

Limerick City & County Council in partnership with Limerick Twenty Thirty DAC

Cleeves Riverside Quarter

Lighting Report

Reference: CRQMP-ARUP-ZZ-ZZ-RP-EE-0001

C01 | 3 October 2025

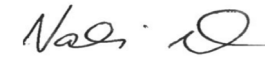
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Job number 265545-00

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Document Verification

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1. Lighting Design Principles

1.1 Introduction

This Lighting Report has been prepared by Arup on behalf of Limerick City and County Council in partnership with Limerick Twenty Thirty DAC as part of a planning application for the proposed Cleeves Riverside Quarter Development.

Limerick City and County Council in partnership with Limerick Twenty Thirty DAC, intends to seek the approval of An Coimisiún Pleanála in accordance with Section 175 and 177AE of the Planning and Development Act 2000, as amended, for a mixed-use development that seeks the regeneration and adaptive use of a strategic brownfield site, as part of the Limerick City and County Council 'World Class Waterfront revitalisation and transformation project'.

This report details the classification selection and luminaire selection for the Cleeves Riverside Quarter. Considerations have been made for traffic, pedestrians and wildlife in the area, and calculations for preliminary design were performed to meet these indicators.

1.2 Proposed Development

The proposed development comprises of Phase II, of an overall Masterplan with four phases of development proposed, Phase II is subsequent to ongoing stabilisation and repair of the Flaxmill protected structure (Phase I). Phase II is intended to comprise of an education campus, inclusive of the adaptive reuse of the Flaxmill Building as part of that development and will be subject to a future separate application Phase IV comprising the Shipyard site will be the final phase of development.

The proposed development provides for the A) Demolition of a number of structures to facilitate development and B) Construction and phased delivery of (i) buildings within the site range in height from 3-7 stories (with screened plant at roof level) including (a) 234 no. residential units; (b) 270 no. student bedspaces (PBSA) with ancillary resident services at ground level; (c) 256 sqm of commercial floorspace; and (d) a creche; (ii) extensive public realm works (iii) riverside canopy and heritage interpretive panels (iv) 3 no. dedicated bat houses; (v) Mobility Hub with canopy; and (vi) all ancillary site development works including (a) water services, foul and surface water drainage and associated connections across the site and serving each development zone; (b) attenuation measures; (c) raising the level of North Circular Road; (d) car and bicycle parking; (e) public lighting; (f) telecommunication antennae and (g) all landscaping works. Consent is also sought for use of PBSA accommodation, outside of student time, for short-term letting purposes.

The lighting design and calculations undertaken as part of this report examine Phase II for this development. This includes outdoor spaces within the education campus, residential areas, Shipyard site, as well as parts of the public roads, O'Callaghan Strand and North Circular Road.

1.3 Design Guides and Standards

Illuminance levels and design criteria have been proposed in accordance with the following:

- Limerick City and County Council Public Lighting and Product Specification 2022
- BS 5489-2 2016 Design of road lighting
- BS EN 13201-2 2015 Road Lighting Performance requirements
- ILP (2023) Bats and Artificial Lighting at Night, Guidance note GN08/23, Bat Conservation Trust
- ILP (2007) TR12 Lighting of Pedestrian Crossings

These standards are listed in the LCCC design specification or are considered best practice in Ireland.

1.4 Wildlife Accommodations

The selection and design of luminaire temperature, types, and controls have been designed to mitigate the impact of the sitewide lighting design on the local wildlife. This is detailed in the relative sections of this report.

1.5 Class Specifications

Following the Limerick City and County Council guidelines outlined in their Public Lighting and Product Specification, we are proposing to achieve a classification P3 for all areas on the site including the adjacent roads which will be taken in charge by the LCCC on completion of the project. This stipulates a minimum average lux level of 7.5 lux, and a minimum point lux level of 1.5 lux.

1.6 Lighting Temperature

The LCCC guidance on outdoor lighting colour temperature prefers the use of 4000K colour temperature luminaires in public areas. In order to reduce the ecological impact on the site, the colour temperature has been reduced to 2700K as specified the relevant guidance note. This colour temperate allows for better visual comfort for the wildlife.

1.7 Luminaire Types

In addition to considering colour temperature, further measures have been taken in the selection of luminaires to accommodate wildlife requirements. Following consultation with the IDT, it was agreed that the scheme will incorporate the following luminaires:

- Columns will be used throughout the site. Within most areas of the site, lighting columns will be kept at or below 4m and have a specified directional beam to reduce back spill to reduce unnecessary lightful on bat foraging areas. 3.5m columns will be used along the quarry wall, as specified by the IDT as this is the main bat foraging area within the site. Columns used in these areas will be Darksy approved, to reduce unnecessary upward light spill
- The use low-level bollards will also be incorporated into many areas to suit the design team vision for the site, primarily in bat foraging areas, to reduce high-level light. These bollards will be fitted with downturned, asymmetrical beam optics to direct the light predominantly on footpaths or amenity spaces, while minimising spill onto any greenspaces located behind them
- Handrail lights will be used in areas with steps. This lighting type will maximise the lighting on the steps for safety and minimise upwards light spill and impact on the ecology. Lighting in handrails will be fit with dimming control to achieve appropriate lux levels
- Surface mounted downlight luminaires are proposed in some areas, primarily the canopy areas on the main site, and in the shipyard. These luminaires were selected to reduce upwards light spill on the site while providing sufficient light fittings for pedestrians within the scheme constraint
- Recessed wall lights will be used along steps and walkways around the site. These fixtures will be mounted between 0.3-0.5m and selected to achieve high uniformity while maintaining low level distribution of light. This luminaire is also Darksy approved
- In the central Amenity space (Ref Zone 4 on the attached zoning drawing Appendix B), a mix of 4.2m and 6.2m decorative columns will be used to blend with the landscape. Wide beam fixtures will be mounted on these poles, to evenly distribute light across this open amenity space, while reducing the overall about of street furniture in this open space
- Standard 8m columns will be used along main public roads, fitted with a luminaire specified for use along roads and pedestrian areas. The light fittings currently in place in the area will be removed and replaced, unless otherwise decided between the IDT and LCC
- Standard 6m columns are used in the shipyard car park, with 4m decorative columns used in the adjoining amenity space

- Standard type B2 Belisha beacons have been positioned on either side of the pedestrian crossing on North Circular Road, to illuminate the crossing in line with the ILP Technical Report 12. The lanterns used at the crossing shall be provided with the specific crossing optic, as detailed in the luminaire schedule

All luminaires will have an LED light source with dimming capabilities.

Further details on the luminaire types used can be found in the appended luminaire schedule. Appendix A.

1.8 Controls

The site lighting will be divided across the site.

- The control for the lighting will be split across a number of zones as per the attached sketch : CRQMP-ARUP-SK-E-2201 as seen in Appendix B and as summarised below. These zones are in keeping with the phased development of the site masterplan
 - Zone 1: Salesians Site
 - Zone 2: Quarry
 - Zone 3: Stonetown terrace
 - Zone 4: O'Callaghan Strand
 - Zone 5: Shipyard Site
 - Zone 6: Public Lighting
- Zones 1 – 4 as listed above will be fed from a dedicated External Lighting panel located in the relevant building switchroom in that zone. The Lighting DB shall be fitted with a meter. The lighting for these areas will incorporate photocell control. The light fittings shall be dimmable and a pre agreed dimming and trimming profile will be programmed to maximise the efficiency. Some of the fixtures for example along the quarry road, will have movement sensor control to allow fittings to remain turned off when not in use
- The Shipyard site will be fed from local pillars located on the shipyard site. The control will be via Dusk to Dawn PIR's mounted on each fitting and the lights will be programmed with an agreed dimming and trimming regime to suit site activities
- The LCCC public lighting will be fed from new unmetered supply on North Circular Road

Walkways and amenity areas will be programmed with dusk to midnight switching, and roadways with dusk to dawn switching, as per LCCC specification.

Any handrail light circuits within the development will require an external driver pillar to accommodate the electrical equipment required to power these lights that cannot be contained within the handrails themselves. These will be located within 15m of the handrail, or per supplier recommendation.

The Quarry roadway being the primary route for the foraging wildlife will incorporate presence detection, the lighting will be off unless there is movement detected that will activate the lights in this area via movement sensors. The purpose of this is to always ensure minimum light in the area to allow maintenance of the foraging route.

A similar system will be used to control the handrail lighting along the reservoir walkway, with motion sensors located at the entrances to and along the walkway. This will ensure safe use of the walkway while reducing any unnecessary light spill on the reservoir below.

LCCC lighting will be taken in charge by LCCC Control for the lighting shall be in line with LCCC requirements. Light fittings shall have dimming capabilities and be fitted with LCCC approved photocell for control.

1.9 Lighting Calculations

Preliminary lighting calculations were performed in each area of the site to ensure the final lighting design achieved sufficient lux levels based on the classification selection as outlined above, and to meet the requirements of the design team.

Appendix B attached includes proposed lighting layout. Also included is a key plan to indicate the various zones on the site.

Appendix C includes details of the calculations completed using Lighting Reality software, and tables of results.

1.10 Construction Stage Lighting

Construction work will generally be confined to the core Working Hours, which for most of the year occurs primarily during daylight hours. Therefore, additional lighting will not be required for the majority of the construction work. There will however be occasion where the provision of portable lighting will be required.

Following studies carried out on ecological impact on the site, and the identification of foraging bats in the area, the following measures will be applied in relation to site lighting during construction.

- Light fitting colour temperature used will be set to a maximum of 2700K to accommodate the local wildlife requirements. This colour temperature allows for better visual comfort for the wildlife
- As per the permanent strategy, lighting columns will be kept at or below 4m and have a specified directional beam to reduce back spill and unnecessary illumination on bat foraging areas. 3.5m columns will be used along the quarry wall as this is the main bat foraging area within the site
- Low-level bollard light fittings will be preferred to temporary lighting columns, especially in the Quarry and along the northern boundary, to reduce high-level light within bat foraging areas

In addition to this:

- The column lighting will be cowled and angled downwards to minimise spillage to surrounding properties and other sensitive receptors
- Lighting will be provided with a minimum luminosity sufficient for safety and security purposes, where practicable, precautions will be taken to avoid shadows cast by the site hoarding on surrounding roads, footpaths and amenity areas
- Motion sensor lighting and low energy consumption fittings will be installed to reduce usage and energy consumption
- Lighting will be positioned to not cause distraction or confusion to pass motorists, river users, or navigation lights for air or water traffic
- The contractor will need to maintain control and ensure all lights are turned off when not required
- The security strategy will be developed to reduce potential requirements for evening lighting

Appendix A

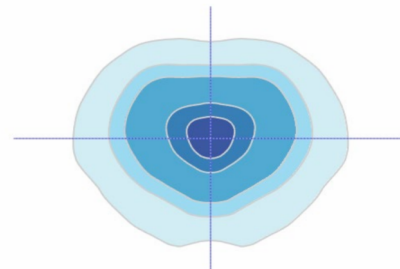
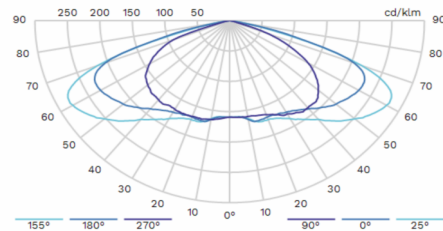
Luminaire Schedule

Job Title: **Cleeves Riverside Quarter**Luminaire Reference: **L1**Revision: **C01**Status: **A2-Issued for Planning**Document Reference: **CRQMP-ARUP-ZZ-ZZ-SH-E-0001**Date: **03/10/2025**Job Number: **267551-00****General Description**

IP 65 Pole mounted street light

As per Schreder Hestia Gen 2 Mini 5304 luminaire

Total luminous flux 3200lm

General Appearance**Fitting Information**

Manufacturer	Schreder	Control Gear Location	Integral
Manufacturing standard	EN 55015 / EN 61000-3-2 / EN 61000-3-3	Power Factor	
Catalogue number	10 LH351C 500mA 727 230V 01-37-041	Total Luminaire Wattage	31
Finish	Aluminium	CRI/Colour Temperature	70/2700K
Light Source Type	LED	Beam	
Control Gear Type	Driver	Luminaire Efficacy	
Dimmable & Type	Dali	Light Output Ratio	100%

Additional Information for Solid State Lighting Products

IESNA LM 80-08 tested		IEC Photometric Code	
Manufacturer of LEDs		Driver Current	
Service Life in hours	100,000	Initial Colour Variation	
Lumen Depreciation		Colour Variation at 6k hrs	
Failure Fraction		Warranty Length	

Contact

Additional Information & Accessories

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Job Title: Cleaves Riverside Quarter

Luminaire Reference: L2

Revision: C01

Status: A2-Issued for Planning

Document Reference: CRQMP-ARUP-ZZ-ZZ-SH-E-0001

Job Number: 267551-00

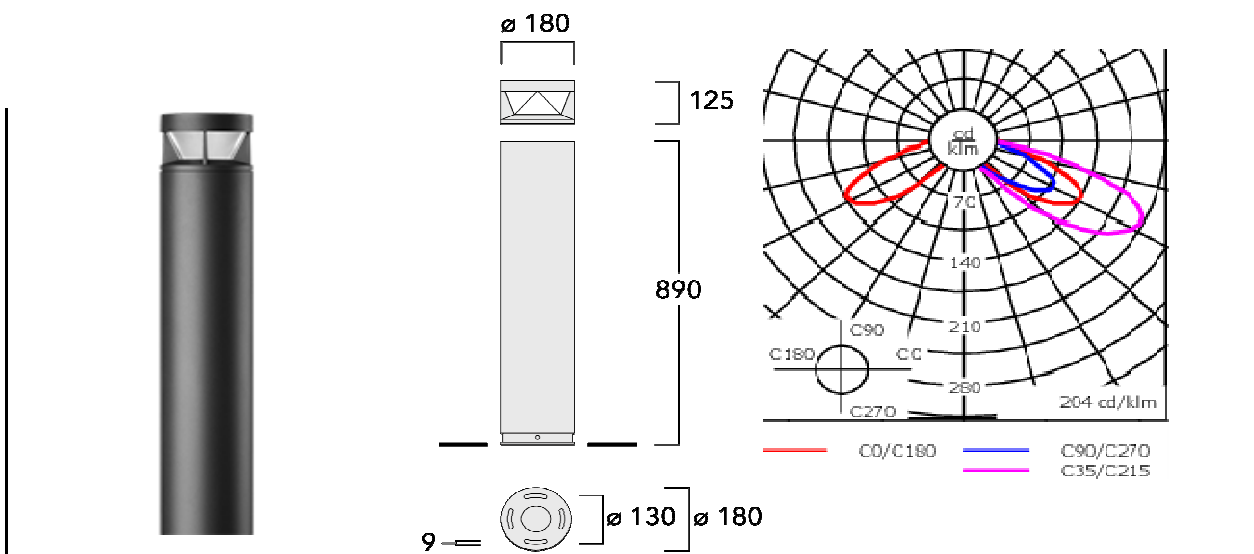
Date: 03/10/2025

General Description

IP66 Marine-gradeLED bollard

As Per We-ef KTY234 1000mm

Total luminous flux 628.5 lm

General Appearance**Fitting Information**

Manufacturer	We-ef	Control Gear Location	Integral
Manufacturing standard		Power Factor	
Catalogue number	114-0183	Total Luminaire Wattage	13
Finish	Grey Aluminium	CRI/Colour Temperature	80/2700K
Light Source Type	LED	Beam	Rectangular, side throw
Control Gear Type	Driver	Luminaire Efficacy	
Dimmable & Type	Dali	Light Output Ratio	100%

Additional Information for Solid State Lighting Products

IESNA LM 80-08 tested		IEC Photometric Code	
Manufacturer of LEDs		Driver Current	
Service Life in hours	90,000	Initial Colour Variation	
Lumen Depreciation		Colour Variation at 6k hrs	
Failure Fraction		Warranty Length	

Contact

Additional Information & Accessories

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Job Title: Cleaves Riverside Quarter

Luminaire Reference: L3

Revision: C01

Status: A2-Issued for Planning

Document Reference: CRQMP-ARUP-ZZ-ZZ-SH-E-0001

Date: 03/10/2025

Job Number: 267551-00

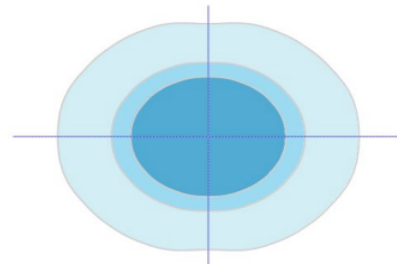
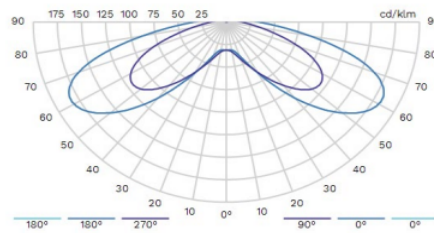
General Description

IP66 Column mounted luminaire

As per Schreder Allura LED Deep Shaped straiated PC 20 LH351C

Total luminous flux 3380 lm

General Appearance



Fitting Information

Manufacturer	Ubris Schreder
Manufacturing standard	EN 6059801, EN 62262
Catalogue number	54950S
Finish	Aluminium
Light Source Type	LED
Control Gear Type	Driver
Dimmable & Type	Yes

Control Gear Location	Integrated
Power Factor	
Total Luminaire Wattage	19
CRI/Colour Temperature	70/2700K
Beam	Symmetrical
Luminaire Efficacy	118
Light Output Ratio	100%

Additional Information for Solid State Lighting Products

IESNA LM 80-08 tested	
Manufacturer of LEDs	
Service Life in hours	100,000
Lumen Depreciation	
Failure Fraction	

IEC Photometric Code	
Driver Current	
Initial Colour Variation	
Colour Variation at 6k hrs	
Warranty Length	

Contact

Additional Information & Accessories

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Job Title: Cleeves Riverside Quarter

Luminaire Reference: L4

Revision: C01

Status: A2-Issued for Planning

Document Reference: CRQMP-ARUP-ZZ-SH-E-0001

Job Number: 267551-00

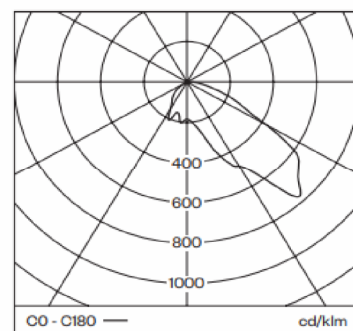
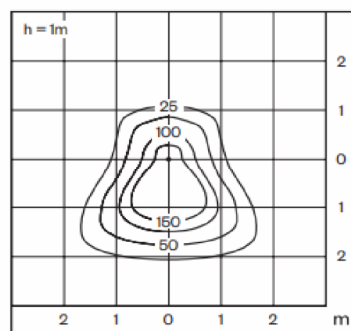
Date: 03/10/2025

General Description

Stainless steel handrail luminaire Asymmetrical beam system

As per DW Windsor Garda Pro Sym Classis 4LED 2k 4W

Total luminous flux 201 lm

General Appearance**Fitting Information**

Manufacturer	DW Windsor
Manufacturing standard	EN 60598
Catalogue number	GAR S 2K 30 SS 0 W 2.0 D
Finish	Stainless Steel
Light Source Type	LED
Control Gear Type	Driver
Dimmable & Type	Dali

Control Gear Location	Remote
Power Factor	
Total Luminaire Wattage	1.5
CRI/Colour Temperature	70/2700K
Beam	
Luminaire Efficacy	
Light Output Ratio	100%

Additional Information for Solid State Lighting Products

IESNA LM 80-08 tested	
Manufacturer of LEDs	
Service Life in hours	100,000
Lumen Depreciation	
Failure Fraction	

IEC Photometric Code	
Driver Current	
Initial Colour Variation	
Colour Variation at 6k hrs	
Warranty Length	

Contact

Additional Information & Accessories

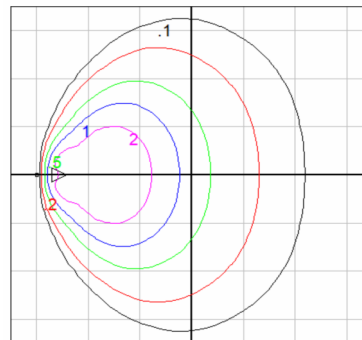
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Job Title: **Cleeves Riverside Quarter**Luminaire Reference: **L5**Revision: **C01**Status: **A2-Issued for Planning**Document Reference: **CRQMP-ARUP-ZZ-ZZ-SH-E-0001**Job Number: **267551-00**Date: **03/10/2025****General Description**

Recessed wall luminaire with assymetric forward throw distribution

As per BEGA Recessed wall luminaire - extended throw

Total luminous flux 301 lm

General Appearance**Fitting Information**

Manufacturer	BEGA	Control Gear Location	Remote
Manufacturing standard	NRTL	Power Factor	
Catalogue number	24063K3	Total Luminaire Wattage	5.1
Finish	Aluminium alloy	CRI/Colour Temperature	80/2700K
Light Source Type	LED	Beam	Extended throw
Control Gear Type	Driver	Luminaire Efficacy	
Dimmable & Type	Yes	Light Output Ratio	100%

Additional Information for Solid State Lighting Products

IESNA LM 80-08 tested		IEC Photometric Code	
Manufacturer of LEDs		Driver Current	
Service Life in hours	60,000	Initial Colour Variation	
Lumen Depreciation		Colour Variation at 6k hrs	
Failure Fraction		Warranty Length	

Contact

Additional Information & Accessories

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Job Title: Cleaves Riverside Quarter

