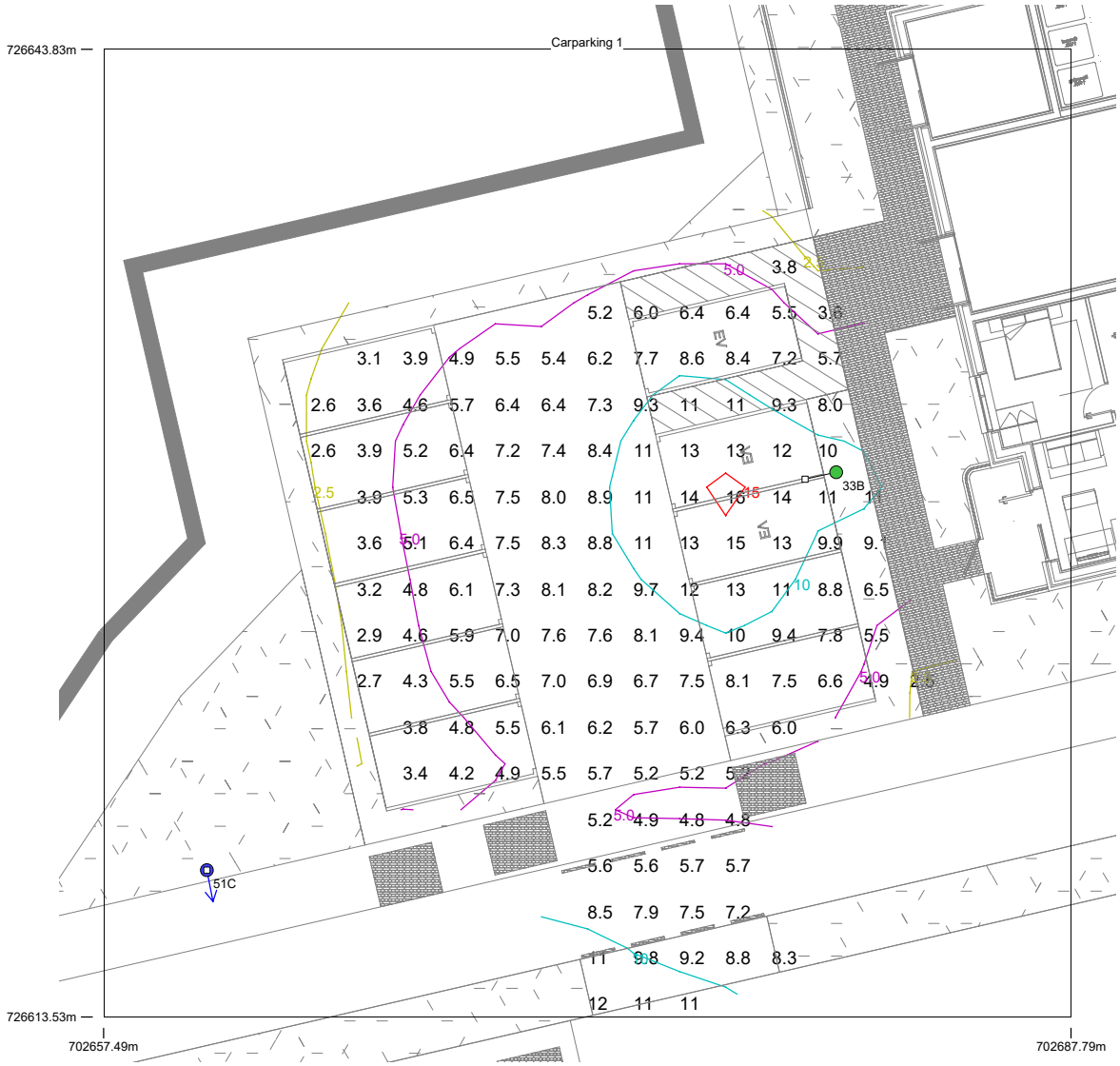


Results

Eav	10.35
Emin	2.04
Emax	43.57
Emin/Emax	0.05
Emin/Eav	0.20

Horizontal Illuminance (lux)

