BURO HAPPOLD

All Saints Library

External Lighting Strategy

1350B-BHE-XX-XX-RP-M-200002

065290

18 November 2025

Revision P02

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date	**18th November 2025**

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Glossary

Term	Definition
CIBSE	Chartered Institute of Building Services Engineers
DLOR	Downward Lighting Output Ratio
ILP	Institute of Lighting Professionals
LED	Lighting Emitting Diode
LOR	Light Output Ratio
LTP	Library Transformation Project
“The University”	Manchester Metropolitan University
ULR	Upward Light Ratio
U_o	Uniformity of Light

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1 Executive Summary

This design note serves to outline the design requirements of the external lighting for the All Saints Library Project at Manchester Metropolitan University.

The new lighting scheme is to be provided to limit light spill and to reduce the impact on the existing neighbourhood and local ecology. The reduction of glare and limiting of obtrusive light are also driving factors in the design of the external lighting. As a result of utilising LED technology and efficient luminaire optics, the light spill will not exceed the recommendations of the ILP Guidance Note "GN01 – Guidance notes for the reduction of obtrusive light."

With the new proposed lighting controls the lighting levels can be adjusted to accommodate differing lighting levels required for the times of day/night. The luminaires can be turned off when the building is unoccupied. Along with reducing the impact of the lighting on the surrounding are it also allows for a more economical lighting solution.

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2 Introduction

This external lighting strategy document is intended to describe the basis of design and outline description of the external lighting system associated with the All Saints Library Project at Manchester Metropolitan University. It has been produced as a requirement of the planning authority.

2.1 Context

BuroHappold Engineering have been appointed by Manchester Metropolitan University as part of the design team working undertaking design works for the proposed All Saints Library development. The project consists of the construction of a new nine storey library building (Use Class F1) along with associated public realm, access and servicing arrangements, along with other associated works.

2.2 Site Description

This 0.6 hectare Site in Manchester City Centre is bound by Oxford Road to the east, by the Mancunian Way to the north, Manchester Metropolitan University's Faculty of Business and Law to the west, and All Saints Park to the south. The Site currently comprises the vacant All Saints Library Building- a seven-storey brick building. The building on site is considered no longer fit for purpose and has been vacant since summer 2024. The Site is subject to a planning application (submitted August 2025) for demolition – due to be determined early December 2025.

Key Site Characteristics:

- Existing Use: Vacant library, considered not fit for purpose.
- Ecology: No protected species recorded on site. The Rochdale Canal Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC) lies within 10km, no nationally designated or non-statutory sites are within 2km. The site is largely hardstanding with negligible ecological importance.
- Flood Risk: Located within Flood Zone 1 (indicating a less than 1 in 1,000 annual probability of river or sea flooding) and the Conurbation Core Critical Drainage Area.
- Heritage: The Site contains no known designated or non-designated heritage assets. It is not within a conservation area; the nearest being the Whitworth Street Conservation Area c. 470 m to the north. There are 11 listed buildings within a 200m radius.

2.3 Description of Development

The proposed overall quantum of development is set out within Table 1.1.

	Proposed Parameters
Site area (inside red line)	0.6ha
Height AOD (metres)	74m
Height (metres)	36.765m
Total Floorspace – GIA (sqm)	12,021m^2
Total Floorspace – GEA (sqm)	13,080m^2
Use	Use Class F1 (Learning and non-residential institutions)

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2.4 Policy Review

To better understand the drivers for this development and set the policy context, a summary of the key development policies, legislation and guidance at both the national and local level has been provided. This development will be designed in accordance with these policies, standards and regulations.

Approved Document: Part L (2021) Building Regulations (2023 amendment)

The Conservation of Fuel and Power: Approved Document Part L (2021) Building Regulations (2023 amendment) sets the energy and carbon targets that must be achieved in new buildings other than dwellings, including setting minimum values for external lighting efficacy. These have been set to address the upcoming progressive energy improvement policies which strive towards achieving a net zero carbon standard in the future.

British Standards

- BS EN 12464-2:2014: Light and Lighting - Lighting of Outdoor work places.
- BS 5489-1:2020: Lighting of roads and public amenity areas.
- BS 8300-1:2018: Part 1 External Environment - Code of practice

Institute of Lighting Professionals

- ILP GN01-21: Guidance Notes on The Reduction of Obtrusive Light
- ILP Professional Lighting Guide 05/22: The brightness of illuminated advertisements including digital display (2023)

CIBSE Lighting Guides

- SLL Code for Lighting 2022.
- SLL Lighting Guide LG 06: The Exterior Environment (2016).
- SLL Lighting Guide LG 14: Control of Electric Lighting (2023)

National Planning Policy Framework (December 2024)

The National Planning Policy Framework (December 2024) and relevant planning practice guidance sets out the Government's planning policies for England. The presumption in favour of sustainable development is at the heart of the framework, cascading through to local plans and the approval process for planning applications.