Luminaire Reference: L6

Revision: C01

Status: A2-Issued for Planning

Document Reference: CRQMP-ARUP-ZZ-ZZ-SH-E-0001

Job Number: 267551-00

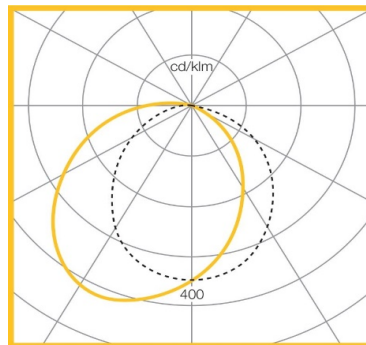
Date: 03/07/2025

General Description

IP 65 Wall mounted conical luminaire for outdoor applications

As Per Whitecroft lighting Spectre WX

Total luminous flux 1007 lm

General Appearance**Fitting Information**

Manufacturer

We-ef

Manufacturing standard

Catalogue number

SPXAH13KG

Finish

Die cast Aluminium

Light Source Type

LED

Control Gear Type

Driver

Dimmable & Type

Dali

Control Gear Location

Power Factor

Total Luminaire Wattage

CRI/Colour Temperature

Beam

Luminaire Efficacy

Light Output Ratio

Remote

9

80/3000K

Forward throw downward distribution

100%

Additional Information for Solid State Lighting Products

IESNA LM 80-08 tested

Manufacturer of LEDs

Service Life in hours

Lumen Depreciation

Failure Fraction

IEC Photometric Code

Driver Current

Initial Colour Variation

Colour Variation at 6k hrs

Warranty Length

Contact**Additional Information & Accessories**

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Job Title: **Cleeves Riverside Quarter**

Luminaire Reference: **L7**

Revision: **C01**

Status: **A2-Issued for Planning**

Document Reference: **CRQMP-ARUP-ZZ-ZZ-SH-E-0001**

Job Number: **267551-00**

Date: **03/10/2025**

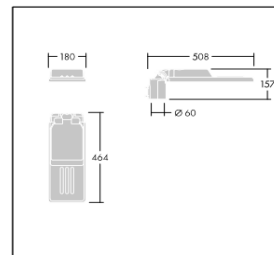
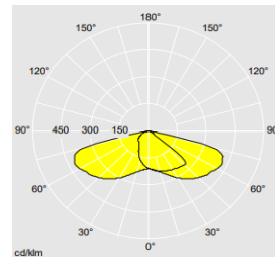
General Description

IP66 Column mounted luminaire

As per Thorn Lighting Isaro XS 12L85 730 NR CL2

Total luminous flux 1934 lm

General Appearance



Fitting Information

Manufacturer	Thorn Lighting
Manufacturing standard	EN AC -44300
Catalogue number	9663618
Finish	Textured Powder
Light Source Type	LED
Control Gear Type	Driver
Dimmable & Type	Yes

Control Gear Location	Integrated
Power Factor	0.97
Total Luminaire Wattage	13.8
CRI/Colour Temperature	70/2700K
Beam	Narrow Road Optic
Luminaire Efficacy	140
Light Output Ratio	

Additional Information for Solid State Lighting Products

IESNA LM 80-08 tested	
Manufacturer of LEDs	
Service Life in hours	100,000
Lumen Depreciation	
Failure Fraction	

IEC Photometric Code	
Driver Current	
Initial Colour Variation	
Colour Variation at 6k hrs	
Warranty Length	

Contact

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Additional Information & Accessories

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Job Title: Cleeves Riverside Quarter

Luminaire Reference: L8

Revision: C01

Status: A2-Issued for Planning

Document Reference: CRQMP-ARUP-ZZ-ZZ-SH-E-0001

Job Number: 267551-00

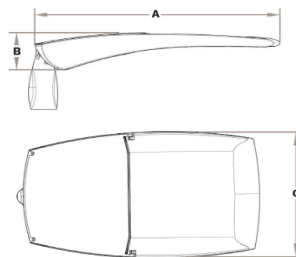
Date: 03/10/2025

General Description

IP66 Column mounted luminaire

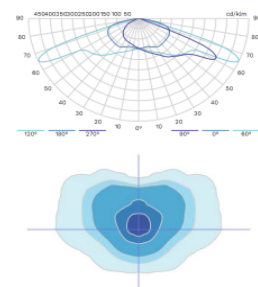
As per Schreder TECEO Gen 2 1 5393 350mA

Total luminous flux 2980 lm

General Appearance

AxBxC (mm)

TECEO GEN2 1 : 580x107x310 |

**Fitting Information**

Manufacturer	Schreder
Manufacturing standard	EN AC -44300
Catalogue number	9663618
Finish	Aluminium
Light Source Type	LED
Control Gear Type	Driver
Dimmable & Type	Yes

Control Gear Location	Integrated
Power Factor	0.97
Total Luminaire Wattage	13
CRI/Colour Temperature	70/2700K
Beam	Ultra Wide
Luminaire Efficacy	165
Light Output Ratio	

Additional Information for Solid State Lighting Products

IESNA LM 80-08 tested	
Manufacturer of LEDs	
Service Life in hours	100,000
Lumen Depreciation	
Failure Fraction	

IEC Photometric Code	
Driver Current	
Initial Colour Variation	
Colour Variation at 6k hrs	
Warranty Length	

Contact

Additional Information & Accessories

1. To be mounted on Schreder Thylia pole, as per XXXXX

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Job Title: **Cleeves Riverside Quarter**

Luminaire Reference: **L9**

Revision: **C01**

Status: **A2-Issued for Planning**

Document Reference: **CRQMP-ARUP-ZZ-ZZ-SH-E-0001**

Job Number: **267551-00**

Date: **03/10/2025**

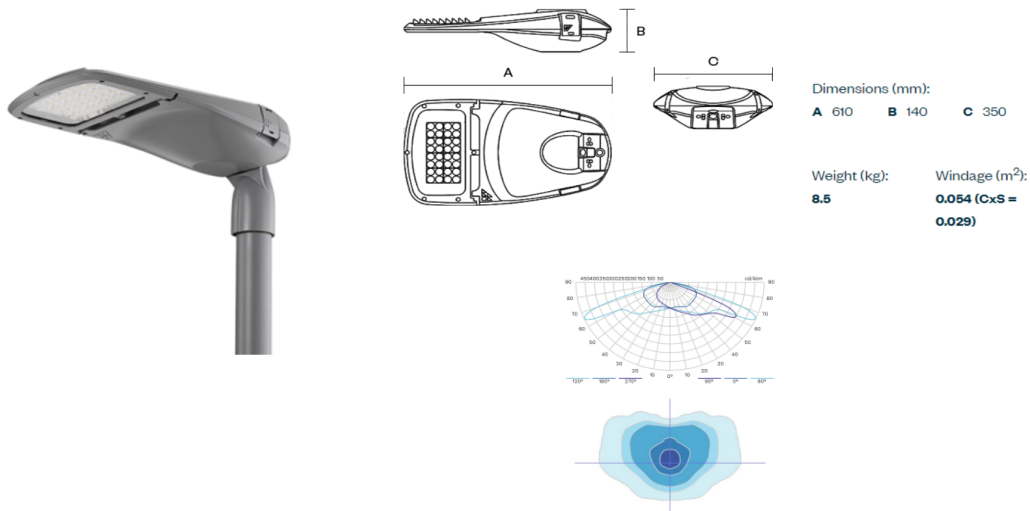
General Description

IP66 Column mounted luminaire

As per DW Windsor Kirium Pro S1 16 LED A1 2.7K 800mA

Total luminous flux 2980 lm

General Appearance



Fitting Information

Manufacturer	DW Windsor
Manufacturing standard	EN AC -44300
Catalogue number	42 0038 0000 1000
Finish	Aluminium
Light Source Type	LED
Control Gear Type	Driver
Dimmable & Type	Yes

Control Gear Location	Integrated
Power Factor	
Total Luminaire Wattage	93
CRI/Colour Temperature	70/2700K
Beam	ZL
Luminaire Efficacy	187
Light Output Ratio	

Additional Information for Solid State Lighting Products

IESNA LM 80-08 tested		IEC Photometric Code	
Manufacturer of LEDs		Driver Current	
Service Life in hours	100,000	Initial Colour Variation	
Lumen Depreciation		Colour Variation at 6k hrs	
Failure Fraction		Warranty Length	

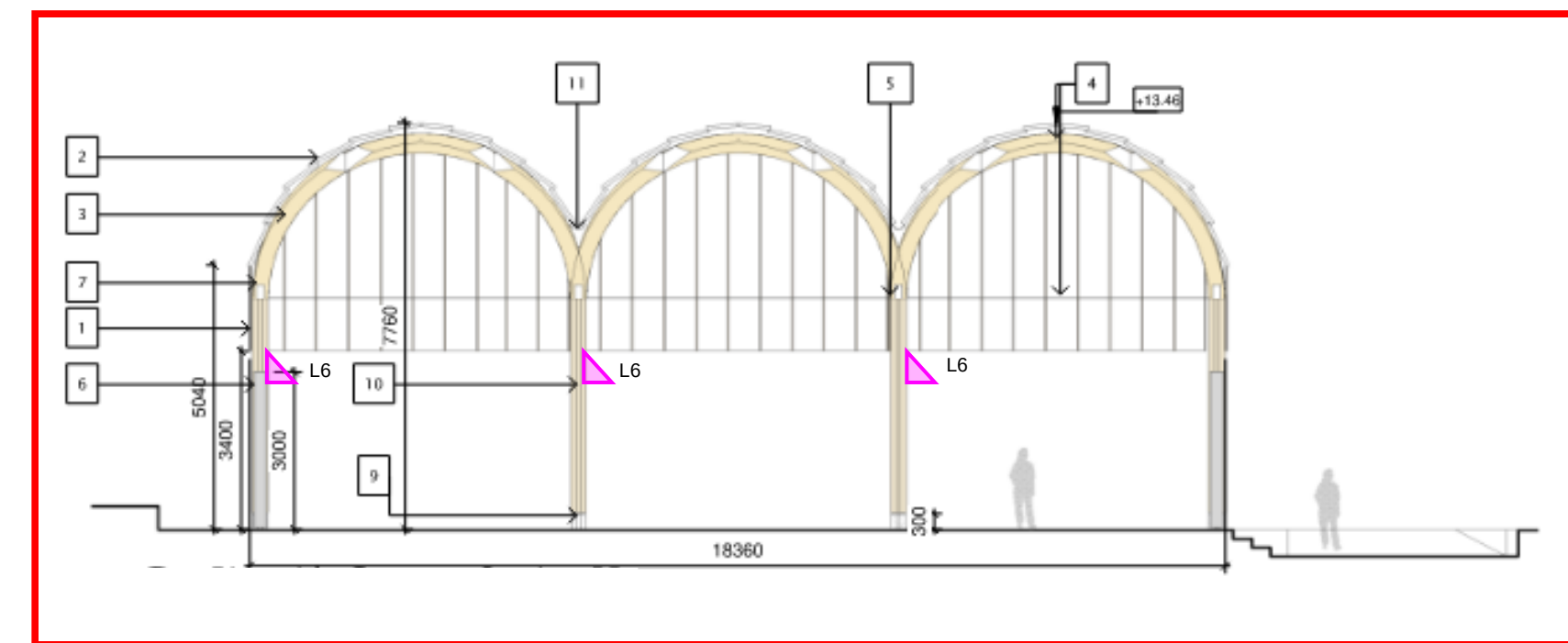
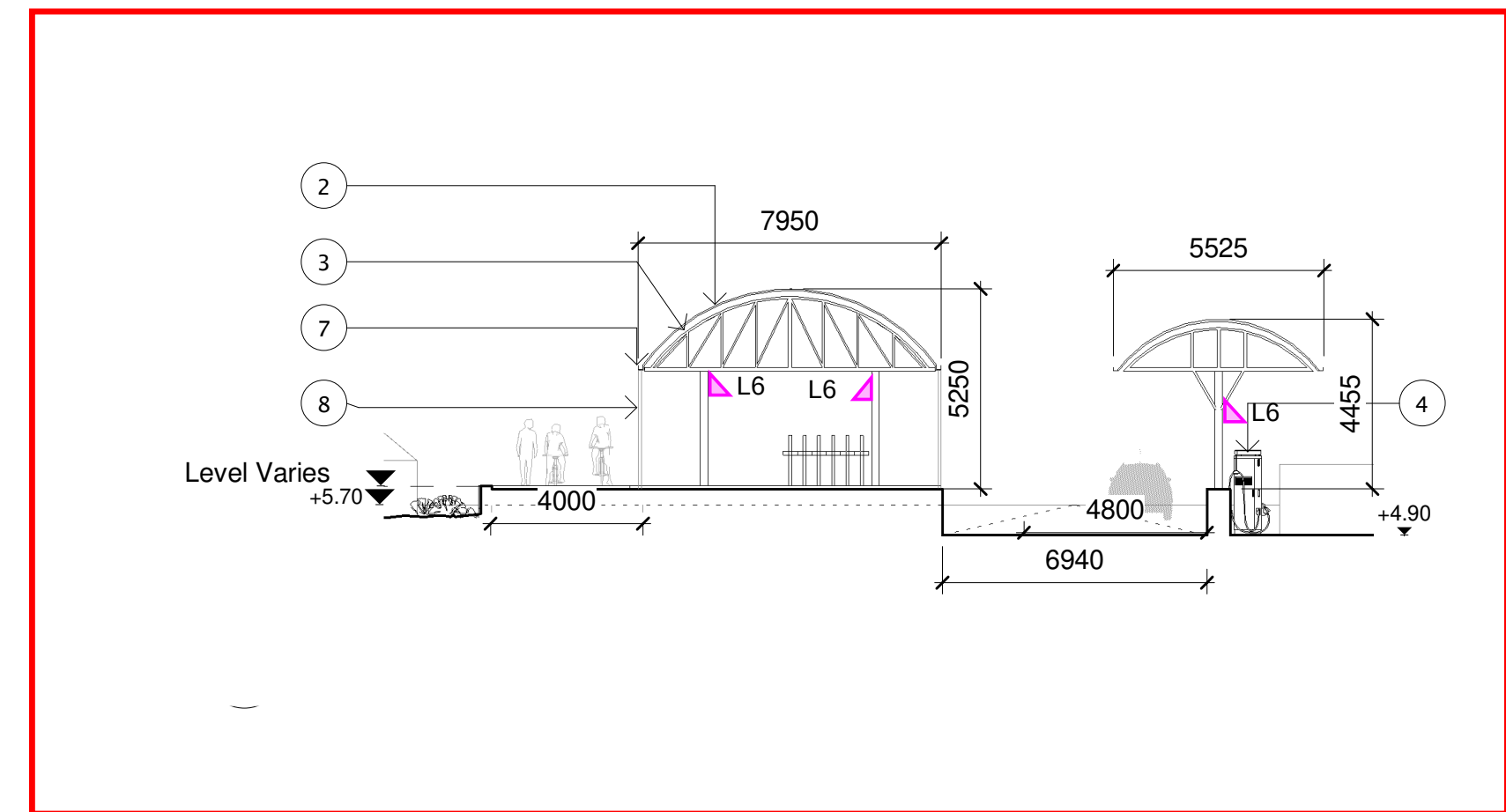
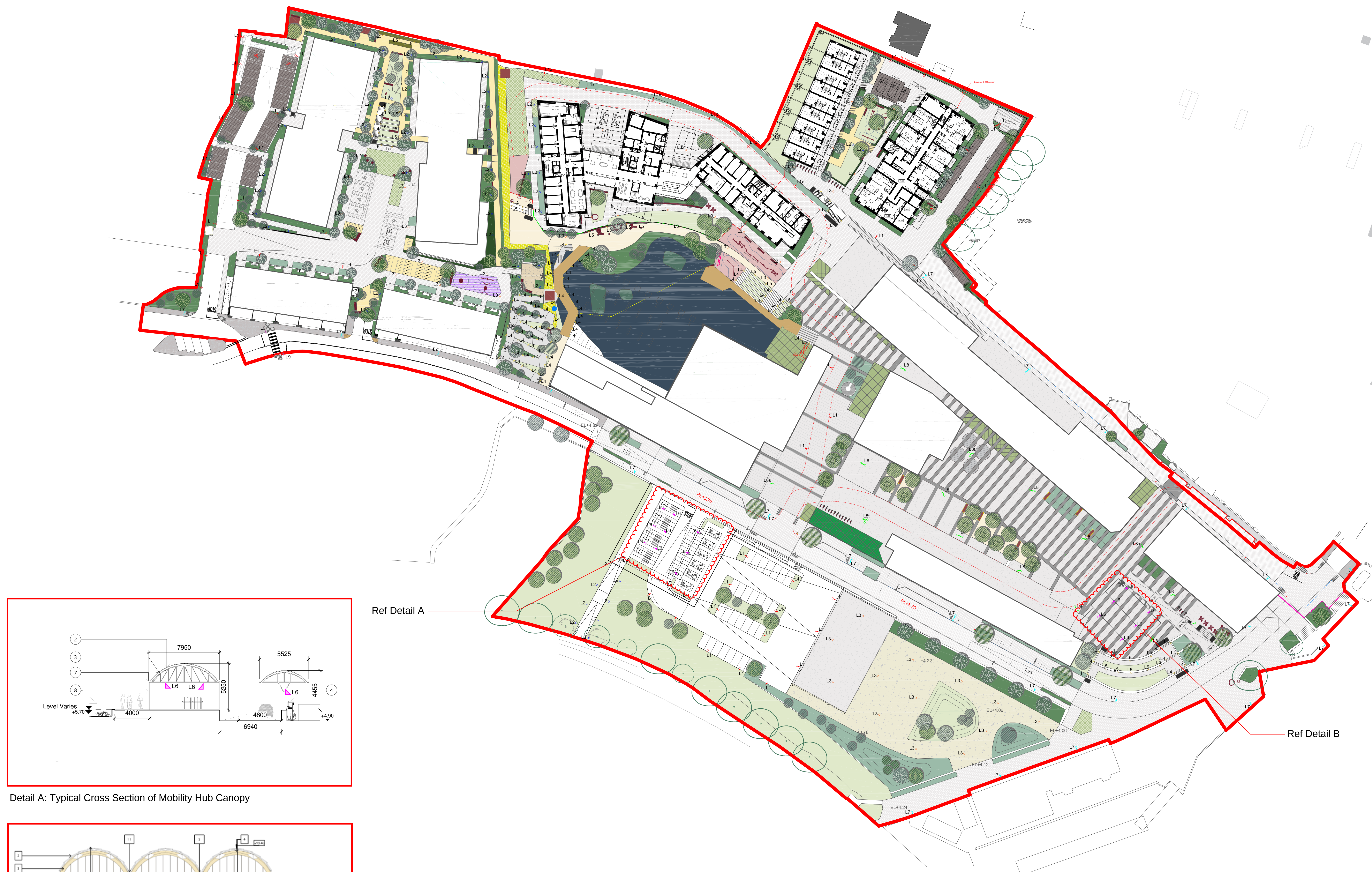
Contact

Additional Information & Accessories

1. To be fitted with pedestiran corssing optic
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4.
5.

Appendix B

Preliminary Layouts



Calculation Targets			
Class	Min Avg (lux)	Min Point (lux)	Min Uniformity
P3	7.5	1.5	0.2

Legend			
Ref	Synchr	Image	Legend
L1			100% color, 40 columns, 160 touchout As above, but mounted on the lower range of 2.5m
L2			Wavelength 400 nm 100 touchout As above, but single arm - 4.2m
L3a			Schreef Alkora 40 columns As above, but mounted on the lower range of 2.5m
L3b			DW Windows Guards 25 columns As above, but mounted on the lower range of 2.5m
L4			BEGA MFL 150 mm mounted with 40 columns As above, but single arm - 4.2m
L5			Wet of Spoons 100 mm mounted with 40 columns As above, but single arm - 4.2m
L6			Thin bars 30 80 columns 160 touchout 2.50m
L7			Schreef Teken Toes Column Double arm - 4.2m and 6.2m As above, but single arm - 4.2m
L8			As above, but 160 mm - 180 mm, 4.2m and 200 mm
L9			DW Windows Alkora Mounted on the type B2 double beam

C01	03/10/25	AM	AM	VA
Rev	Date	By	Chkd	Appd

ARUP

One Albert Quay
Cork, T12 X8N6, Ireland
Tel +353 (0)21 422 3200
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Limerick Twenty Thirty

Project Title

Cleeves Residential Quarter

Drawing Title

Lighting Layout

Scale at A0

NTS

Electrical

A2 - Issued for Planning

Asup Job No	Rev
265545-00	C01

ID _____

CRQMP-ARUP-ZZ-00-SK-EE-2

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Appendix C

Calculation Reports

DATE: 3 October 2025
DESIGNER: Aisling McAVoy
PROJECT No: 277975
PROJECT NAME: Cleeves - Zone 1 Salesians



Target Class: P3
Average 7.5 lux minimum
Point illumination 1.5 lux minimum

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	1 - Salesian Roadway	556767.00	657164.00	97.00	104.00	1.49	1.49
2	2 - Salesian Townhouses- U...	556762.00	657204.00	92.00	32.00	1.48	1.45
3	3 - Salesians Car Park Wal...	556751.00	657235.00	37.00	66.00	1.48	1.43
4	4 - Salesians Courtyard Pe...	556788.00	657231.00	42.23	33.75	1.46	1.47
5	5 - Salesians steps	556808.05	657257.37	21.29	18.17	1.42	1.40
6	6 - Salesians Amenity	556782.00	657271.50	62.00	43.55	1.48	1.45
7	7 - Salesians Rear Pathway...	556843.00	657220.00	13.00	70.76	1.44	1.47