Carparking 1

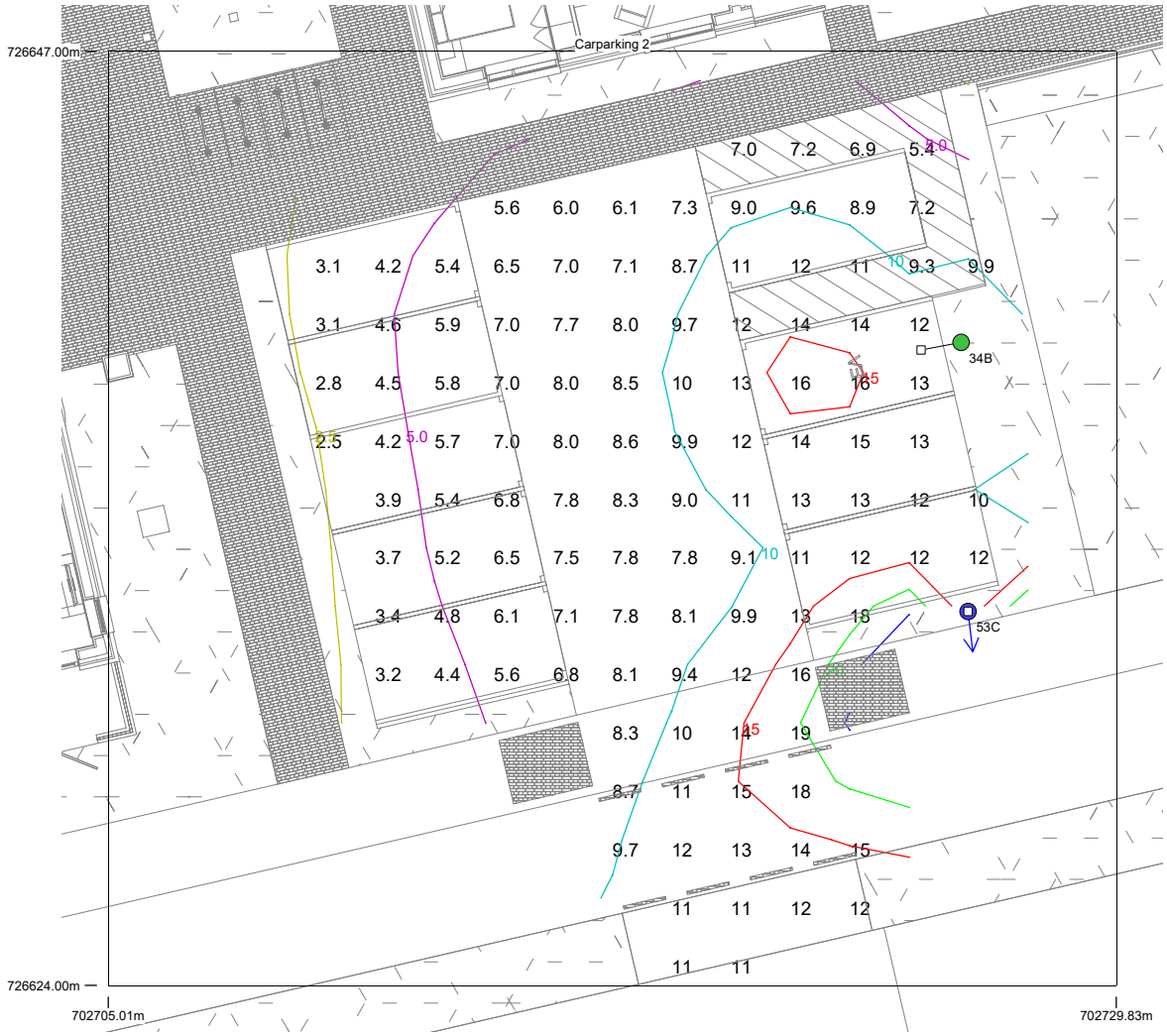


Results

Eav	7.29
Emin	2.52
Emax	15.79
Emin/Emax	0.16
Emin/Eav	0.35

Horizontal Illuminance (lux)

