OCSC

O'CONNOR · SUTTON · CRONIN

MULTIDISCIPLINARY CONSULTING ENGINEERS

L371: ANGLESEA TERRACE, CORK.

SITE LIGHTING REPORT

For
LDA

3rd October 2025

NOTICE

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DOCUMENT CONTROL & HISTORY

OCSC Job No: L371	Project Code	Originator	Zone Volume	Level	File Type	Role Type	Number	Status / Suitability Code	Revision
	L371	OCSC	XX	XX	RP	EL	0001	S3	P04

Rev.	Status	Authors	Checked	Authorised	Issue Date
P04	S3	JF	BoC	WF	03/10/2025

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1 INTRODUCTION

This report outlines the design criteria and considerations for the proposed residential development at Anglesea Terrace, Cork incorporating existing lighting at the site.

It has been prepared in conjunction with a planning application to Cork City Council.
The report considers the preliminary lighting design as developed by O'Connor Sutton Cronin (OCSC) and should be read in conjunction with OCSC drawing L371-OCSC-XX-XX-DR-EL-0001 Proposed Site External Lighting Layout.

The external lighting within the proposed development area will be managed and maintained by the Cork City Council. The drawings and calculations submitted are to demonstrate the lux level averages across the development are meeting the standard set out by Cork City Council for road lighting.
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- Cork City Council document on Public Lighting Installations in Residential and Industrial Areas,
- Electrical work shall also comply with the requirements of ESB Networks' National Code of Practice for Customer Interface.

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2 PROPOSED DEVELOPMENT

The proposed development Anglesea Terrace is located at the corner of Old Station Road and the South City Link Road in Cork City. The development comprises a multi storey apartment Block with 147 apartments with upgraded roads and footpaths at Anglesea Terrace. The project is currently under design, proceeding to Tender.

The site is located adjacent to the N27, South City Link Road with access from Old Station Road and Anglesea Terrace. The site is a brownfield site The site is owned by Cork County Council.

The existing 4 No public lights and columns on old station road have reached their end of life are to be replaced for new including the underground cabling., The 2 No Existing Pole lights on Anglesea terrace have reached their end of life are to be replaced for new including cabling. The Existing Pole light on the St Vincents footpath is to be decommissioned and removed from service. The Existing building mounted street light on the building to be demolished across from St Vincents hostel is to be decommissioned and removed from service. Two No New Colums and LED lights are to be incorporated into the new development on Anglesea terrace, The public access path to the west from Anglesea Terrace to the South Link Road is to be provided with public lighting via new wall mounted LED luminaires.

Prior to Installation the contractor shall liase with Cork City Lighting department and agree the above changes and need for any or all road lighting to be maintained during the installation of the new fittings.