Luminaires

Luminaire A Data

Supplier	
Type	HESTIA GEN2 MINI 5304 [Flat glass], [Lum. s hape-related, Stee
Lamp(s)	10 LH351C@500mA WW 727 230V 01-37-041
LampFlux(klm)/Colour	2.26 WW 2700K/70
File Name	HESTIA GEN2 MINI 5304 10 LH351C 500mA WW 727 17.1W 506232 [Flat glass], [Lum. s...
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	218.6, 28.5, 0.0
No. in Project	15

Luminaire B Data

Supplier	
Type	114-0183
Lamp(s)	3 LED, Warm White - 120° angle of beam
Lamp Flux (klm)	0.50
File Name	114-0183.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	451.5, 218.9, 78.7
No. in Project	40

Luminaire D Data

Supplier	
Type	Garda 300 - 3LED -3k- 4W- Asymmetric-
Lamp(s)	3x 3K LED 4W
Lamp Flux (klm)	0.10
File Name	Garda 300- 3LED - 3k - 4W- asymmetrical.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	357.4, 190.7, 50.5
No. in Project	5

Luminaire G Data

Supplier	
Type	24063K3
Lamp(s)	LED 5,1W
LampFlux(klm)/Colour	0.25 ww/1B
File Name	BE_24063K3.LDT
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	715.5, 2236.2, 586.0
No. in Project	11

Luminaires

Luminaire H Data

Supplier	
Type	ALURA LED 5304 Deep shaped striated PC Symmetrical 20 LH351C@
Lamp(s)	20 LH351C@350mA WW 727 230V 01-37-043
LampFlux(klm)/Colour	3.38 WW 2700K/70
File Name	22.5W 54950S Deep shaped striated PC SY 230V EF .ldt
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	244.0, 95.6, 12.6
No. in Project	9

Luminaire I Data

Supplier	Thorn_Isaro_ldt
Type	IS XS 12L85-730 NR CL1 WS0.3 M60 GY-S
Lamp(s)	IS12L85-730NR 32C6W
LampFlux(klm)/Colour	4.23 3000/70
File Name	96636133_(STD).LDT
Maintenance Factor	0.84
Imax70,80,90(cd/klm)	558.3, 85.9, 0.0
No. in Project	1

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	556770.45	657295.91	4.00	345.00	0.00	0.00	1.00			
2	A	556769.42	657286.09	4.00	343.00	0.00	0.00	1.00			
3	A	556787.99	657289.08	4.00	164.00	0.00	0.00	1.00			
4	H	556853.96	657211.66	4.00	320.00	0.00	0.00	0.00			
5	B	556784.38	657266.30	1.00	74.00	0.00	0.00	0.00			
6	A	556768.80	657276.20	4.00	351.00	0.00	0.00	1.00			
7	A	556765.10	657268.20	4.00	332.00	0.00	0.00	1.00			
8	A	556770.59	657242.64	4.00	174.00	0.00	0.00	1.00			
9	A	556760.14	657255.36	4.00	348.00	0.00	0.00	1.00			
10	A	556775.89	657258.75	4.00	164.00	0.00	0.00	1.00			
11	B	556778.88	657251.45	1.00	176.00	0.00	0.00	0.00			
12	B	556775.58	657237.70	1.00	211.00	0.00	0.00	0.00			
13	A	556777.03	657224.57	4.00	77.00	0.00	0.00	1.00			
14	A	556761.16	657235.02	4.00	351.00	0.00	0.00	1.00			
15	A	556757.32	657214.38	4.00	353.00	0.00	0.00	1.00			
19	H	556824.60	657235.40	4.00	175.00	0.00	0.00	0.00			
20	B	556809.91	657256.73	0.30	87.00	0.00	0.00	0.00			
21	B	556823.98	657251.15	0.30	103.00	0.00	0.00	0.00			
22	B	556792.78	657295.89	1.00	73.00	0.00	0.00	0.00			
23	H	556850.08	657218.44	4.00	268.00	0.00	0.00	0.00			
24	H	556828.53	657222.70	4.00	259.00	0.00	0.00	0.00			
25	H	556834.61	657215.30	4.00	77.00	0.00	0.00	0.00			
26	G	556821.65	657270.87	0.50	267.00	0.00	0.00	0.00			
27	B	556824.02	657264.14	1.00	252.00	0.00	0.00	0.00			
28	G	556815.86	657267.03	0.50	77.00	0.00	0.00	0.00			
29	B	556825.80	657289.05	1.00	94.00	0.00	0.00	0.00			
30	B	556815.18	657284.86	1.00	353.00	0.00	0.00	0.00			
31	B	556810.63	657266.11	1.00	295.00	0.00	0.00	0.00			
32	B	556824.72	657276.42	1.00	175.00	0.00	0.00	0.00			
33	B	556807.56	657292.60	1.00	79.00	0.00	0.00	0.00			
34	G	556816.06	657296.13	0.30	348.00	0.00	0.00	0.00			
35	B	556840.21	657288.07	1.00	87.00	0.00	0.00	0.00			
36	B	556850.07	657275.79	1.00	7.00	0.00	0.00	0.00			
37	B	556850.38	657264.95	1.00	2.00	0.00	0.00	0.00			
38	B	556850.92	657245.16	1.00	7.00	0.00	0.00	0.00			
39	B	556851.85	657230.98	1.00	4.00	0.00	0.00	0.00			

Layout Continued

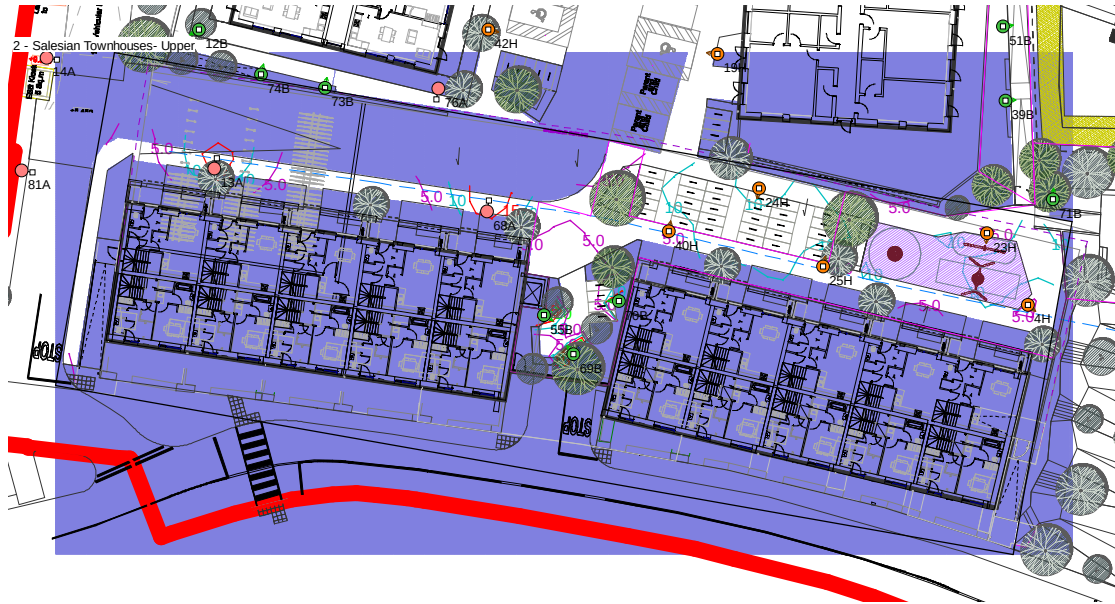
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
40	H	556820.02	657218.61	4.00	79.00	0.00	0.00	0.00			
41	B	556850.09	657281.94	1.00	3.00	0.00	0.00	0.00			
42	H	556802.93	657237.67	4.00	347.00	0.00	0.00	0.00			
43	G	556821.30	657266.08	0.50	267.00	0.00	0.00	0.00			
44	G	556815.11	657264.03	0.50	79.00	0.00	0.00	0.00			
45	G	556821.12	657263.12	0.50	264.00	0.00	0.00	0.00			
46	D	556812.64	657263.05	1.00	76.00	0.00	0.00	0.00			
47	D	556813.46	657266.26	1.00	77.00	0.00	0.00	0.00			
48	D	556814.09	657268.86	1.00	78.00	0.00	0.00	0.00			
49	D	556814.62	657271.15	1.00	78.00	0.00	0.00	0.00			
50	D	556815.15	657273.33	1.00	77.00	0.00	0.00	0.00			
51	B	556851.61	657237.98	1.00	8.00	0.00	0.00	0.00			
52	B	556847.80	657287.20	1.00	90.00	0.00	0.00	0.00			
53	B	556816.37	657290.22	1.00	72.00	0.00	0.00	0.00			
54	B	556833.23	657288.62	1.00	86.00	0.00	0.00	0.00			
55	B	556808.20	657210.70	0.30	326.00	0.00	0.00	0.00			
56	B	556850.78	657252.04	1.00	67.00	0.00	0.00	0.00			
57	G	556821.45	657294.69	0.30	348.00	0.00	0.00	0.00			
58	G	556826.02	657293.66	0.30	348.00	0.00	0.00	0.00			
59	B	556825.16	657283.22	1.00	175.00	0.00	0.00	0.00			
60	B	556814.05	657279.40	1.00	349.00	0.00	0.00	0.00			
61	B	556799.17	657294.61	1.00	74.00	0.00	0.00	0.00			
62	B	556846.57	657259.70	1.00	270.00	0.00	0.00	0.00			
63	G	556816.89	657271.54	0.50	77.00	0.00	0.00	0.00			
64	G	556815.18	657260.56	0.30	354.00	0.00	0.00	0.00			
65	G	556819.62	657259.89	0.30	354.00	0.00	0.00	0.00			
66	A	556783.26	657269.92	4.00	161.00	0.00	0.00	1.00			
67	I	556752.45	657206.57	8.00	265.00	0.00	0.00	1.00			
68	A	556802.82	657220.51	4.00	79.00	0.00	0.00	1.00			
69	B	556811.01	657207.00	0.30	130.00	0.00	0.00	0.00			
70	B	556815.28	657212.02	0.30	180.00	0.00	0.00	0.00			
71	B	556856.37	657221.65	0.30	87.00	0.00	0.00	0.00			
72	B	556787.68	657271.59	1.00	267.00	0.00	0.00	0.00			
73	B	556787.49	657232.20	1.00	78.00	0.00	0.00	0.00			
74	B	556781.42	657233.43	1.00	76.00	0.00	0.00	0.00			
75	B	556777.57	657246.99	1.00	173.00	0.00	0.00	0.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
76	A	556798.21	657232.11	4.00	260.00	0.00	0.00	1.00			
77	B	556850.61	657259.49	1.00	340.00	0.00	0.00	0.00			
78	B	556824.21	657269.81	0.30	179.00	0.00	0.00	0.00			
79	B	556812.49	657273.20	1.00	349.00	0.00	0.00	0.00			
80	B	556850.17	657269.89	1.00	4.00	0.00	0.00	0.00			
81	B	556818.90	657275.21	1.00	262.00	0.00	0.00	0.00			
81	A	556758.81	657224.35	4.00	351.00	0.00	0.00	1.00			
80	H	556806.09	657251.63	4.00	347.00	0.00	0.00	0.00			
81	H	556823.31	657246.85	4.00	347.00	0.00	0.00	0.00			

Horizontal Illuminance (lux)

2 - Salesian Townhouses- Upper



Results

Eav	8.14
Emin	1.58
Emax	18.18
Emin/Emax	0.09
Emin/Eav	0.19

Horizontal Illuminance (lux)

4 - Salesians Courtyard Pedestrian

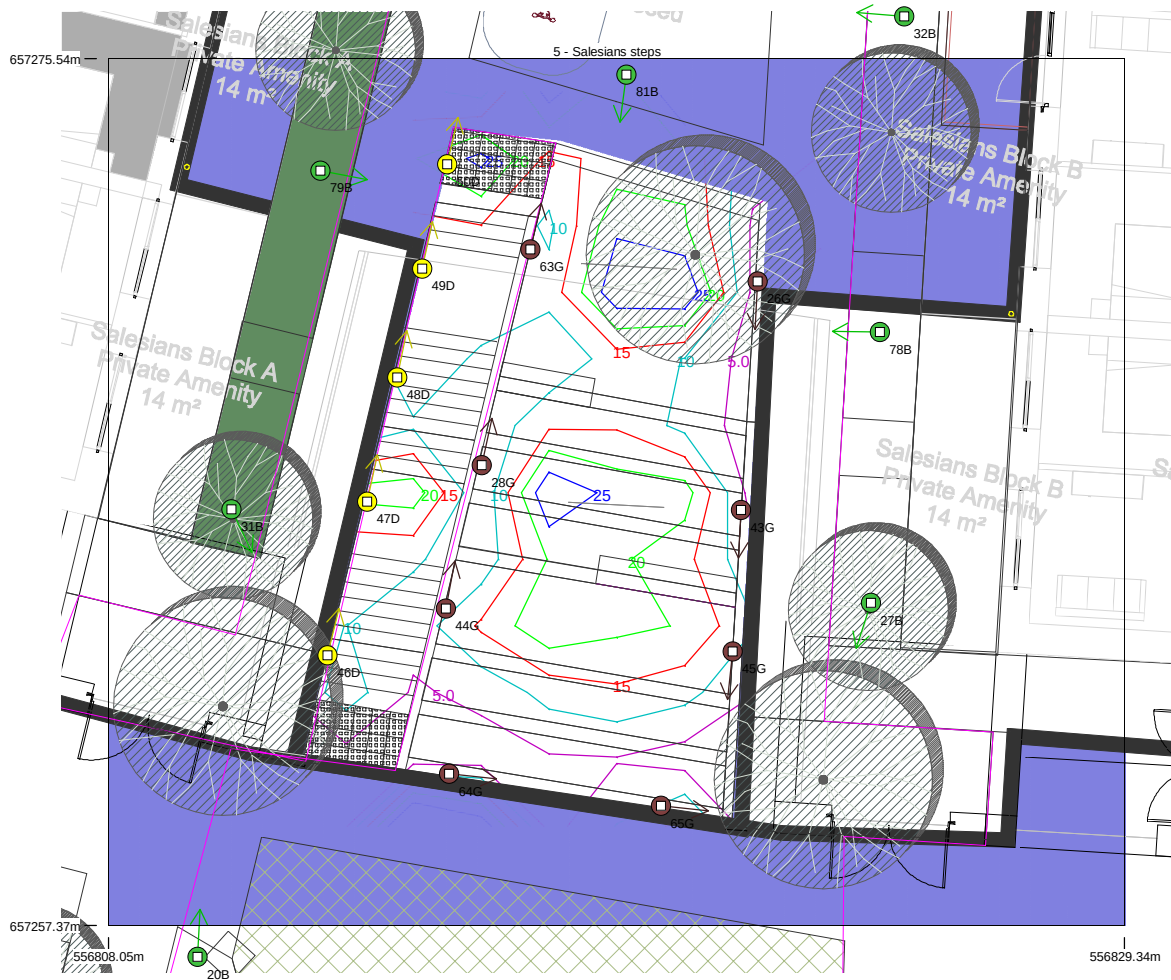


Results

Eav	7.64
Emin	1.68
Emax	36.14
Emin/Emax	0.05
Emin/Eav	0.22

Horizontal Illuminance (lux)

5 - Salesians steps



Results

Eav	12.93
Emin	2.56
Emax	30.12
Emin/Emax	0.08
Emin/Eav	0.20

Horizontal Illuminance (lux)

6 - Salesians Amenity

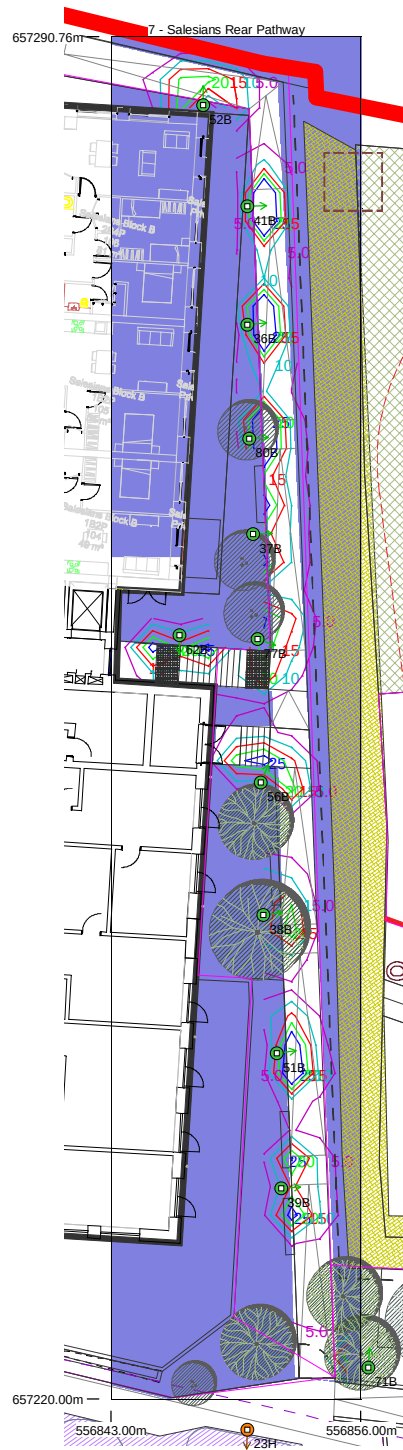


Results

Eav	12.11
Emin	2.39
Emax	38.94
Emin/Emax	0.06
Emin/Eav	0.20

Horizontal Illuminance (lux)

7 - Salesians Rear Pathway



Results

Eav	12.51
Emin	2.44
E _{max}	39.20
Emin/E _{max}	0.06
Emin/Eav	0.20

DATE: 3 October 2025
DESIGNER: Aisling McAVoy
PROJECT No: 277975
PROJECT NAME: Cleeves - Zone 2 Quarry



Target Class: P3
Average 7.5 lux minimum
Point illumination 1.5 lux minimum

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	1 - Quarry Roadway	556860.00	657221.00	101.94	68.07	1.50	1.48
2	2 - Quarry Walkway	556869.24	657224.12	81.00	39.00	1.50	1.50
3	3- Quarry Rear Walkway	556857.00	657231.79	15.00	44.84	1.50	1.49
4	4 - Quarry Steps	556925.93	657203.98	21.86	20.47	1.46	1.46
5	5 - Reservoir pathway	556868.05	657195.43	19.36	34.95	1.49	1.46

Luminares

Luminaire A Data

Supplier	
Type	HESTIA GEN2 MINI 5308 [Flat glass], [Lum. s hape-related, Stee
Lamp(s)	10 LH351C@500mA WW 727 230V 01-37-041
LampFlux(klm)/Colour	2.26 WW 2700K/70
File Name	HESTIA GEN2 MINI 5308 10 LH351C 500mA WW 727 17.1W 506312 [Flat glass], [Lum. s...
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	275.8, 26.1, 0.0
No. in Project	8

Luminaire B Data

Supplier	
Type	114-0183
Lamp(s)	3 LED, Warm White - 120° angle of beam
Lamp Flux (klm)	0.50
File Name	114-0183.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	451.5, 218.9, 78.7
No. in Project	7

Luminaire D Data

Supplier	
Type	Garda 300 - 3LED -3k- 4W- Asymmetric-
Lamp(s)	3x 3K LED 4W
Lamp Flux (klm)	0.10
File Name	Garda 300- 3LED - 3k - 4W- asymmetrical.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	357.4, 190.7, 50.5
No. in Project	24

Luminaire G Data

Supplier	
Type	24063K3
Lamp(s)	LED 5,1W
LampFlux(klm)/Colour	0.30 ww/1B
File Name	BE_24063K3.LDT
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	715.5, 2236.2, 586.0
No. in Project	11

Luminaire H Data

Supplier	
Type	ALURA LED 5304 Deep shaped striated PC S ymmetrical 20 LH351C@
Lamp(s)	20 LH351C@350mA WW 727 230V 01-37-043
LampFlux(klm)/Colour	3.38 WW 2700K/70
File Name	22.5W 54950S Deep shaped striated PC SY 230V EF .ldt
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	244.0, 95.6, 12.6
No. in Project	12