Carparking 2



Results

Eav	9.20
Emin	2.47
Emax	18.84
Emin/Emax	0.13
Emin/Eav	0.27

Horizontal Illuminance (lux)

Carparking 3

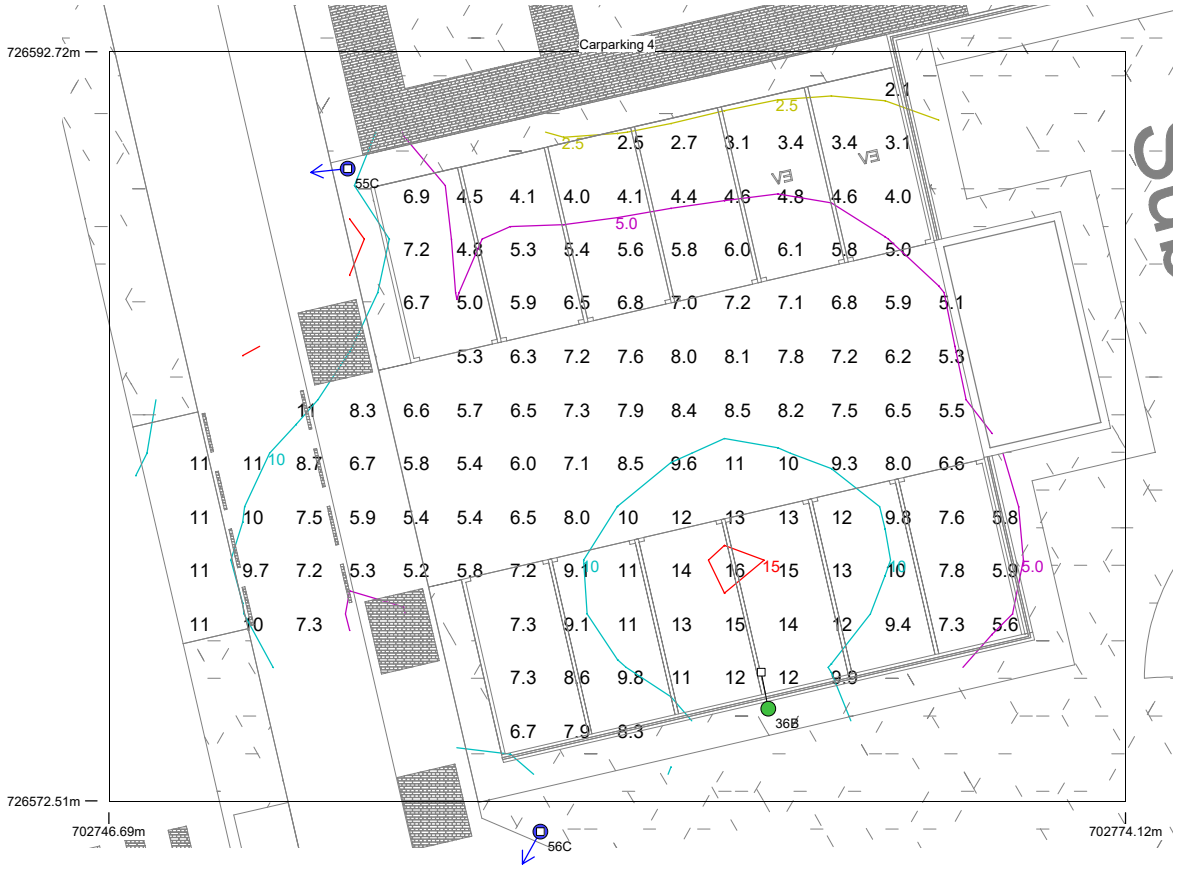


Results

Eav	8.59
Emin	3.69
Emax	16.83
Emin/Emax	0.22
Emin/Eav	0.43

Horizontal Illuminance (lux)