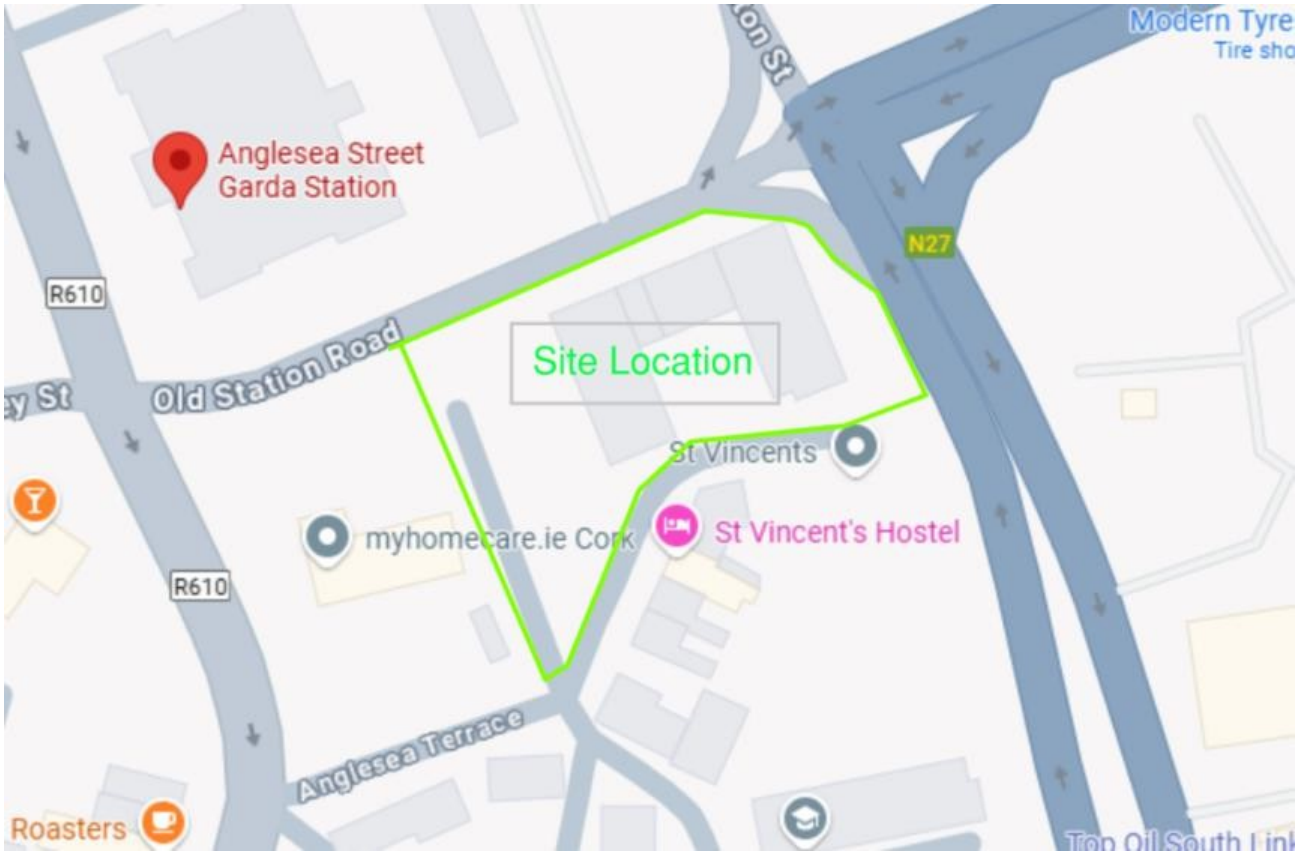

Figure 1 - Proposed site plan
(DR-CCC-A-SK-101)

3 THE DESIGN

3.1 EXTERNAL LIGHTING

Please refer to Appendix A for site lighting layout. Drg No L371-OCSC-XX-XX-DR-EL-0001

The external lighting has been designed in the best possible way for visual comfort, biodiversity, and suitability, and shall be specified in accordance with the appropriate maintained illuminance levels recommended by the following documents:

- EN13201-2-2015 Lighting Classes for external lighting. (Published on: 1st Jan 2015 by BSI Standards Limited 2015)
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Lighting design shall ensure that:

- All night-time lighting is concentrated in the appropriate areas
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- light pollution is minimised
- energy consumption is minimised
- To enhance security

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Increasing local biodiversity and ecology with native tree planting and wildlife habitat creation is a priority for this development. It is widely recognised that artificial lighting can have detrimental effects on nocturnal animals and in particular bats. Therefore, the development lighting strategy has considered the following: -

- **Do not over light** - Where relevant guidance gives a range of illumination levels the lowest one which is appropriate shall be utilised. No lighting is directly at the open water or trees or the canal frontage.
- **Luminance distribution** - The spread of light shall be kept near to or below the horizontal where possible.
- **Minimise UV light** - Selected luminaires shall emit minimal UV light. This can be achieved by

selecting LED luminaires.

- **Colour temperature of lamps** - All light sources shall be 3000K maximum.
- **Lighting controls** – Consideration shall be made to when lighting is operational to reduce detrimental impacts on nocturnal animals.
- In compliance with Bat Conservation Ireland guidelines the following results were achieved:

  - ❖ Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011)
  - ❖ Bats & Lighting - Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, December 2010)-referred to above.
  - ❖ Bats and Lighting in the UK – Bats and the Built Environment Series (Bat Conservation Trust UK, January 2008).