Layout

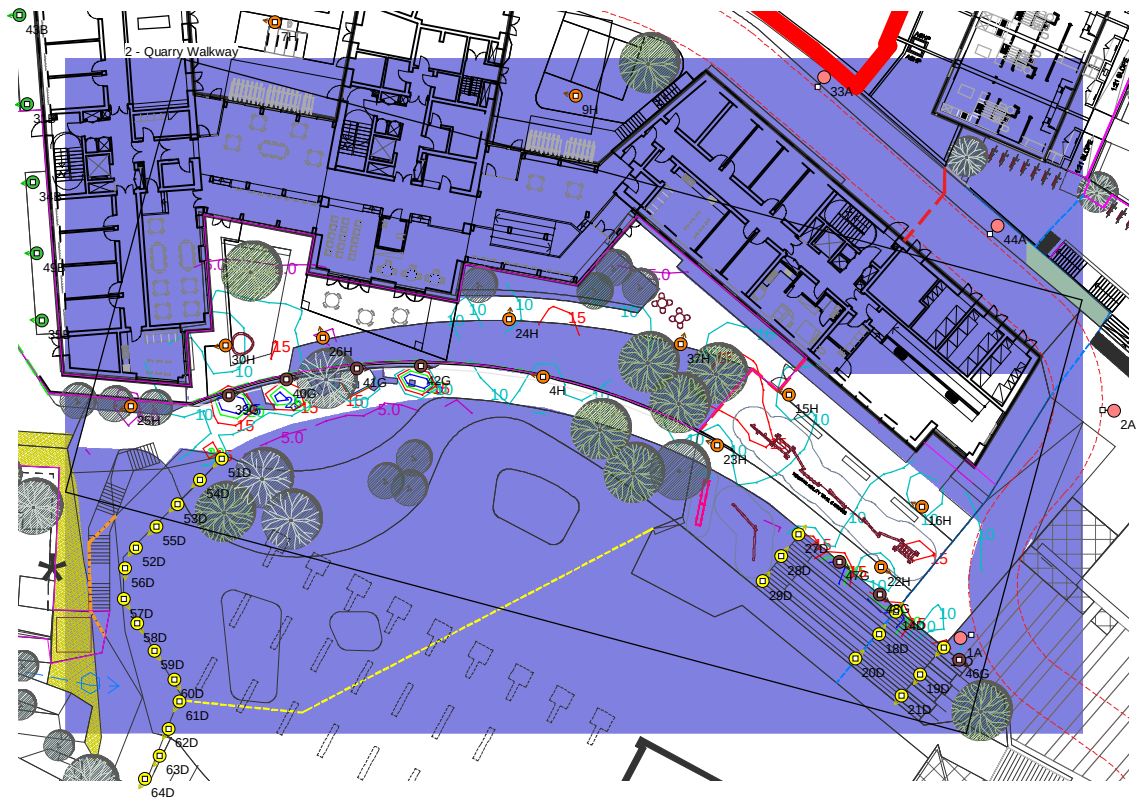
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	556947.00	657211.46	6.00	15.00	0.00	0.00	1.00			
2	A	556960.36	657231.17	4.00	174.00	0.00	0.00	1.00			
3	G	556858.66	657240.22	0.30	342.00	0.00	0.00	0.00			
4	H	556910.73	657234.14	4.00	169.00	0.00	0.00	0.00			
5	A	556903.13	657275.67	3.50	259.00	5.00	0.00	1.00			
6	A	556881.93	657279.17	3.50	264.00	5.00	0.00	1.00			
7	H	556887.43	657264.97	3.50	170.00	0.00	0.00	0.00			
9	H	556913.55	657258.59	3.50	170.00	0.00	0.00	0.00			
11	G	556861.70	657240.24	0.50	342.00	0.00	0.00	0.00			
12	G	556858.93	657241.09	0.50	342.00	0.00	0.00	0.00			
13	D	556945.54	657210.61	1.00	226.00	0.00	0.00	0.00			
14	D	556941.37	657213.72	1.00	53.00	0.00	0.00	0.00			
15	H	556932.07	657232.59	4.00	158.00	0.00	0.00	0.00			
16	H	556943.65	657222.84	4.00	158.00	0.00	0.00	0.00			
17	G	556861.27	657239.34	0.50	342.00	0.00	0.00	0.00			
18	D	556939.95	657211.80	1.00	58.00	0.00	0.00	0.00			
19	D	556943.52	657208.29	1.00	236.00	0.00	0.00	0.00			
20	D	556937.89	657209.68	1.00	44.00	0.00	0.00	0.00			
21	D	556941.87	657206.45	1.00	232.00	0.00	0.00	0.00			
22	H	556940.13	657217.65	4.00	324.00	0.00	0.00	0.00			
23	H	556925.86	657228.20	4.00	158.00	0.00	0.00	0.00			
24	H	556907.81	657239.17	4.00	84.00	0.00	0.00	0.00			
25	H	556874.91	657231.59	4.00	197.00	0.00	0.00	0.00			
26	H	556891.60	657237.53	4.00	107.00	0.00	0.00	0.00			
27	D	556932.95	657220.49	1.00	48.00	0.00	0.00	0.00			
28	D	556931.42	657218.56	1.00	53.00	0.00	0.00	0.00			
29	D	556929.81	657216.40	1.00	51.00	0.00	0.00	0.00			
30	H	556883.17	657236.89	4.00	188.00	0.00	0.00	0.00			
31	B	556865.91	657257.87	1.00	185.00	0.00	0.00	0.00			
32	B	556864.75	657272.82	1.00	182.00	0.00	0.00	0.00			
33	A	556935.17	657260.20	3.50	236.00	5.00	0.00	1.00			
34	B	556866.42	657251.04	1.00	185.00	0.00	0.00	0.00			
35	B	556867.20	657239.04	1.00	178.00	0.00	0.00	0.00			
36	A	556867.92	657283.62	3.50	263.00	5.00	0.00	1.00			
37	H	556922.72	657236.98	4.00	71.00	0.00	0.00	0.00			
38	D	556862.69	657239.37	1.20	251.00	0.00	0.00	0.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
39	G	556883.41	657232.53	0.30	16.00	5.00	0.00	0.00			
40	G	556888.43	657233.93	0.30	7.00	5.00	0.00	0.00			
41	G	556894.53	657234.85	0.30	359.00	5.00	0.00	0.00			
42	G	556900.11	657235.10	0.30	349.00	5.00	0.00	0.00			
43	B	556865.26	657265.55	1.00	182.00	0.00	0.00	0.00			
44	A	556950.24	657247.29	3.50	228.00	5.00	0.00	1.00			
45	A	556920.95	657269.84	3.50	259.00	5.00	0.00	1.00			
46	G	556946.88	657209.55	0.30	324.00	6.00	0.00	0.00			
47	G	556936.52	657218.09	0.30	324.00	5.00	0.00	0.00			
48	G	556939.98	657215.23	0.30	324.00	5.00	0.00	0.00			
49	B	556866.76	657244.90	1.00	182.00	0.00	0.00	0.00			
50	B	556862.95	657250.90	1.00	29.00	0.00	0.00	0.00			
51	D	556882.79	657227.00	1.20	224.00	0.00	0.00	0.00			
52	D	556875.38	657219.28	1.20	224.00	0.00	0.00	0.00			
53	D	556878.95	657223.10	1.20	224.00	0.00	0.00	0.00			
54	D	556880.92	657225.21	1.20	224.00	0.00	0.00	0.00			
55	D	556877.14	657221.12	1.20	224.00	0.00	0.00	0.00			
56	D	556874.44	657217.51	1.20	270.00	0.00	0.00	0.00			
57	D	556874.30	657214.84	1.20	299.00	0.00	0.00	0.00			
58	D	556875.50	657212.74	1.20	299.00	0.00	0.00	0.00			
59	D	556876.98	657210.36	1.20	299.00	0.00	0.00	0.00			
60	D	556878.69	657207.82	1.20	299.00	0.00	0.00	0.00			
61	D	556879.14	657205.95	1.20	241.00	0.00	0.00	0.00			
62	D	556878.18	657203.55	1.20	241.00	0.00	0.00	0.00			
63	D	556877.41	657201.20	1.20	241.00	0.00	0.00	0.00			
64	D	556876.13	657199.23	1.20	241.00	0.00	0.00	0.00			

Horizontal Illuminance (lux)

2 - Quarry Walkway

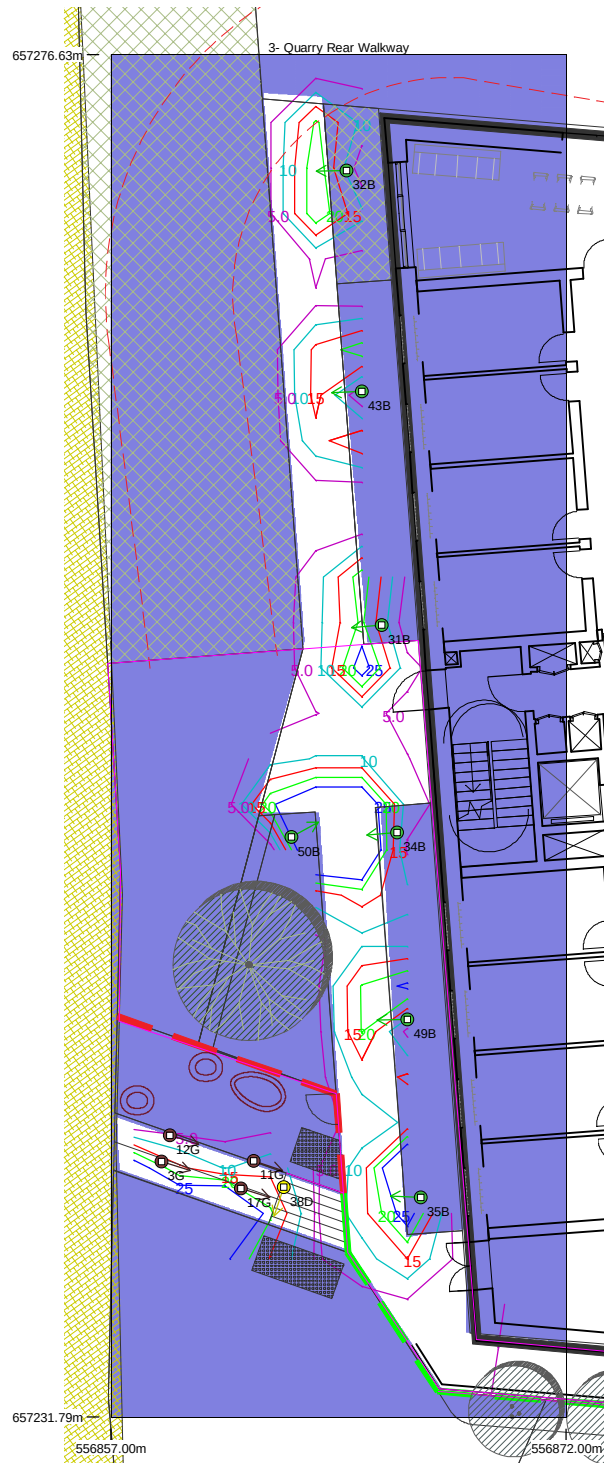


Results

Eav	9.87
Emin	2.20
E _{max}	34.08
Emin/E _{max}	0.06
Emin/Eav	0.22

Horizontal Illuminance (lux)

3- Quarry Rear Walkway

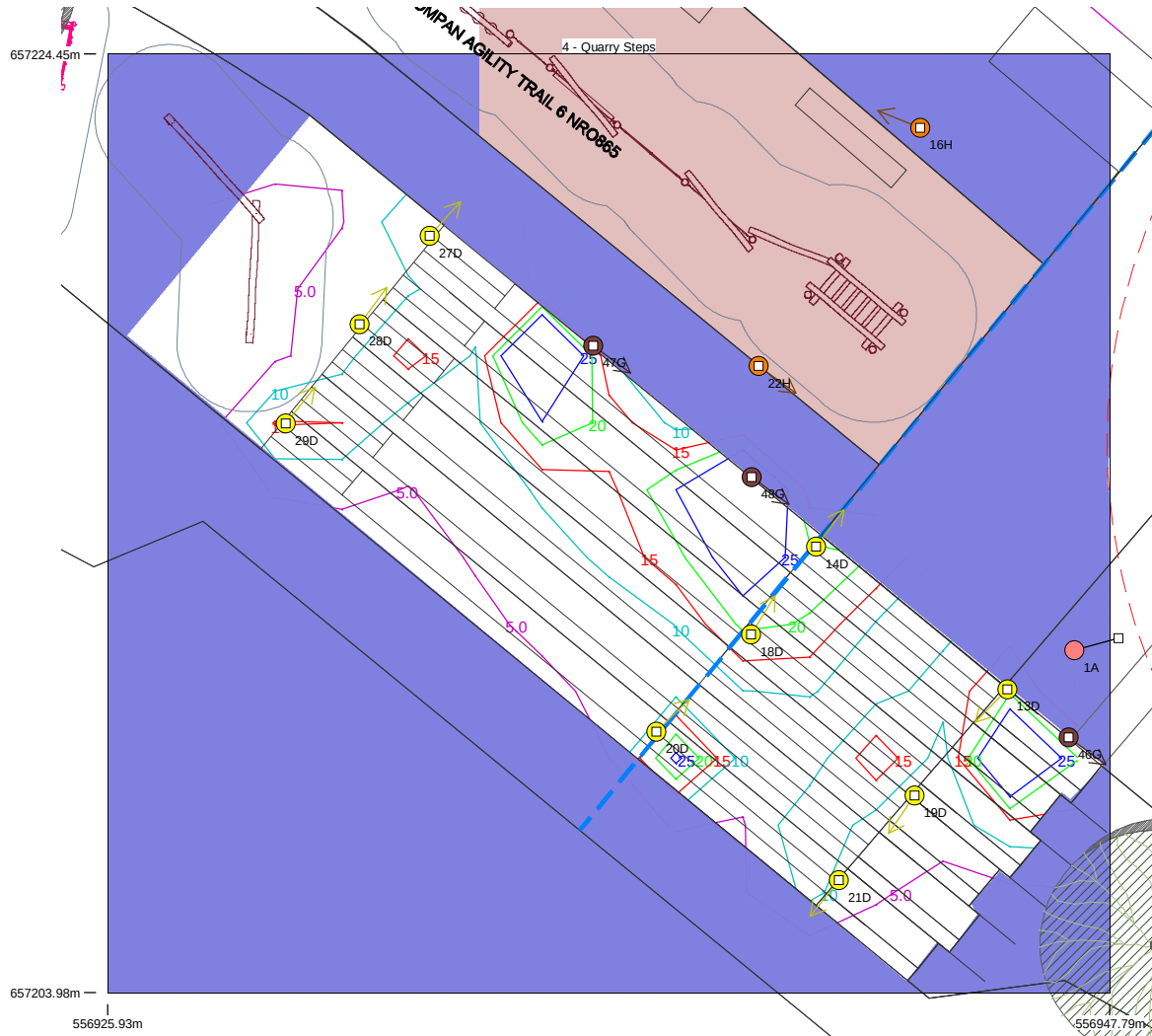


Results

Eav	12.62
Emin	3.12
Emax	39.91
Emin/Emax	0.08
Emin/Eav	0.25

Horizontal Illuminance (lux)

4 - Quarry Steps

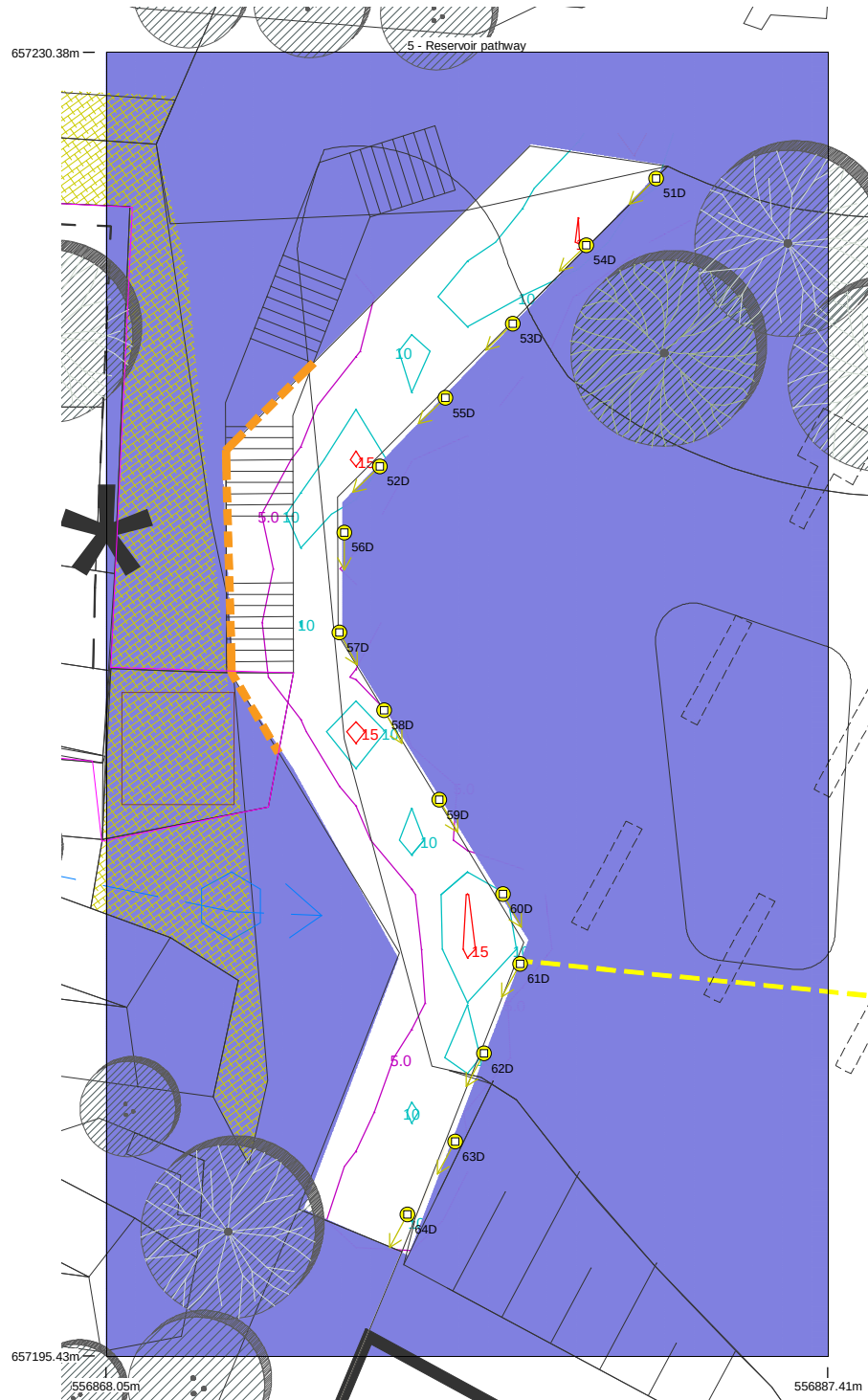


Results

Eav	12.60
Emin	2.68
Emax	51.94
Emin/Emax	0.05
Emin/Eav	0.21

Horizontal Illuminance (lux)

5 - Reservoir pathway



Results

Eav	8.28
Emin	1.65
Emax	17.30
Emin/Emax	0.10
Emin/Eav	0.20

DATE: 3 October 2025
DESIGNER: Aisling McAVoy
PROJECT No: 277975
PROJECT NAME: Cleeves - Zone 3 Stonetwon Terrace



Target Class: P3
Average 7.5 lux minimum
Point illumination 1.5 lux minimum

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	1 Stonetown Roadway	556946.00	657238.00	74.00	66.00	1.48	1.50
2	2 Stonetown Stairs	556947.00	657248.00	23.00	7.00	1.44	1.40
3	3 Stonetown Walkway	556942.00	657257.00	42.00	49.00	1.50	1.48

Luminaires

Luminaire A Data

Supplier	
Type	HESTIA GEN2 MINI 5304 [Lum. shape-related, Steel, White], [Sm
Lamp(s)	10 LH351C@500mA WW 727 230V 01-37-041
LampFlux(klm)/Colour	2.26 WW 2700K/70
File Name	HESTIA GEN2 MINI 5304 10 LH351C 500mA WW 727 17.1W 506242 [Lum. shape-related,...
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	251.8, 40.3, 0.0
No. in Project	9

Luminaire B Data

Supplier	
Type	114-0183
Lamp(s)	3 LED, Warm White - 120° angle of beam
Lamp Flux (klm)	0.50
File Name	114-0183.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	451.5, 218.9, 78.7
No. in Project	2

Luminaire D Data

Supplier	
Type	Garda 300 - 3LED - 3k- 4W- Asymmetric-
Lamp(s)	3x 3K LED 4W
Lamp Flux (klm)	0.10
File Name	Garda 300- 3LED - 3k - 4W- asymmetrical.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	357.4, 190.7, 50.5
No. in Project	4

Luminaire H Data

Supplier	
Type	ALURA LED 5304 Deep shaped striated PC Symmetrical 20 LH351C@
Lamp(s)	20 LH351C@350mA WW 727 230V 01-37-043
LampFlux(klm)/Colour	3.38 WW 2700K/70
File Name	22.5W 54950S Deep shaped striated PC SY 230V EF .ldt
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	244.0, 95.6, 12.6
No. in Project	8

Luminaire I Data

Supplier	Thorn_Isaro_ldt
Type	IS XS 12L85-730 NR CL1 WS0.3 M60 GY-S
Lamp(s)	IS12L85-730NR 32C6W
LampFlux(klm)/Colour	4.23 3000/70
File Name	96636133_(STD).LDT
Maintenance Factor	0.84
Imax70,80,90(cd/klm)	558.3, 85.9, 0.0
No. in Project	2

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
2	A	557008.13	657245.53	4.00	145.00	0.00	0.00	1.00			
3	A	557003.44	657258.45	4.00	332.00	0.00	0.00	1.00			
4	A	557013.96	657266.37	4.00	216.00	0.00	0.00	1.00			
5	H	556980.62	657271.90	4.00	73.00	0.00	0.00	0.00			
6	H	556973.59	657274.78	4.00	66.00	0.00	0.00	0.00			
7	H	556977.99	657264.22	4.00	330.00	0.00	0.00	0.00			
8	A	557001.74	657277.89	4.00	243.00	0.00	0.00	1.00			
9	A	556979.35	657287.57	4.00	245.00	0.00	0.00	1.00			
10	H	556948.36	657253.49	4.00	226.00	0.00	0.00	0.00			
11	H	556968.12	657250.55	4.00	328.00	0.00	0.00	0.00			
12	B	556967.37	657260.06	1.00	67.00	0.00	0.00	0.00			
13	B	556970.37	657258.72	1.00	65.00	0.00	0.00	0.00			
14	H	556961.78	657260.47	4.00	324.00	0.00	0.00	0.00			
15	A	556989.97	657283.09	4.00	241.00	0.00	0.00	1.00			
16	A	557013.88	657266.42	4.00	32.00	0.00	0.00	1.00			
17	I	556990.87	657217.88	8.00	51.00	0.00	0.00	1.00			
18	H	556960.03	657245.66	4.00	228.00	0.00	0.00	0.00			
19	H	556967.32	657274.39	4.00	60.00	0.00	0.00	0.00			
20	D	556956.01	657245.73	1.20	324.00	0.00	0.00	0.00			
21	D	556959.48	657239.00	1.20	60.00	0.00	0.00	0.00			
22	D	556963.46	657235.64	1.20	245.00	0.00	0.00	0.00			
23	D	556960.54	657241.73	1.20	315.00	0.00	0.00	0.00			
24	A	556992.36	657240.10	4.00	326.00	0.00	0.00	1.00			
25	I	556990.87	657217.85	8.00	232.00	0.00	0.00	1.00			
26	A	556973.25	657231.73	4.00	50.00	0.00	0.00	1.00			