Carparking 4

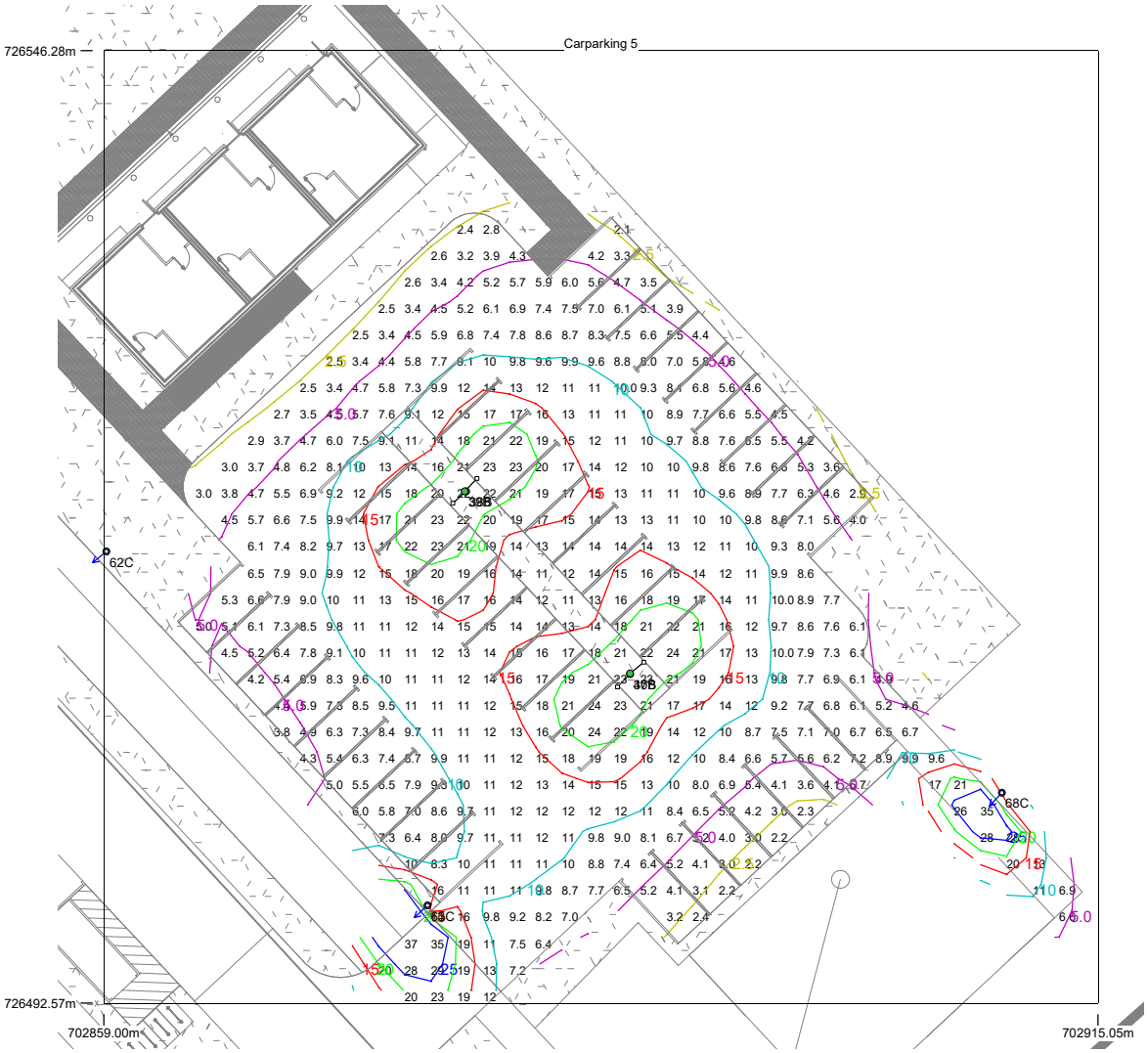


Results

Eav	7.67
Emin	2.10
Emax	15.62
Emin/Emax	0.13
Emin/Eav	0.27

Horizontal Illuminance (lux)

Carparking 5



Results

Eav	10.75
Emin	2.14
Emax	36.82
Emin/Emax	0.06
Emin/Eav	0.20