3.3 LIGHTING CLASSES

The appropriate lighting classes shall be in accordance with BS EN 13201-2: 2015 (Table 3) ''Lighting Classes for External Lighting'' detailed below:

Class	Horizontal Illuminance	
	Maintained average illuminance. (lx) *	Minimum maintained illuminance (lx)
P1	15	3
P2	10	2
P3	7.5	1.5
P4	5	1
P5	3	0.6
P6	2	0.6
P7	**Not determined**	**Not determined**
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Table 1 - Lighting Classes for external lighting

The following design parameters and criteria were used in the design of the external lighting.

Part M and BS8300 guidelines are considered for the stairs/ramps and entrances to the site.
CIBSE guidelines considered while installing and designing the strategy lighting for areas like roadways.
Minimum lux level to be used or as required by Health & Safety especially along the perimeters.

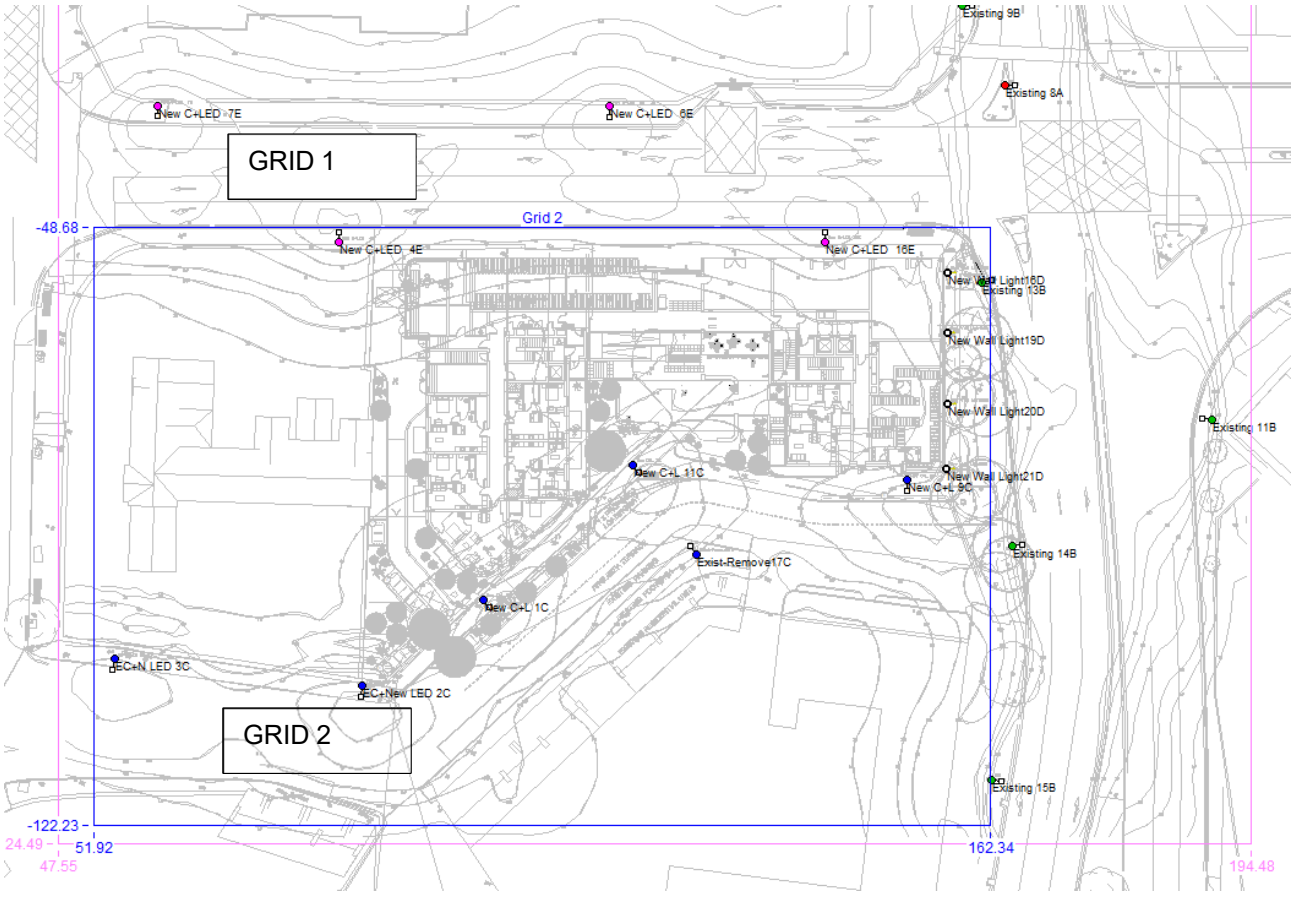
Lighting Classification
The designated lighting classifications are as follows