Horizontal Illuminance (lux)

1 Stonetown Roadway

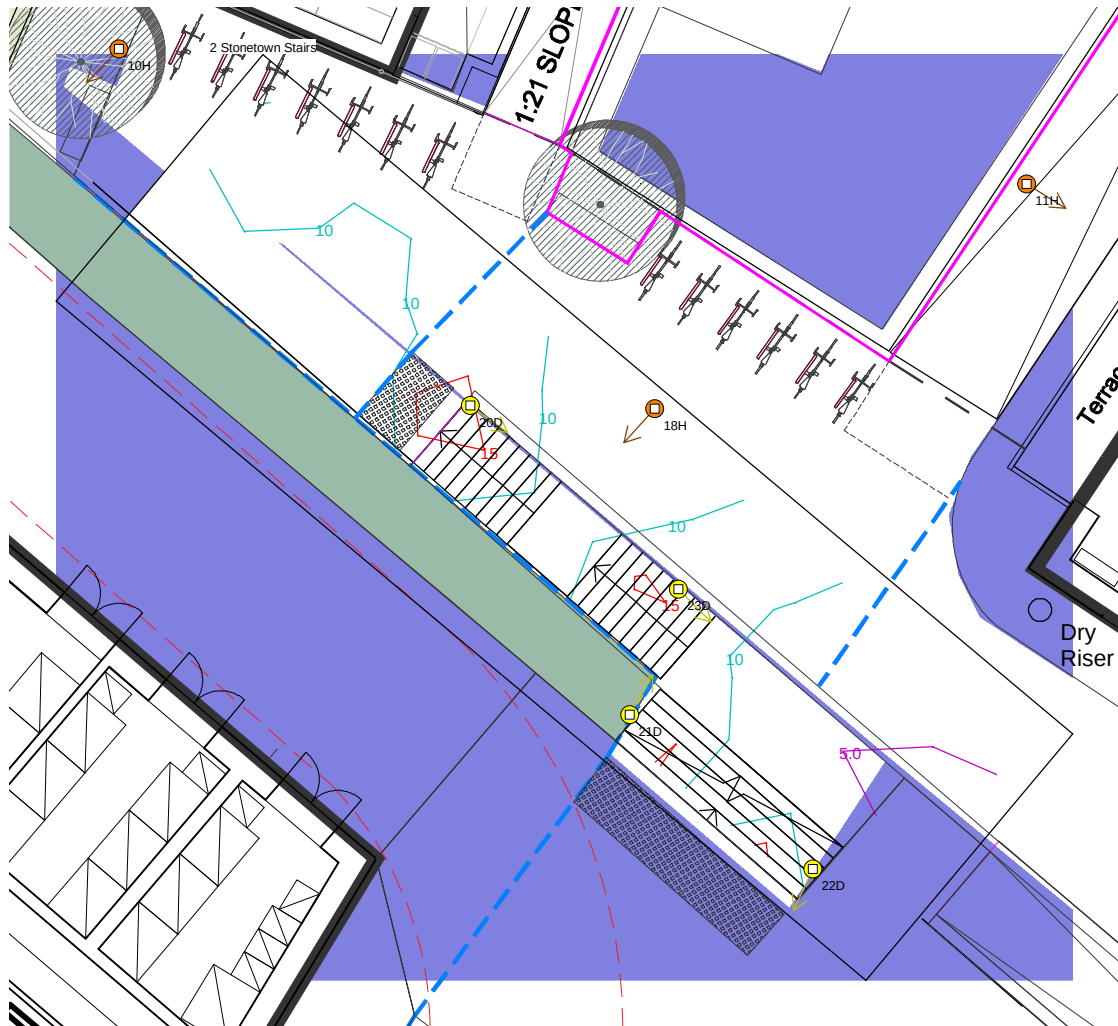


Results

Eav	9.77
Emin	2.45
Emax	29.14
Emin/Emax	0.08
Emin/Eav	0.25

Horizontal Illuminance (lux)

2 Stonetown Stairs

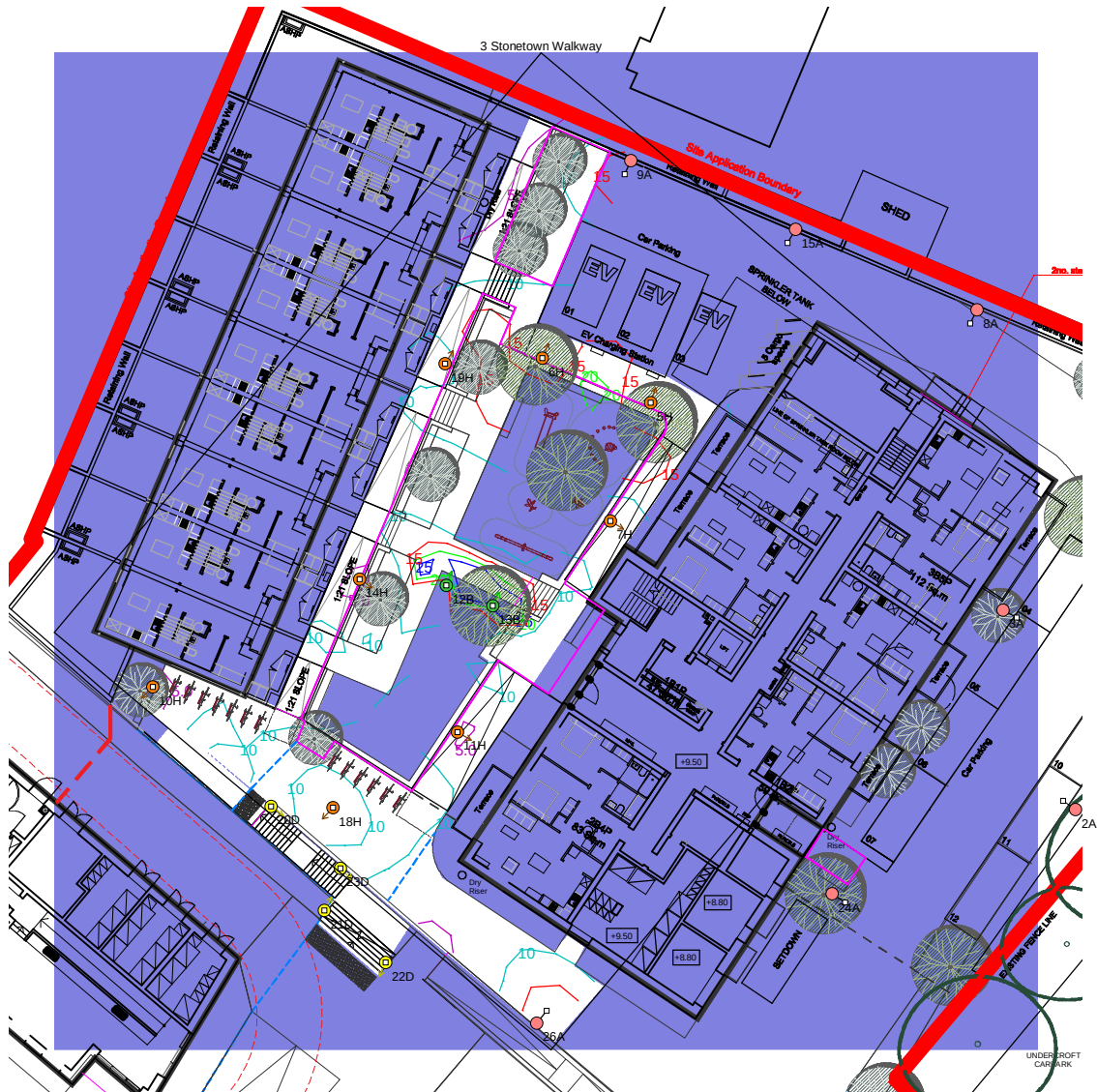


Results

Eav	9.62
Emin	4.85
Emax	19.69
Emin/Emax	0.25
Emin/Eav	0.50

Horizontal Illuminance (lux)

3 Stonetown Walkway



Results

Eav	10.51
Emin	3.37
Emax	44.27
Emin/Emax	0.08
Emin/Eav	0.32

DATE: 3 October 2025
DESIGNER: Aisling McAVoy
PROJECT No: 277975
PROJECT NAME: Cleeves - Zone 4 & 5 - OCS and Shipyard



Target Class: P3
Average 7.5 lux minimum
Point illumination 1.5 lux minimum

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	1 Campus Road	556908.00	657166.00	138.00	98.00	1.50	1.48
2	2 Campus Walkway	556909.00	657161.00	181.00	85.00	1.56	1.49
3	3 - Shipyard Amenity	556932.00	657080.00	106.76	56.00	1.48	1.47
4	4 - Shipyard Car Park	556863.44	657098.00	120.01	70.00	1.50	1.49
5	5 - Canopy	557039.00	657108.00	19.47	24.00	1.50	1.50
6	6 - Quarry Stairs	556847.95	657178.30	29.00	51.00	1.45	1.50
7	7 - Viewpoint	556854.06	657211.18	14.42	14.07	1.44	1.41
8	8 - Riverside Steps	557042.79	657081.00	34.15	15.00	1.48	1.50
9	9 - Shipyard Canopy	556883.00	657131.00	33.00	28.29	1.74	1.49

Luminaires

Luminaire A Data

Supplier	
Type	HESTIA GEN2 MINI 5304 [Flat glass], [Lum. s hape-related, Stee
Lamp(s)	10 LH351C@500mA WW 727 230V 01-37-041
LampFlux(klm)/Colour	2.26 WW 2700K/70
File Name	HESTIA GEN2 MINI 5304 10 LH351C 500mA WW 727 17.1W 506232 [Flat glass], [Lum. s...
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	218.6, 28.5, 0.0
No. in Project	21

Luminaire B Data

Supplier	
Type	114-0183
Lamp(s)	3 LED, Warm White - 120° angle of beam
Lamp Flux (klm)	0.50
File Name	114-0183.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	451.5, 218.9, 78.7
No. in Project	14

Luminaire C Data

Supplier	
Type	Spectre WX 3000K
Lamp(s)	LED
LampFlux(klm)/Colour	1.01 3000/80
File Name	SPXAH13KG.Idt
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	206.0, 143.0, 81.0
No. in Project	15

Luminaire D Data

Supplier	
Type	Garda 300 - 3LED -3k- 4W- Asymmetric-
Lamp(s)	3x 3K LED 4W
Lamp Flux (klm)	0.10
File Name	Garda 300- 3LED - 3k - 4W- asymmetrical.ies
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	357.4, 190.7, 50.5
No. in Project	56

Luminaires

Luminaire G Data

Supplier	
Type	24063K3
Lamp(s)	LED 5,1W
LampFlux(klm)/Colour	0.25 ww/1B
File Name	BE_24063K3.LDT
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	715.5, 2236.2, 586.0
No. in Project	8

Luminaire H Data

Supplier	
Type	ALURA LED 5304 Deep shaped striated PC Symmetrical 20 LH851C@
Lamp(s)	20 LH851C@350mA WW 727 230V 01-37-043
LampFlux(klm)/Colour	3.38 WW 2700K/70
File Name	22.5W 54950S Deep shaped striated PC SY 230V EF .ldt
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	244.0, 95.6, 12.6
No. in Project	14



Luminaire I Data

Supplier	Thorn_Isaro_ldt
Type	IS XS 12L85-730 NR CL1 WS0.3 M60 GY-S
Lamp(s)	IS12L85-730NR 32C6W
LampFlux(klm)/Colour	4.23 3000/70
File Name	96636133_(STD).LDT
Maintenance Factor	0.84
Imax70,80,90(cd/klm)	558.3, 85.9, 0.0
No. in Project	5

Luminaire J Data

Supplier	Urbis Schreder
Type	TECEO GEN2 1 5393 20 LEDs@350mA WW 730 230V 00-36-646
Lamp(s)	20 LEDs@350mA WW 730 230V 00-36-646 [CJOIRB.X8STDA], valid fro
Lamp Flux (klm)	2.20
File Name	TECEO GEN2 1 5393 20 LEDs 350mA WW 730 22.4W 7x7 III-Short 505302 Flat glass No...
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	514.3, 90.2, 0.0
No. in Project	29

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	556960.63	657172.49	6.00	171.00	0.00	0.00	1.00			
2	I	556896.34	657156.70	8.00	60.00	0.00	0.00	1.00			
3	A	556952.42	657162.46	6.00	357.00	0.00	0.00	1.00			
4	I	556940.60	657140.55	8.00	239.00	0.00	0.00	1.00			
5	A	556962.73	657205.71	6.00	236.00	0.00	0.00	1.00			
6	A	556959.40	657187.62	6.00	331.00	0.00	0.00	1.00			
8	D	556866.42	657211.66	1.20	358.00	0.00	0.00	0.00			
9	D	556869.55	657209.36	1.20	183.00	0.00	0.00	0.00			
10	J	556972.34	657140.35	4.20	12.00	0.00	0.00	1.50			
11	J	557005.18	657161.65	6.20	96.00	1.00	0.00	1.50			
12	J	556970.77	657158.60	4.20	312.00	0.00	0.00	1.50			
13	J	557005.18	657161.74	4.20	244.00	0.00	0.00	1.50			
14	J	557040.80	657133.37	6.20	180.00	0.00	0.00	1.50			
15	J	557040.72	657133.37	4.20	285.00	0.00	0.00	1.50			
16	J	557005.18	657161.65	6.20	322.00	0.00	0.00	1.50			
17	A	556932.96	657128.41	6.00	339.00	0.00	0.00	1.00			
18	A	556927.66	657118.74	6.00	339.00	0.00	0.00	1.00			
19	A	556923.44	657111.22	6.00	339.00	0.00	0.00	1.00			
20	A	556948.80	657120.03	6.00	150.00	0.00	0.00	1.00			
21	D	556858.87	657193.26	1.20	344.00	0.00	0.00	0.00			
24	D	556869.68	657201.45	1.20	342.00	0.00	0.00	0.00			
25	C	556913.93	657129.04	3.00	63.00	0.00	0.00	0.00			
26	D	556858.00	657211.21	1.20	76.00	0.00	0.00	0.00			
27	D	556857.52	657208.69	1.20	85.00	0.00	0.00	0.00			
28	D	556856.97	657204.89	1.20	88.00	0.00	0.00	0.00			
29	D	556856.52	657201.90	1.20	72.00	0.00	0.00	0.00			
30	D	556855.86	657198.04	1.20	81.00	0.00	0.00	0.00			
31	D	556854.63	657194.76	1.20	59.00	0.00	0.00	0.00			
32	D	556853.46	657191.97	1.20	42.00	0.00	0.00	0.00			
33	D	556866.57	657183.86	1.20	169.00	0.00	0.00	0.00			
34	D	556866.42	657208.38	1.20	330.00	0.00	0.00	0.00			
35	D	556866.91	657205.29	1.20	349.00	0.00	0.00	0.00			
36	D	556860.64	657206.07	1.20	351.00	0.00	0.00	0.00			
37	D	556869.31	657207.22	1.20	341.00	0.00	0.00	0.00			
38	D	556861.16	657212.20	1.20	353.00	0.00	0.00	0.00			
39	D	556866.69	657201.77	1.20	18.00	0.00	0.00	0.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
40	D	556859.92	657200.26	1.20	341.00	0.00	0.00	0.00			
41	D	556866.09	657198.13	1.20	344.00	0.00	0.00	0.00			
42	D	556867.16	657193.91	1.20	328.00	0.00	0.00	0.00			
43	D	556861.06	657189.55	1.20	327.00	0.00	0.00	0.00			
44	D	556858.11	657190.93	1.20	333.00	0.00	0.00	0.00			
45	D	556864.59	657192.16	1.20	345.00	0.00	0.00	0.00			
46	D	556859.90	657197.55	1.20	336.00	0.00	0.00	0.00			
47	D	556870.31	657197.03	1.20	261.00	0.00	0.00	0.00			
48	D	556863.54	657195.78	1.20	329.00	0.00	0.00	0.00			
49	D	556871.22	657215.04	1.00	86.00	0.00	0.00	0.00			
50	D	556864.27	657201.80	1.20	333.00	0.00	0.00	0.00			
51	D	556861.55	657203.22	1.20	332.00	0.00	0.00	0.00			
52	D	556871.33	657203.92	1.20	251.00	0.00	0.00	0.00			
53	D	556863.54	657209.32	1.20	337.00	0.00	0.00	0.00			
54	D	556869.41	657192.24	1.20	263.00	0.00	0.00	0.00			
56	B	556849.48	657243.69	1.00	7.00	0.00	0.00	0.00			
57	A	556939.93	657086.08	6.00	54.00	0.00	0.00	1.00			
59	H	556996.26	657090.11	4.00	288.00	0.00	0.00	0.00			
60	H	557026.25	657075.04	4.00	237.00	0.00	0.00	0.00			
61	C	557063.06	657109.97	4.00	316.00	0.00	0.00	0.00			
63	C	557055.38	657117.75	4.00	316.00	0.00	0.00	0.00			
66	C	557051.39	657113.06	4.00	316.00	0.00	0.00	0.00			
68	C	557047.57	657108.04	4.00	309.00	0.00	0.00	0.00			
69	C	557053.52	657101.86	4.00	310.00	0.00	0.00	0.00			
70	C	557057.74	657106.18	4.00	316.00	0.00	0.00	0.00			
71	H	556850.60	657218.52	4.00	257.00	0.00	0.00	0.00			
72	J	556972.41	657140.35	6.20	139.00	0.00	0.00	1.50			
73	D	556863.82	657188.09	1.20	331.00	0.00	0.00	0.00			
74	D	556862.49	657199.09	1.20	337.00	0.00	0.00	0.00			
75	D	556863.99	657205.63	1.20	351.00	0.00	0.00	0.00			
76	D	556866.48	657186.80	1.20	325.00	0.00	0.00	0.00			
77	D	556863.82	657211.81	1.20	0.00	0.00	0.00	0.00			
78	D	556861.65	657192.65	1.20	346.00	0.00	0.00	0.00			
79	D	556868.62	657189.18	1.20	245.00	0.00	0.00	0.00			
80	A	556943.34	657110.36	4.00	150.00	0.00	0.00	1.00			
81	A	556939.23	657102.95	6.00	150.00	0.00	0.00	1.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
82	A	556900.74	657118.30	6.00	11.00	0.00	0.00	1.00			
83	A	556909.46	657108.42	6.00	56.00	0.00	0.00	1.00			
84	A	556919.93	657096.74	6.00	56.00	0.00	0.00	1.00			
85	A	556928.74	657092.14	6.00	62.00	0.00	0.00	1.00			
87	B	556882.03	657101.39	1.00	156.00	0.00	0.00	0.00			
88	B	556879.21	657106.84	1.00	336.00	0.00	0.00	0.00			
89	A	556950.04	657092.90	6.00	157.00	0.00	0.00	1.00			
90	C	556910.35	657122.55	3.00	57.00	0.00	0.00	0.00			
91	C	556917.55	657135.60	3.00	59.00	0.00	0.00	0.00			
92	C	556900.15	657132.38	3.00	240.00	0.00	0.00	0.00			
94	C	556903.13	657137.83	3.00	246.00	0.00	0.00	0.00			
95	C	556906.06	657143.32	3.00	239.00	0.00	0.00	0.00			
97	C	556904.48	657129.87	3.00	59.00	0.00	0.00	0.00			
98	C	556907.42	657135.74	3.00	60.00	0.00	0.00	0.00			
99	C	556910.31	657141.12	3.00	59.00	0.00	0.00	0.00			
100	A	556955.93	657103.71	6.00	157.00	0.00	0.00	1.00			
101	A	556962.47	657115.33	6.00	157.00	0.00	0.00	1.00			
102	A	556915.01	657114.41	6.00	330.00	0.00	0.00	1.00			
103	H	556985.30	657096.10	4.00	243.00	0.00	0.00	0.00			
97	J	557077.07	657106.14	4.80	7.00	0.00	0.00	1.50			
105	G	557049.22	657091.37	0.50	348.00	5.00	0.00	0.00			
99	J	557063.51	657102.26	6.20	57.00	0.00	0.00	1.50			
101	J	557038.49	657111.44	4.20	313.00	0.00	0.00	1.50			
109	J	557024.67	657149.22	6.20	158.00	0.00	0.00	1.50			
110	J	557024.59	657149.23	4.20	15.00	0.00	0.00	1.50			
104	J	557063.53	657102.18	4.20	247.00	0.00	0.00	1.50			
112	J	557069.27	657115.04	4.20	196.00	0.00	0.00	1.50			
113	J	557069.30	657115.07	6.20	316.00	0.00	0.00	1.50			
114	J	556996.54	657148.16	4.20	122.00	0.00	0.00	1.50			
115	J	557001.95	657133.97	4.20	316.00	0.00	0.00	1.50			
116	J	556996.47	657148.03	6.20	273.00	0.00	0.00	1.50			
110	J	556970.64	657158.60	6.20	157.00	0.00	0.00	1.50			
118	J	556942.45	657153.44	4.20	36.00	0.00	0.00	1.50			
119	J	556984.01	657188.22	6.20	160.00	0.00	0.00	1.50			
113	J	557022.74	657122.40	4.20	355.00	0.00	0.00	1.50			
121	A	557074.13	657143.45	8.00	51.00	0.00	0.00	1.00			

Layout Continued

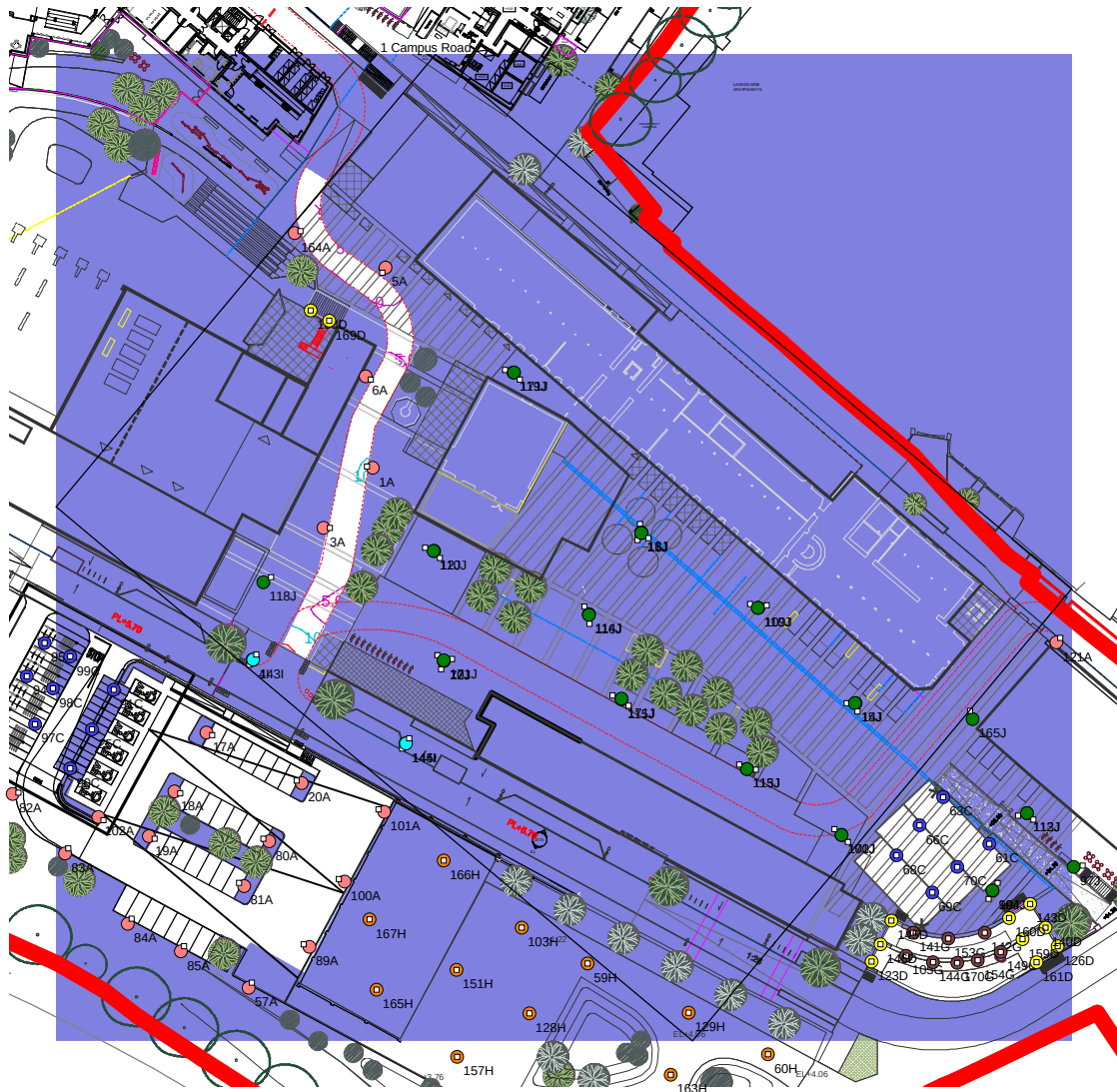
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
115	J	557022.74	657122.40	6.20	151.00	0.00	0.00	1.50			
123	D	557043.41	657090.43	1.20	69.00	0.00	0.00	0.00			
126	D	557074.34	657092.92	1.20	303.00	0.00	0.00	0.00			
127	H	557002.78	657064.77	4.00	264.00	0.00	0.00	0.00			
128	H	556986.60	657081.83	4.00	244.00	0.00	0.00	0.00			
129	H	557013.07	657081.94	4.00	237.00	0.00	0.00	0.00			
130	H	556986.37	657066.27	4.00	228.00	0.00	0.00	0.00			
131	D	556871.28	657218.71	1.00	85.00	0.00	0.00	0.00			
132	D	556872.64	657224.89	1.00	60.00	0.00	0.00	0.00			
133	D	556874.84	657228.15	1.00	37.00	0.00	0.00	0.00			
134	B	556859.61	657221.48	1.00	330.00	0.00	0.00	0.00			
135	B	556866.62	657222.03	1.00	215.00	0.00	0.00	0.00			
136	B	556866.75	657214.67	1.00	172.00	0.00	0.00	0.00			
137	B	556859.73	657217.58	1.00	31.00	0.00	0.00	0.00			
138	D	556871.46	657221.71	1.00	62.00	0.00	0.00	0.00			
139	D	556872.66	657211.40	1.00	255.00	0.00	0.00	0.00			
140	D	557072.37	657096.01	1.20	307.00	0.00	0.00	0.00			
141	G	557050.36	657095.21	0.50	346.00	5.00	0.00	0.00			
142	G	557062.23	657095.26	0.50	26.00	5.00	0.00	0.00			
143	D	557069.84	657100.03	1.20	303.00	0.00	0.00	0.00			
144	G	557053.70	657090.33	0.50	350.00	5.00	0.00	0.00			
145	D	557046.75	657097.19	1.20	66.00	0.00	0.00	0.00			
146	D	557044.97	657093.31	1.20	67.00	0.00	0.00	0.00			
149	G	557064.90	657091.98	0.30	28.00	5.00	0.00	0.00			
143	I	556940.73	657140.59	8.00	60.00	0.00	0.00	1.00			
144	I	556966.05	657126.64	8.00	238.00	0.00	0.00	1.00			
145	I	556966.11	657126.64	8.00	60.00	0.00	0.00	1.00			
153	G	557056.24	657094.25	0.50	3.00	5.00	0.00	0.00			
154	G	557061.13	657090.63	0.50	16.00	5.00	0.00	0.00			
157	H	556974.66	657074.63	4.00	242.00	0.00	0.00	0.00			
151	H	556974.51	657089.04	4.00	242.00	0.00	0.00	0.00			
159	D	557068.56	657094.11	1.20	121.00	0.00	0.00	0.00			
160	D	557066.29	657097.68	1.20	126.00	0.00	0.00	0.00			
161	D	557070.84	657090.30	1.20	133.00	0.00	0.00	0.00			
163	H	557010.10	657071.65	4.00	343.00	0.00	0.00	0.00			
164	B	556885.62	657107.96	1.00	156.00	0.00	0.00	0.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
165	B	556882.30	657112.60	1.00	336.00	0.00	0.00	0.00			
166	B	556885.85	657119.09	1.00	336.00	0.00	0.00	0.00			
167	B	556888.79	657114.03	1.00	155.00	0.00	0.00	0.00			
168	B	556889.02	657125.04	1.00	336.00	0.00	0.00	0.00			
169	B	556892.11	657119.90	1.00	155.00	0.00	0.00	0.00			
170	B	556895.51	657126.43	1.00	155.00	0.00	0.00	0.00			
165	H	556961.27	657085.76	4.00	242.00	0.00	0.00	0.00			
166	H	556972.33	657107.17	4.00	242.00	0.00	0.00	0.00			
167	H	556960.10	657097.41	4.00	242.00	0.00	0.00	0.00			
168	D	556950.32	657198.55	1.20	158.00	0.00	0.00	0.00			
169	D	556953.39	657196.87	1.20	161.00	0.00	0.00	0.00			
171	J	557001.87	657134.12	6.20	159.00	0.00	0.00	1.50			
171	J	556984.08	657188.22	6.20	309.00	2.00	0.00	1.50			
170	G	557057.67	657090.19	0.50	4.00	5.00	0.00	0.00			
170	J	557038.45	657111.45	6.20	139.00	0.00	0.00	1.50			
171	J	556972.41	657140.42	6.20	251.00	0.00	0.00	1.50			
164	A	556947.61	657211.46	6.00	15.00	0.00	0.00	1.00			
165	J	557060.26	657130.65	6.20	108.00	0.00	0.00	1.50			

Horizontal Illuminance (lux)

1 Campus Road



Results

Eav	7.07
Emin	3.32
Emax	15.60
Emin/Emax	0.21
Emin/Eav	0.47

Horizontal Illuminance (lux)

2 Campus Walkway

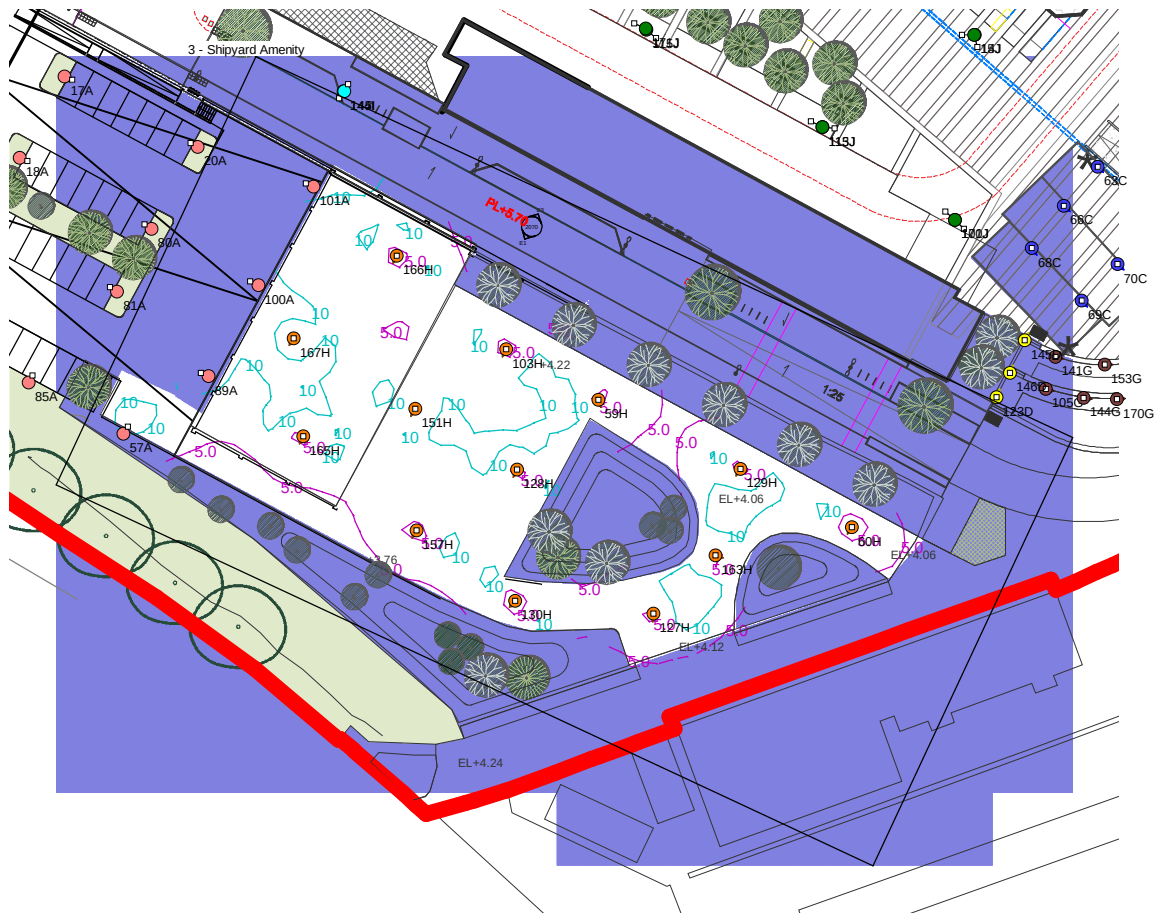


Results

Eav	8.33
Emin	1.76
Emax	28.79
Emin/Emax	0.06
Emin/Eav	0.21

Horizontal Illuminance (lux)

3 - Shipyard Amenity

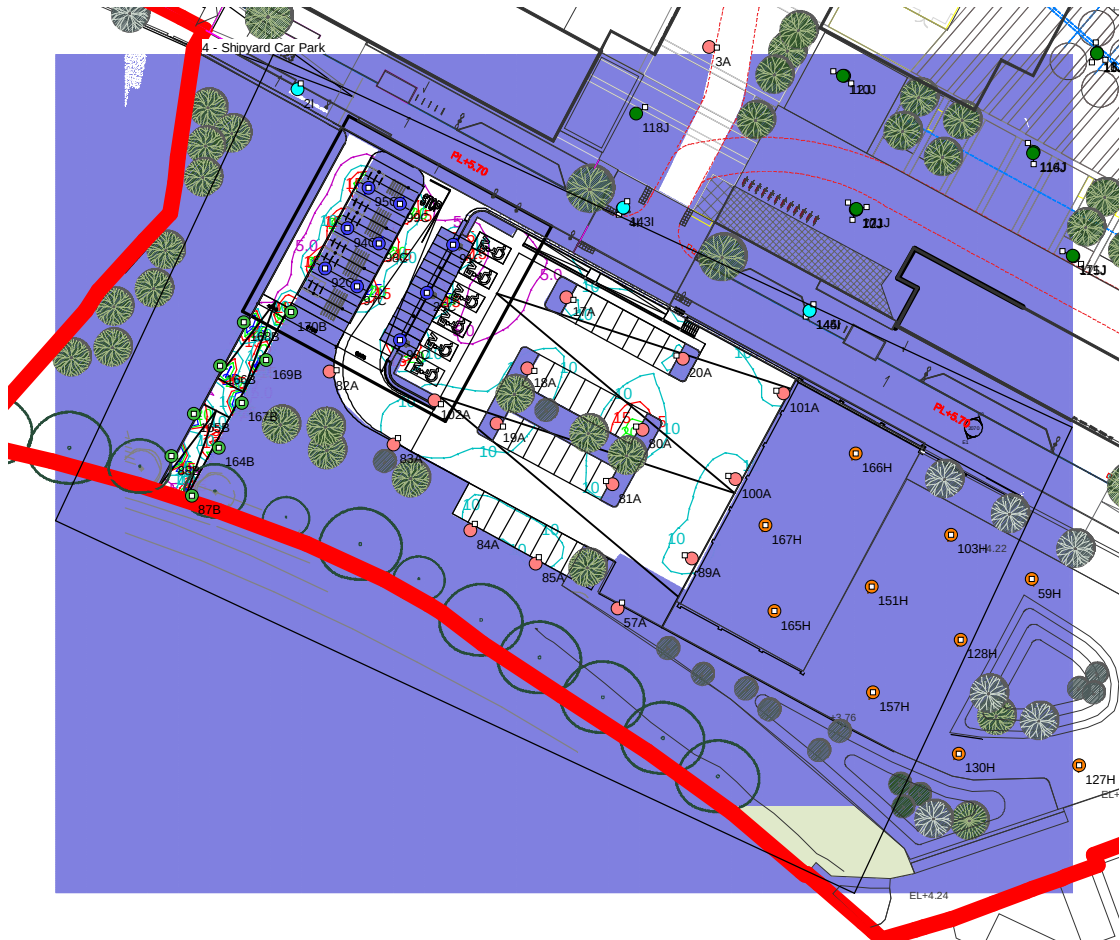


Results

Eav	7.99
Emin	2.16
E _{max}	14.45
Emin/E _{max}	0.15
Emin/Eav	0.27

Horizontal Illuminance (lux)

4 - Shipyard Car Park

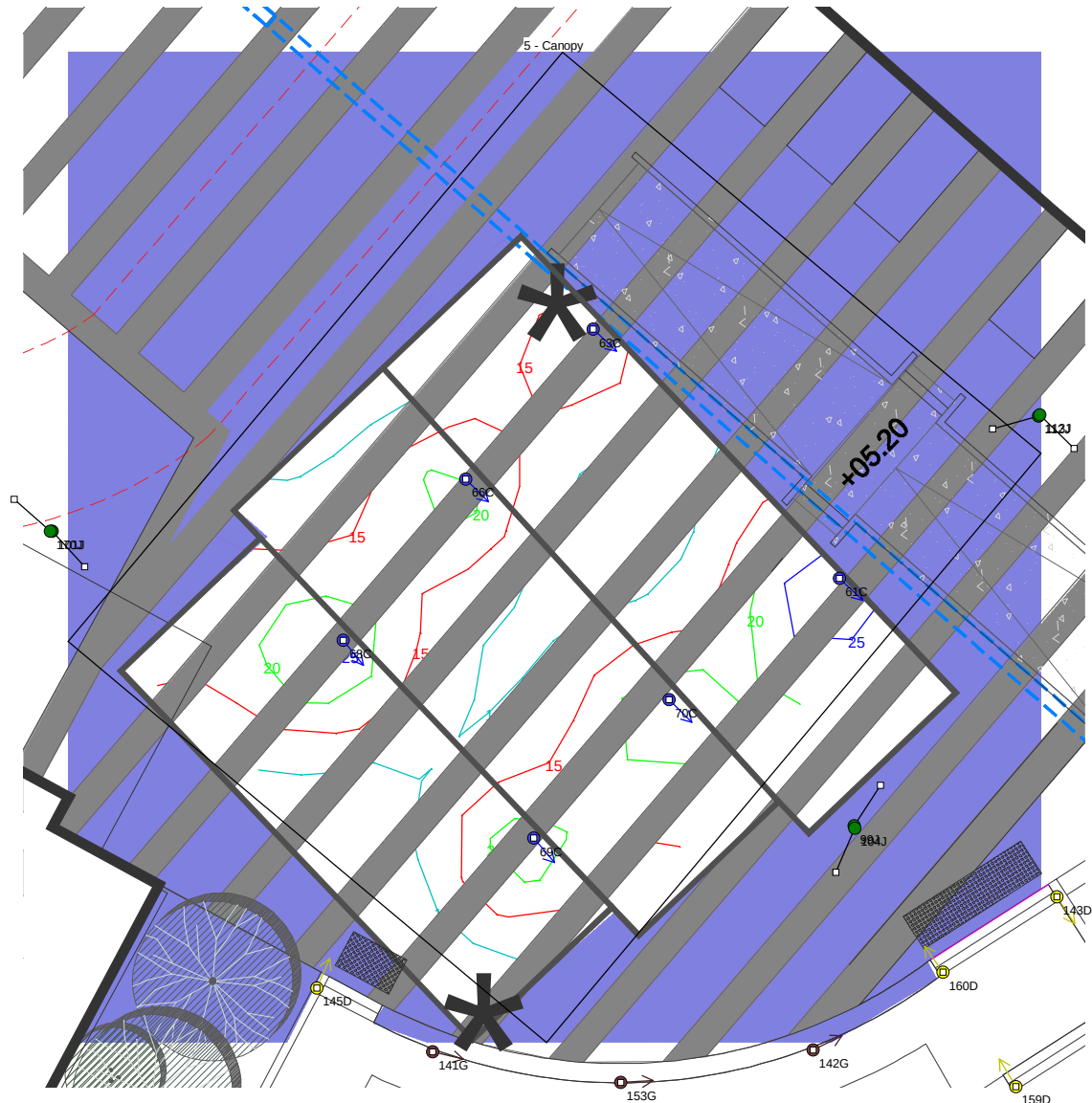


Results

Eav	9.01
Emin	2.17
Emax	38.09
Emin/Emax	0.06
Emin/Eav	0.24

Horizontal Illuminance (lux)