- P3 – Residential Roadways
  C3 – Conflict Areas

3.4 BASIS OF DESIGN

The lighting design has been designed to reflect a residential development. Figure 2 below is the proposed typology lighting strategy plan for the development.

Existing XX = Existing Fitting & Lamp (No Works Under This Submission)
EC+N XX =Existing Column Add New LED Lamp
New C+LED XX =New Column and New LED Lamp.



Proposed Typology Lighting Plan

Zone Type (Based on development typology plans)	Allocated Class (Based on CEN/TR 13201-1:2015)
Grid 1 (Conflict Road / Area)	C3
Grid 2 (Pedestrian Roads)	P3

Figure 2 - Lighting classes for external lighting

To provide for uniformity, the actual value of the maintained average illuminance shall not exceed 1.5 times the minimum illuminance value indicated for the class.
The overall uniformity (Uo) is calculated and measured according to EN 13201-3 and EN 13201-4.

Calculations were carried out in accordance with BS 5489: 2020 using the "Lighting Reality" suite of Software

3.5 LUMINAIRES

The following luminaires have been used as the basis of this design:

A	ENSO ASYMMETRIC 32 LED 350mA
B	AXIA 3.3 5266 Integrated lenses 64 OSLON SQUARE GIANT@880mA
C	AXIA 2.1 5166 Integrated lenses 16 OSLON SQUARE GIANT@700mA
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All luminaires are 3000K colour temperature. The desired lighting design may also be achieved by other luminaires and the final lighting installation may use other luminaires, with modified positioning and aiming to achieve the same result and prevent upward light spill. Manufacturers' stated performance characteristics are subject to change.

3.6 LIGHT SPILL

The lighting calculations were conducted to examine the light spill from the fittings. It was concluded that the levels were appropriately low. As an E4 zone a Min lux average level of 1.5 lux would be considered appropriate.

Figure 4

Table 1 – Environmental lighting zones

Zone	Lighting Environment	Examples
E0	Intrinsically dark	UNESCO Starlight Reserves, IDA Dark Sky Parks, Major optical observatories
E1	Dark	Relatively uninhabited rural areas
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NOTE Regardless of the level of urban development, the recommendations for Environmental Zone 1 or 0, should be followed for all locations within 100 km of a major optical astronomy observatory. Regardless of the level of urban development, the recommendations for Environmental Zone 2 (or better) should be followed for locations within 30 km of an operating urban optical astronomy observatory, and for locations between 100 km and 300 km from a major optical astronomy observatory.		

Table 1 CIE 150: 2017

(Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations, 2nd Edition)

Figure 5

Table 2 – Maximum values of vertical illuminance on properties

Light Technical Parameter	Application Conditions	Environmental Zones				
		E0	E1	E2	E3	E4
Illuminance in 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
* If the installation is for public (road) lighting then this value may be up to 1 lx.						

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4 RESULTS

Figure 6 indicates the predicted illumination levels as indicated by the contour lines.

See attached Lighting Reality Contours layout "drawing L371-OCSC-XX-XX-DR-EL-0001" for detailed results.