5 - Canopy

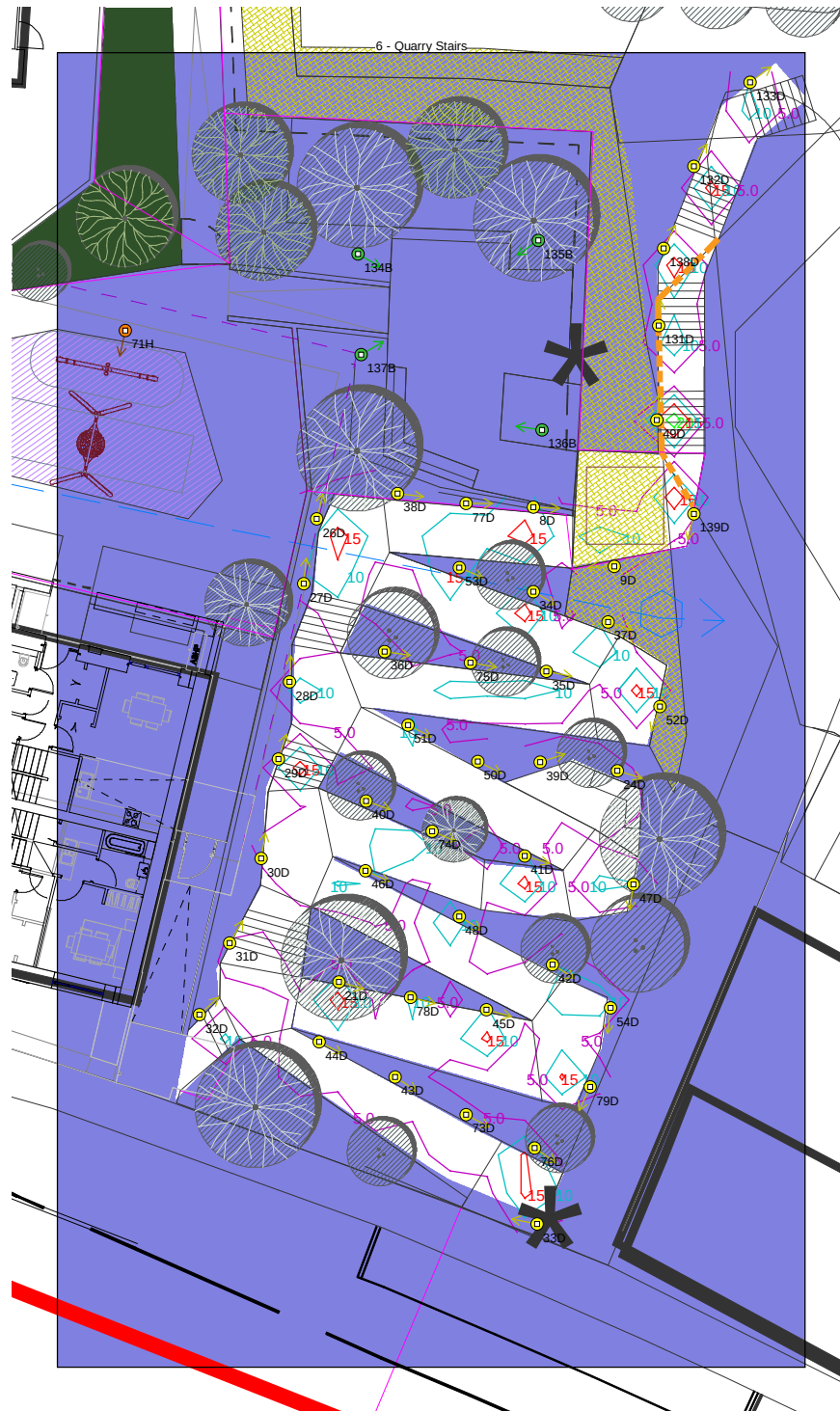


Results

Eav	14.52
Emin	5.59
E _{max}	29.15
Emin/E _{max}	0.19
Emin/Eav	0.39

Horizontal Illuminance (lux)

6 - Quarry Stairs

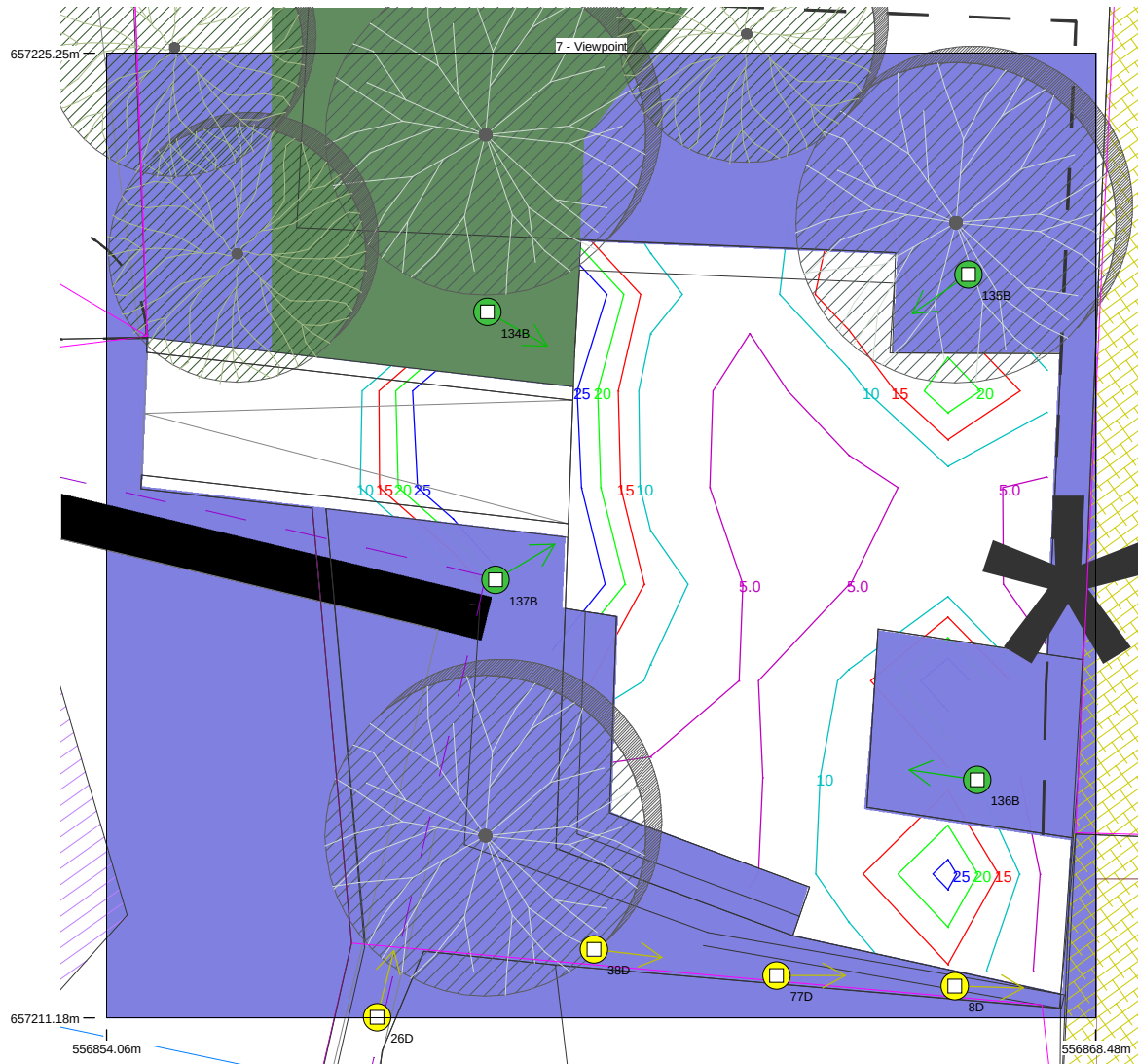


Results

Eav	7.94
Emin	1.66
E _{max}	23.82
E _{min} /E _{max}	0.07
E _{min} /E _{av}	0.21

Horizontal Illuminance (lux)

7 - Viewpoint

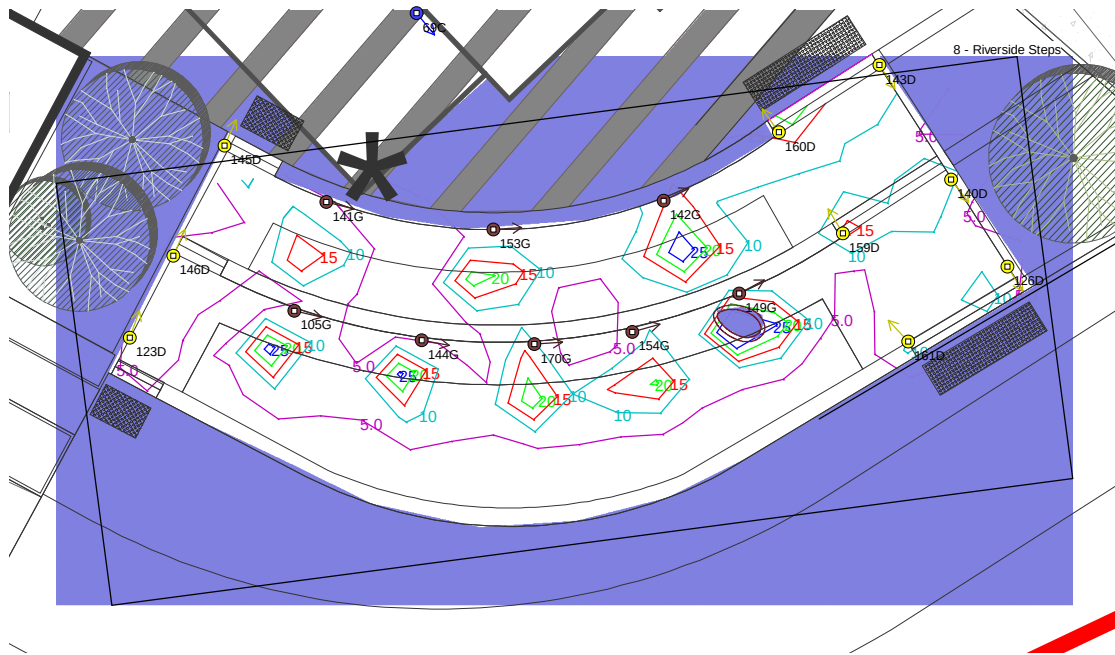


Results

Eav	11.04
Emin	3.41
E _{max}	37.03
E _{min} /E _{max}	0.09
E _{min} /E _{av}	0.31

Horizontal Illuminance (lux)

8 - Riverside Steps

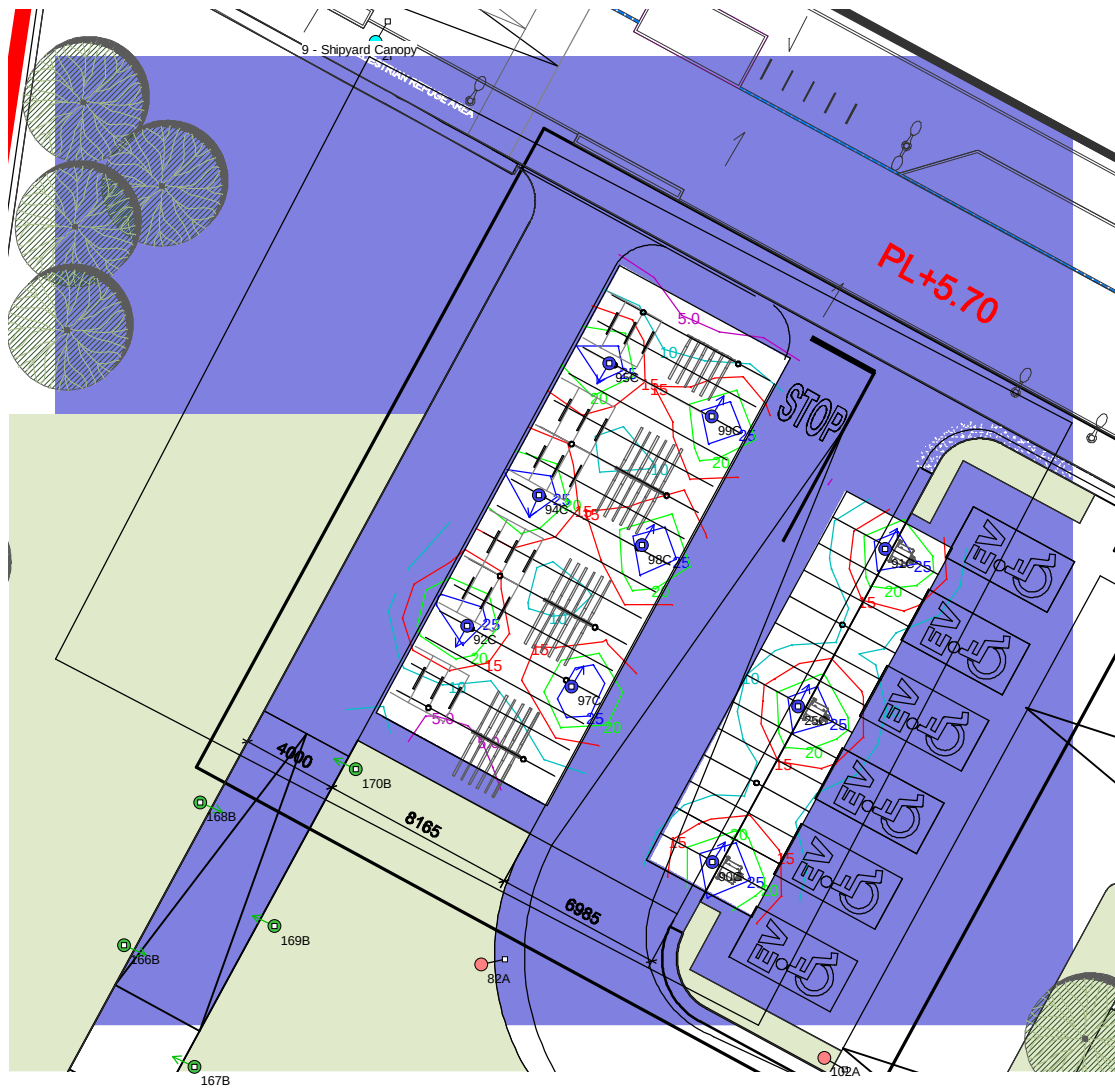


Results

Eav	7.90
Emin	1.56
Emax	30.14
Emin/Emax	0.05
Emin/Eav	0.20

Horizontal Illuminance (lux)

9 - Shipyard Canopy



Results

Eav	15.70
Emin	4.52
Emax	35.05
Emin/Emax	0.13
Emin/Eav	0.29

DATE: 3 October 2025
DESIGNER: Aisling McAvoy
PROJECT No: 277975
PROJECT NAME: Cleeves - Zone 6 Public Lighting

**LIGHTING
REALITY**

Target Class: P3
Average 7.5 lux minimum
Point illumination 1.5 lux minimum

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	1 - North Circular Road	556735.00	657201.00	327.00	35.00	1.50	1.46
2	2 - North Circular Road Pe...	556735.00	657200.00	326.00	37.00	1.50	1.48
3	3 - Stonetown Terrace	556975.00	657225.00	169.00	15.00	1.41	1.50
4	4 - Stonetown Terrace Pede...	556961.00	657229.00	183.00	16.00	1.52	1.45
5	Grid 5	557041.00	657060.00	110.00	29.00	1.49	1.45
6	Grid 6	556974.00	657006.00	196.00	38.00	1.50	1.46
7	7 - Pedestrian Crossing	556781.10	657192.50	2.40	7.80	0.80	1.30
8	8 - Kerb Edge	556779.06	657200.12	2.43	1.50	0.81	0.50
9	9 Centre line	556782.40	657196.80	2.34	1.50	0.78	0.50
10	10 Waiting Area	556783.79	657191.68	2.55	1.50	0.85	0.50

Luminaires

Luminaire A Data

Supplier	
Type	HESTIA GEN2 MINI 5304 [Flat glass], [Lum. s hape-related, Stee
Lamp(s)	10 LH351C@500mA WW 727 230V 01-37-041
LampFlux(klm)/Colour	2.26 WW 2700K/70
File Name	HESTIA GEN2 MINI 5304 10 LH351C 500mA WW 727 17.1W 506232 [Flat glass], [Lum. s...
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	218.6, 28.5, 0.0
No. in Project	2

Luminaire I Data

Supplier	Thorn_Isaro_idt
Type	IS XS 12L85-730 NR CL1 W50.3 M60 GY-S
Lamp(s)	IS12L85-730NR 32C6W
LampFlux(klm)/Colour	4.23 3000/70
File Name	96636133_(STD).LDT
Maintenance Factor	0.84
Imax70,80,90(cd/klm)	558.3, 85.9, 0.0
No. in Project	29



Luminaire K Data

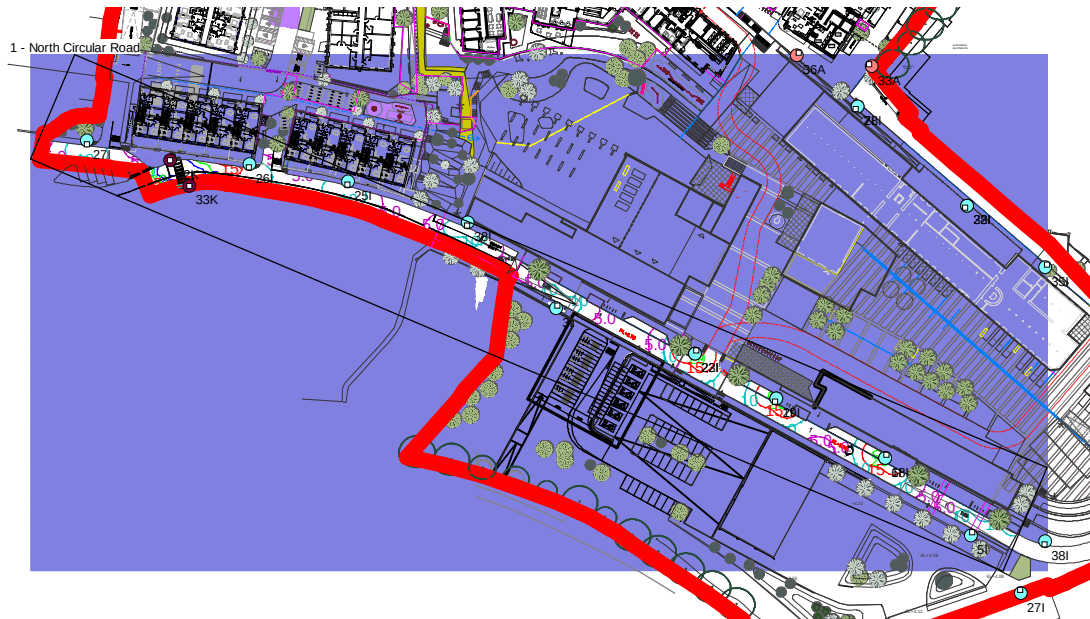
Supplier	D W Windsor
Type	Kirium Pro S1 16LED A1 2.7K 800mA UMSU G 42 0038 0000 100
Lamp(s)	16x2.7K LED
Lamp Flux (klm)	5.24
File Name	Kirium Pro S1 16LED A1 27K_800mA UMSU G 42 0038 0000 100.ies
Maintenance Factor	0.84
Imax70,80,90(cd/klm)	588.7, 222.6, 0.0
No. in Project	2

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
2	I	556965.95	657126.75	8.00	55.00	0.00	0.00	1.00			
3	I	556897.68	657154.72	8.00	60.00	0.00	0.00	1.00			
5	I	557026.05	657084.49	8.00	60.00	0.00	0.00	1.00			
6	I	556999.56	657108.43	8.00	243.00	0.00	0.00	1.00			
7	I	556991.10	657217.19	8.00	52.00	0.00	0.00	1.00			
13	I	557074.21	657143.30	8.00	51.00	0.00	0.00	1.00			
15	I	557101.40	657119.80	8.00	46.00	0.00	0.00	1.00			
18	I	556999.52	657108.43	8.00	69.00	0.00	0.00	1.00			
19	I	556965.95	657126.75	8.00	243.00	0.00	0.00	1.00			
22	I	556940.69	657140.66	8.00	242.00	0.00	0.00	1.00			
23	I	556940.65	657140.66	8.00	69.00	0.00	0.00	1.00			
27	I	557041.54	657066.57	8.00	106.00	0.00	0.00	1.00			
28	I	556991.00	657217.14	8.00	231.00	0.00	0.00	1.00			
32	I	557024.98	657186.55	8.00	49.00	0.00	0.00	1.00			
33	A	556995.39	657229.62	4.00	145.00	0.00	0.00	1.00			
35	I	557049.01	657167.48	8.00	52.00	0.00	0.00	1.00			
36	A	556972.15	657232.98	4.00	49.00	0.00	0.00	1.00			
38	I	556870.34	657181.31	8.00	253.00	0.00	0.00	1.00			
38	I	557049.03	657082.57	8.00	257.00	0.00	0.00	1.00			
21	I	557077.54	657093.50	8.00	305.00	0.00	0.00	1.00			
41	I	557119.44	657099.20	8.00	136.00	0.00	0.00	1.00			
23	I	557095.61	657080.62	8.00	130.00	0.00	0.00	1.00			
23	I	557126.73	657110.93	8.00	139.00	0.00	0.00	1.00			
24	I	557095.75	657106.28	8.00	307.00	0.00	0.00	1.00			
25	I	556833.34	657193.89	8.00	253.00	0.00	0.00	1.00			
26	I	556802.72	657199.38	8.00	263.00	0.00	0.00	1.00			
27	I	556752.45	657206.57	8.00	265.00	0.00	0.00	1.00			
28	I	557024.98	657186.53	8.00	229.00	0.00	0.00	1.00			
29	I	557020.42	657058.68	8.00	109.00	0.00	0.00	1.00			
30	I	556989.10	657045.84	8.00	113.00	0.00	0.00	1.00			
31	I	557127.53	657123.05	8.00	139.00	0.00	0.00	1.00			
32	K	556778.28	657200.57	6.00	287.00	5.00	0.00	0.00			
33	K	556784.06	657192.63	6.00	106.00	5.00	0.00	0.00			

Horizontal Illuminance (lux)