Figure 6 – Results for residential road

From the Lighting Report in Appendix B, the Results for the overall residential road lighting layout are as per the following:

Grid 1 – Station Road

Results

Eav	15.65
Emin	9.47
Emax	25.66
Emin/Emax	0.37
Emin/Eav	0.60

Grid 2 – Anglesea Terrace

Results

Eav	8.81
Emin	1.72
Emax	23.09
Emin/Emax	0.07
Emin/Eav	0.20

The above result is from the attached lighting report located in Appendix B, The result are compliant with a C3 & P3 Road as set out in 5489:2020 using the lamps and standards as scheduled in the lighting report.

Appendix A SITE LIGHTING DRAWING

Refer To Drawing L371-OCSC-XX-XX-DR-EL-0001 Attached

Appendix B LIGHTING CALCULATION REPORT

Refer To Lighting Reality Report L371- Attached

Appendix C LUMINAIRE DATA SHEETS

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ROAD

AXIA 3

PRO FLEX®

Engineered for performance, designed for the customer experience

With customer feedback playing a critical part in our innovative design process, we developed AXIA 3. More than a luminaire, it is a platform delivering sustainability, cost-effectiveness and customer experience all while supporting smart city frameworks. Based on experience from the hundreds of thousands AXIA luminaires installed worldwide, this third generation luminaire pushes the boundaries with photometric innovation, ease and speed of installation and FutureProof connectivity.

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IP 66 IK 10

URBAN & RESIDENTIAL STREETS | BIKE & PEDESTRIAN PATHS | RAILWAY STATIONS & METROS | CAR PARKS | LARGE AREAS | SQUARES & PEDESTRIAN AREAS | ROADS & MOTORWAYS

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The most comprehensive and economical LED lighting solution

AXIA 2 provides the most comprehensive and best value LED solution for lighting any road, street or pedestrian area. It offers all the advantages of LED lighting, without the high cost associated with LEDs.

With its photometric engine providing light distributions adapted to various applications, AXIA 2 is one of the highest performing luminaires available on the market to offer a fast return on investment.

Building on the strengths of the ground breaking AXIA, this second-generation luminaire, is designed to be the ultimate multi-purpose fixture, providing a cost-effective solution for those looking to reduce their energy costs.

IP 66 | IK 10 | IK 09

IK 08

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AREA

INDU WALL PACK

Comfort and efficiency for exterior lighting

Available in two sizes, INDU WALL PACK outperforms all conventional downlight fixtures by providing a bright and long-lasting light for outdoor wall mounted applications. Its slim design ensures a discreet integration without compromising on performance.

INDU WALL PACK delivers a bright white light to ensure perfect visibility and comfort at all times. Thanks to its high optical performance and strong mechanical design, it can achieve substantial energy and maintenance savings. As an option, INDU WALL PACK can integrate a detection sensor and a battery for anti-panic lighting.

IP 65 | IK 09

RAILWAY STATIONS & METROS | CAR PARKS | INDUSTRIAL HALLS & WAREHOUSES | SPORT FACILITIES

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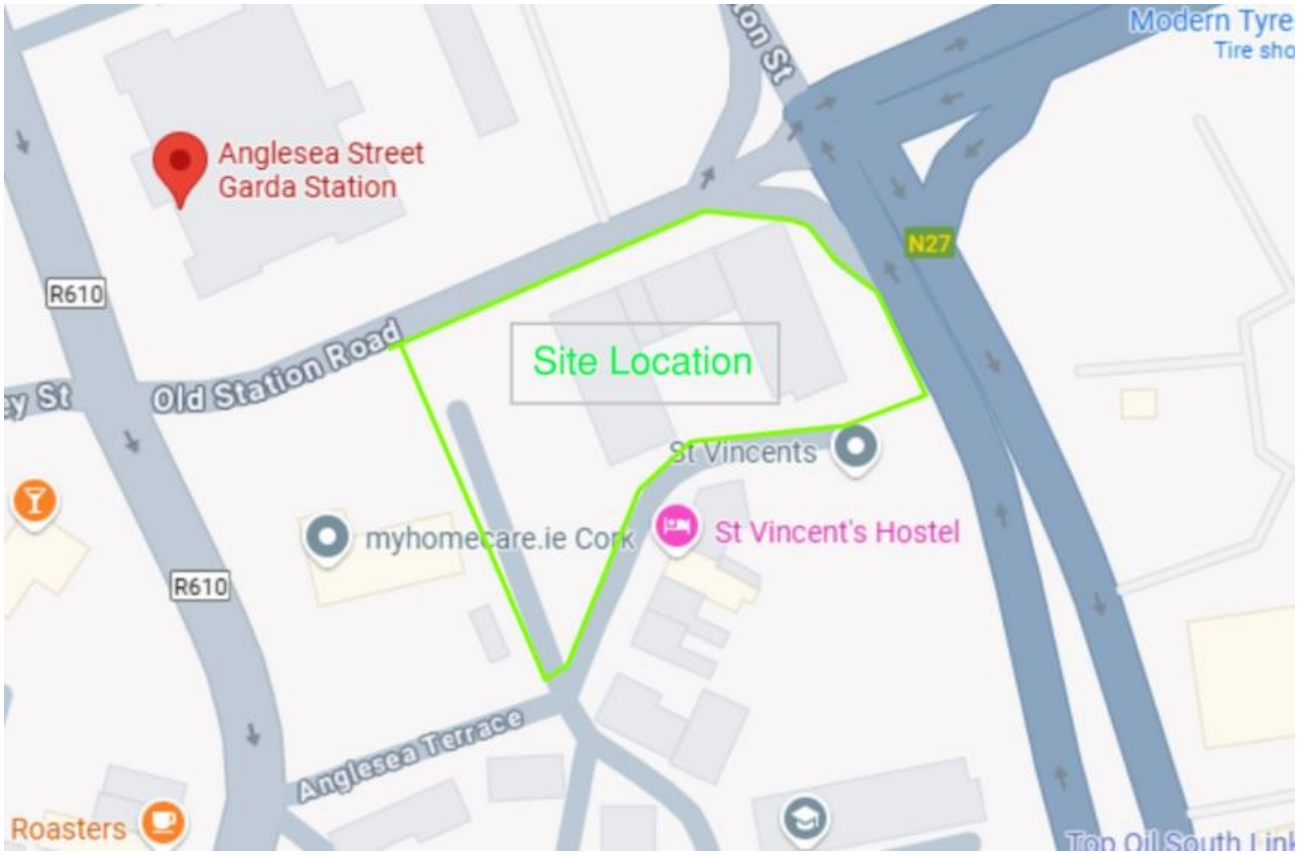