1 - North Circular Road

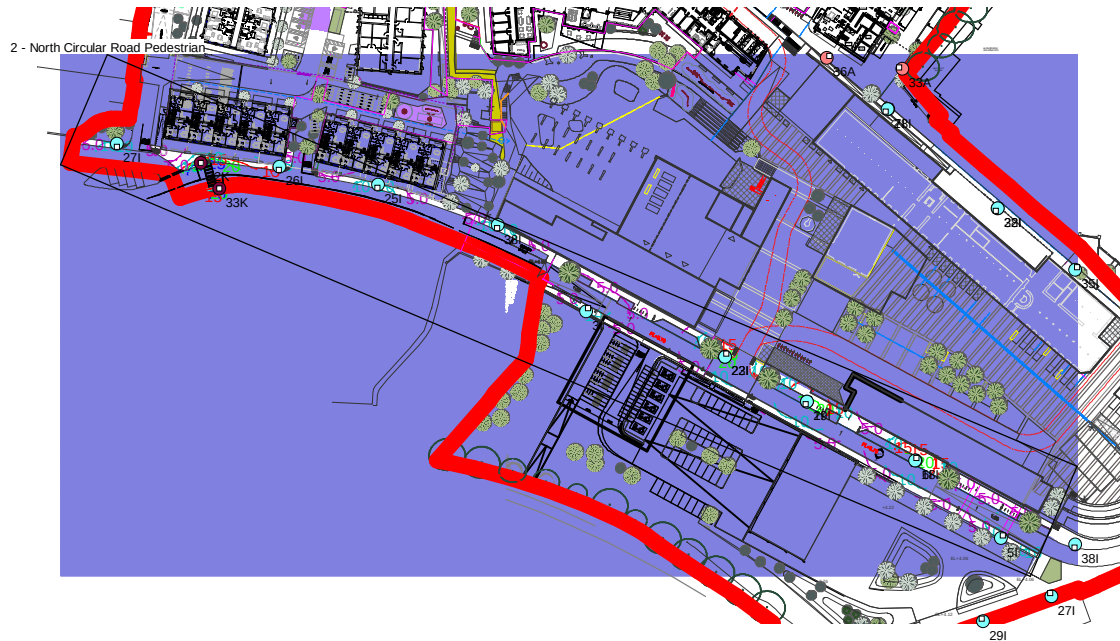


Results

Eav	10.34
Emin	2.44
Emax	47.66
Emin/Emax	0.05
Emin/Eav	0.24

Horizontal Illuminance (lux)

2 - North Circular Road Pedestrian

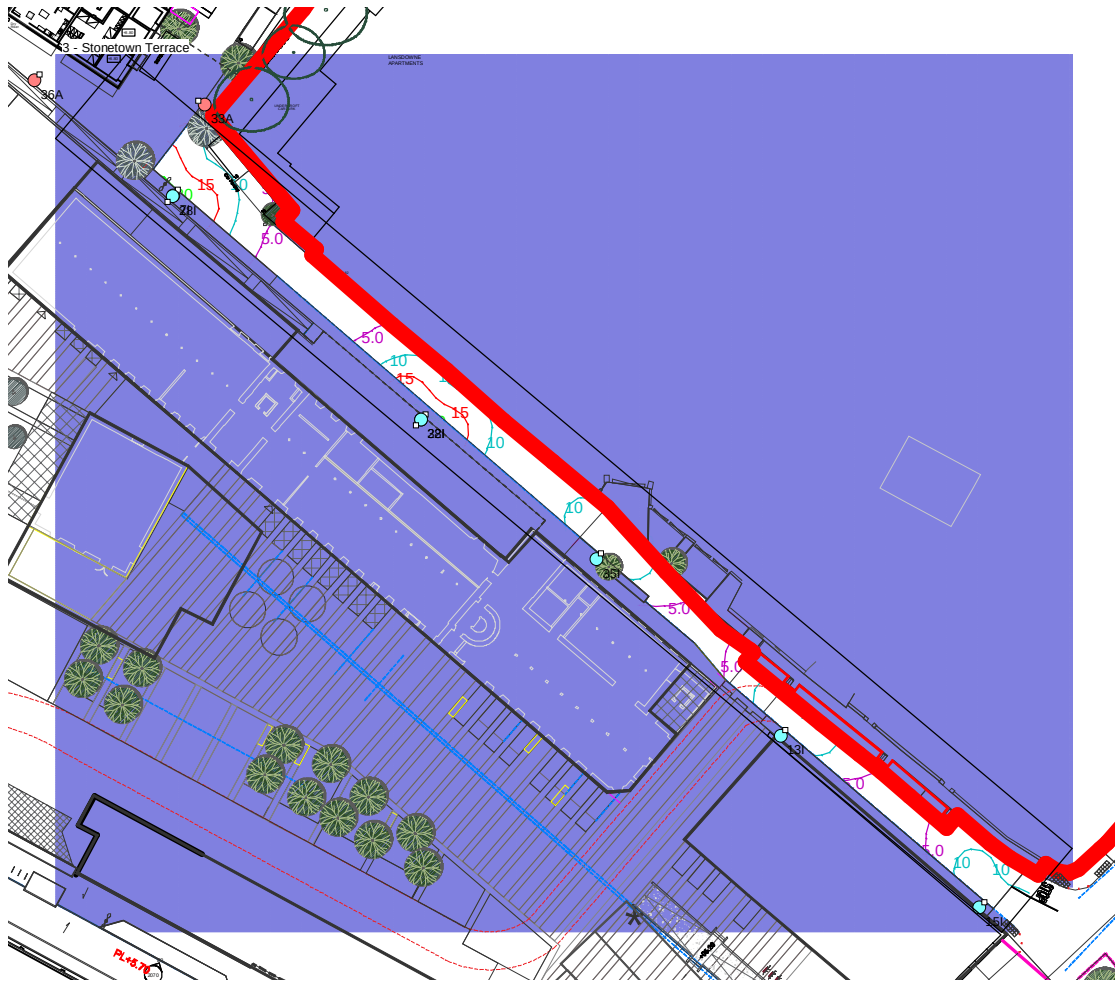


Results

Eav	8.34
Emin	1.82
Emax	34.54
Emin/Emax	0.05
Emin/Eav	0.22

Horizontal Illuminance (lux)

3 - Stonetown Terrace

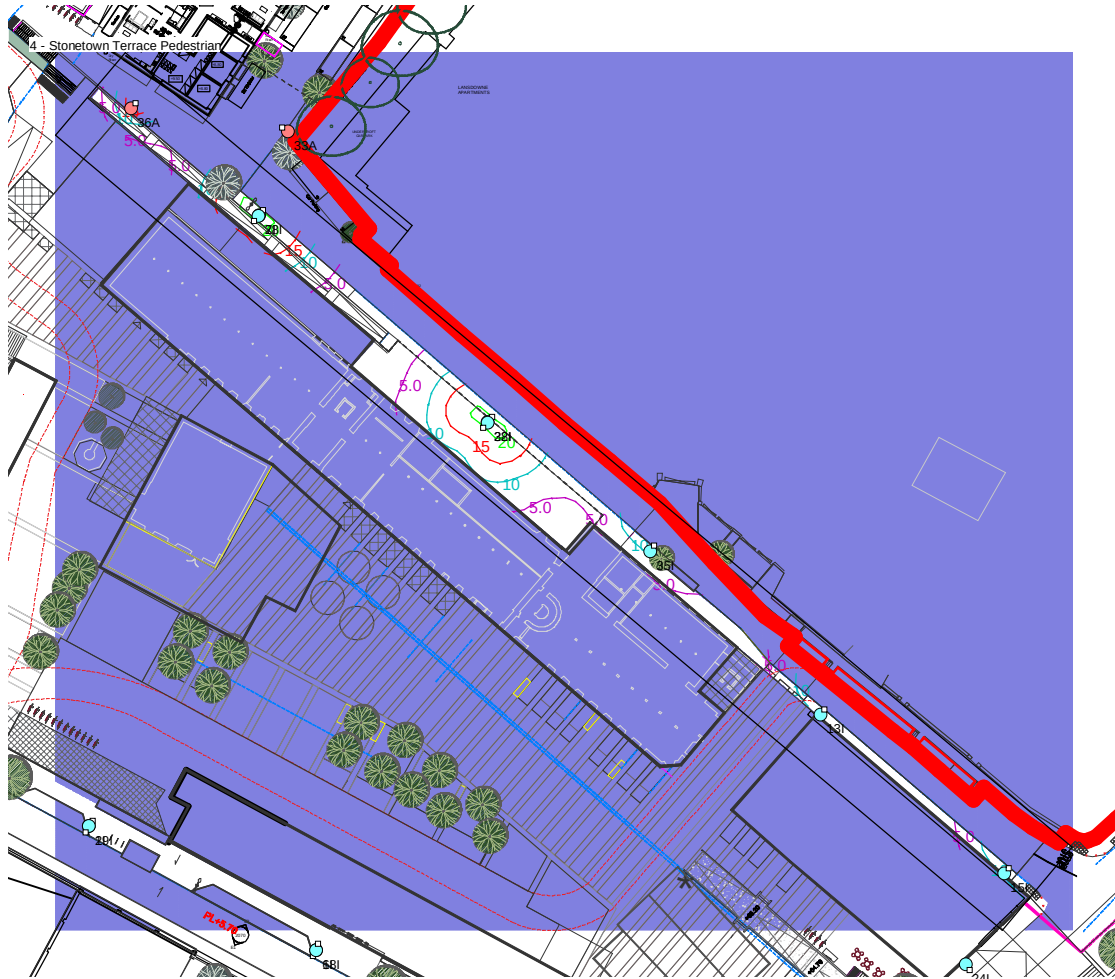


Results

Eav	8.57
Emin	2.24
Emax	19.55
Emin/Emax	0.11
Emin/Eav	0.26

Horizontal Illuminance (lux)

4 - Stonetown Terrace Pedestrian

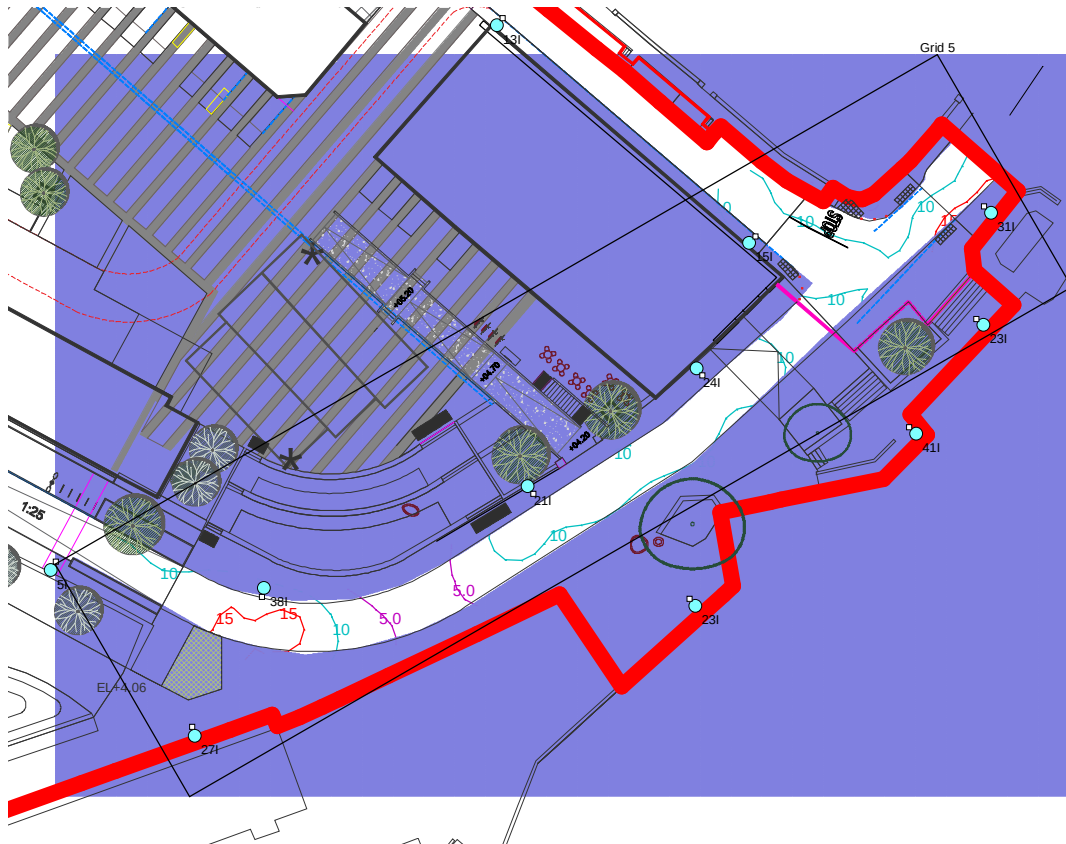


Results

Eav	8.98
Emin	2.12
Emax	20.54
Emin/Emax	0.10
Emin/Eav	0.24

Horizontal Illuminance (lux)

Grid 5

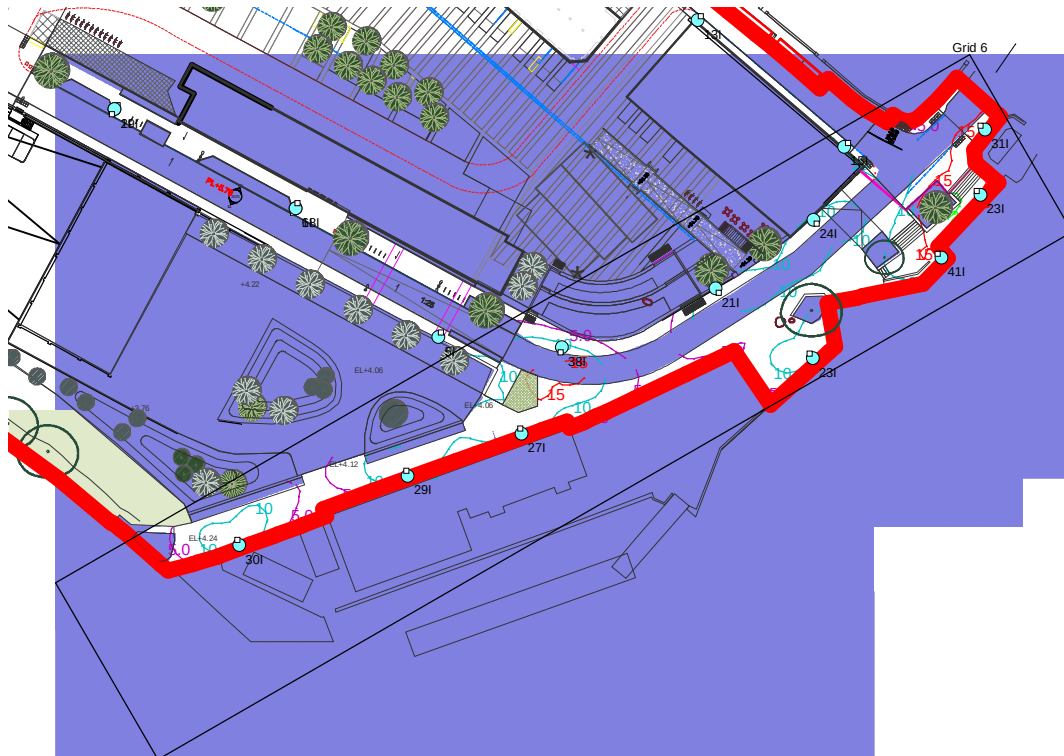


Results

Eav	10.53
Emin	3.10
Emax	16.39
Emin/Emax	0.19
Emin/Eav	0.29

Horizontal Illuminance (lux)

Grid 6

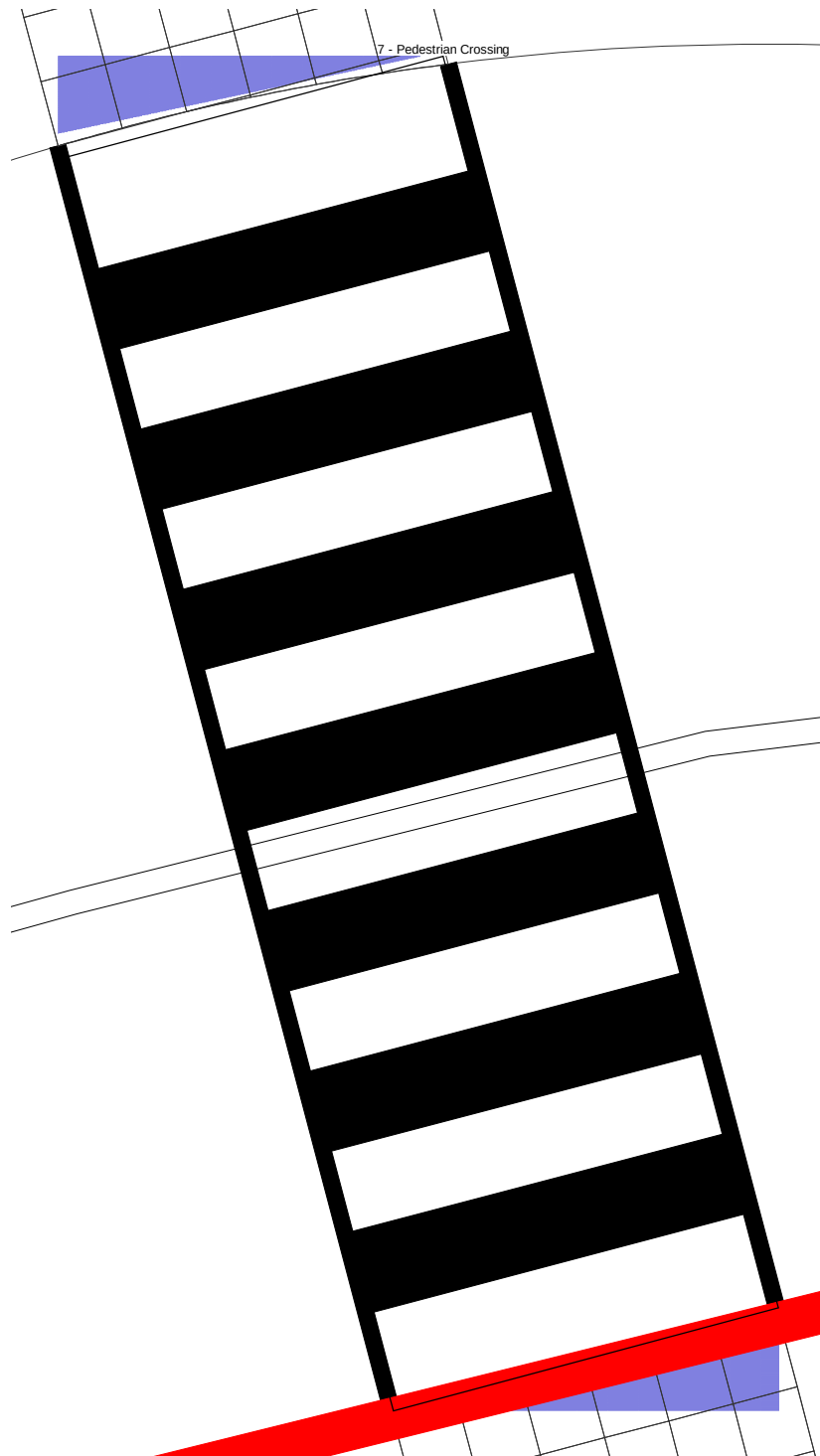


Results

Eav	9.87
Emin	1.98
Emax	21.10
Emin/Emax	0.09
Emin/Eav	0.20

Horizontal Illuminance (lux)

7 - Pedestrian Crossing



Results

Eav	37.46
Emin	31.61
E _{max}	44.22
E _{min} /E _{max}	0.71
E _{min} /E _{av}	0.84

Illuminance (lux)

8 - Kerb Edge

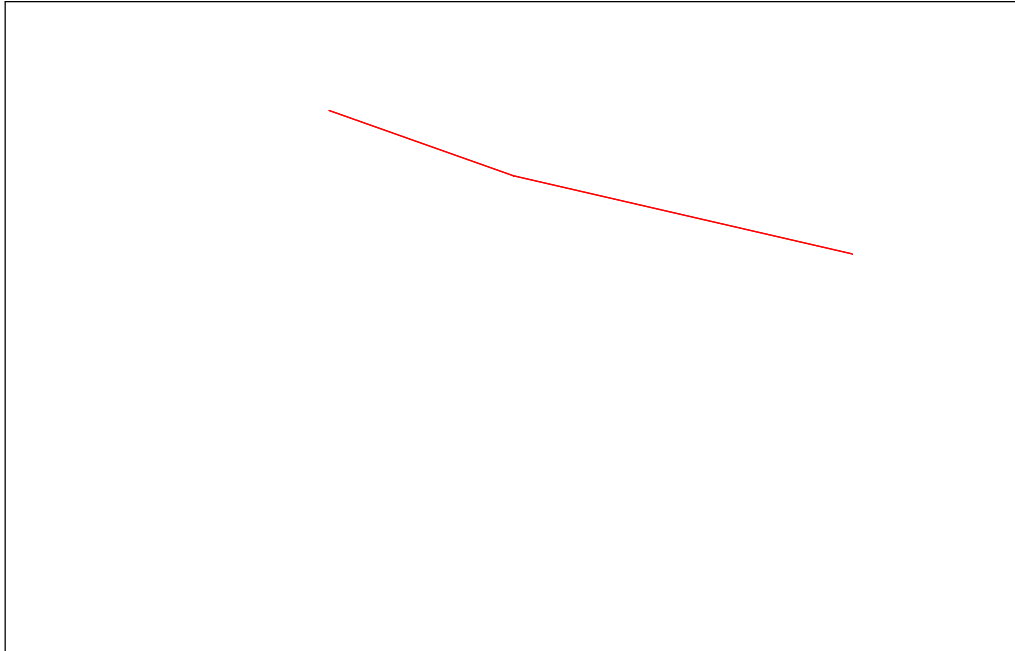


Results

Eav	8.84
Emin	8.28
Emax	9.37
Emin/Emax	0.88
Emin/Eav	0.94

Illuminance (lux)

9 Centre line



Results

Eav	13.63
Emin	11.22
E _{max}	16.58
Emin/E _{max}	0.68
Emin/Eav	0.82

Illuminance (lux)

10 Waiting Area



Results

Eav	8.37
Emin	8.06
Emax	8.65
Emin/Emax	0.93
Emin/Eav	0.96