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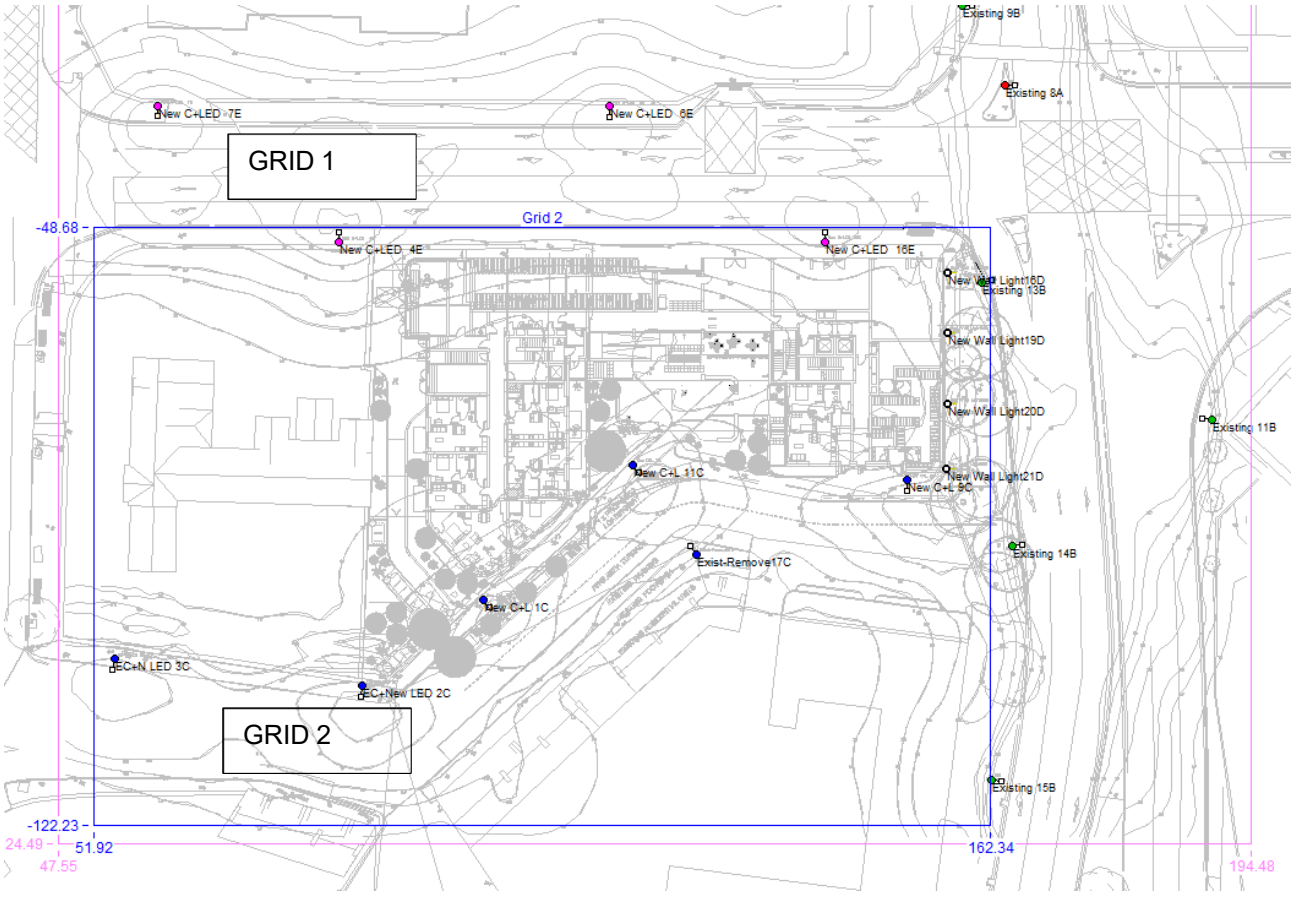

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Table 1 – Environmental lighting zones

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Figure 6 indicates the predicted illumination levels as indicated by the contour lines.

See attached Lighting Reality Contours layout "drawing L371-OCSC-XX-XX-DR-EL-0001" for detailed results.

Figure 6 – Results for residential road

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AXIA 2 provides the most comprehensive and best value LED solution for lighting any road, street or pedestrian area. It offers all the advantages of LED lighting, without the high cost associated with LEDs.

With its photometric engine providing light distributions adapted to various applications, AXIA 2 is one of the highest performing luminaires available on the market to offer a fast return on investment.

Building on the strengths of the ground breaking AXIA, this second-generation luminaire, is designed to be the ultimate multi-purpose fixture, providing a cost-effective solution for those looking to reduce their energy costs.

IP 66 | IK 10 | IK 09

IK 08

Schréder
Experts in lightability™

AREA

INDU WALL PACK

Comfort and efficiency for exterior lighting

Available in two sizes, INDU WALL PACK outperforms all conventional downlight fixtures by providing a bright and long-lasting light for outdoor wall mounted applications. Its slim design ensures a discreet integration without compromising on performance.

INDU WALL PACK delivers a bright white light to ensure perfect visibility and comfort at all times. Thanks to its high optical performance and strong mechanical design, it can achieve substantial energy and maintenance savings. As an option, INDU WALL PACK can integrate a detection sensor and a battery for anti-panic lighting.

IP 65 | IK 09

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