Guide to Development in Manchester – Supplementary Planning Document (SPD) and Planning Guidance

The Supplementary Planning Document (SPD) for the Guide to Development in Manchester does not create new policy, but expands on and provides further detail on existing policies. Although the SPD refers to the former Unitary Development Plan (UDP) policies, the guidance is to be applied instead to the new policies described in the 2012 Core Strategy Development Plan and the 2024 Places for Everyone (PfE). The principles and guidance on the Environmental Standards Statement remain current and complimentary to the Local Plan.

Core Strategy Development Plan Document (Adopted 11th July 2012)

The Manchester Local Plan guides development within Manchester. The Core Strategy is the key document in Manchester's Local Plan, covering a period of 15 years from 2012 to 2027. It sets out the long-term strategic policies for Manchester's future development, forming the framework for planning applications.

Places for Everyone (2024)

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The Places for Everyone (PfE) Joint Development Plan (2024) sets out how the regions should be developed between 2022 and 2039 and provides a strategic framework for local plans.

2.5 External Lighting Strategy Description

An external lighting scheme is require to provide both functional and feature lighting to the external spaces immediately adjacent to the building. Promoting safe movement, adequate illumination for security and the creation of engaging communal spaces. The primary emphasis of the external scheme is to provide lighting to the following areas:

- Entrances to the building along from All Saints Park and to the rear of the building from the Service Yard adjacent Mancunian Way
- Perimeter walkways to the building:
    - Front of the building adjacent All Saints Park
    - Rear of the building adjacent car park below Mancunian Way
    - East of the building along Oxford Road
    - West of the building to the new public realm space
- Digital display screens within the façade, along the East and West elevations

The aim of this design note is to outline the strategy and design for the external lighting scheme that provides artificial lighting to the various areas listed. The new lighting scheme will limit light spill to the surrounding areas through the use of appropriate luminaires with good optics and careful positioning, to minimise the impact on the surrounding ecology and neighbouring buildings. Luminaires will utilise the latest LED technology where possible to reduce power consumption and optimise the efficiency of the lighting.

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3 Design Criteria

The external lighting scheme will be design in accordance with the SLL Code for Lighting, BS EN:12464-2, CIBSE Lighting Guide 6 "The External Environment" and the ILP Guidance Note GN01 "Guidance Notes for the Reduction of Obtrusive Light". The external lighting scheme is also to be developed with reference to the Manchester Metropolitan University Design Guides.

Relevant areas and lux levels are provided in the table below.

Area	Maintained Illuminance (Lux)	Standard
Walkways exclusively for pedestrians	5	BS EN:12464-2
Traffic areas for slowly moving vehicles (max 10km/h, e.g. bicycles)	10	BS EN:12464-2
Regular vehicle traffic (max 40km/h)	20	BS EN:12464-2
Pedestrian passages, vehicle turning, loading and unloading points	50	BS EN:12464-2

For the purposes of designing the external lighting it is assumed that the development sits within a classification E4 Environmental Zone – Urban surroundings with high district brightness and therefore the following design criteria shall be adopted from the ILP Guidance Note GN01:

Obtrusive Light Limitations for Exterior Lighting Installations						
Environmental Zone	Sky Glow ULR [Max %]	Light Intrusion (into windows) E_v [lux]		Luminaire Intensity I [candelas]		Building Luminance Pre-Curfew
		Pre-Curfew	Post-Curfew	Pre-Curfew	Post-Curfew	Average, L [cd/m^2]
E0	0	0	0	0	0	0
E1	0	2	0	2,500	0	0
E2	2.5	5	1	7,500	500	5
E3	5.0	10	2	10,000	1,000	10
E4	15	25	5	25,000	2,500	25

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4 Existing Site Condition

4.1 Desktop Assessment

The site is bound by Oxford Road to the east, by the Mancunian Way to the north, Manchester Metropolitan University's Faculty of Business and Law to the west, and All Saints Park to the south.

Key Site Characteristics:

- Ecology: No protected species recorded on site. The Rochdale Canal Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC) lies within 10km, no nationally designated or non-statutory sites are within 2km. The site is largely hardstanding with negligible ecological importance.
- Heritage: The Site contains no known designated or non-designated heritage assets. It is not within a conservation area; the nearest being the Whitworth Street Conservation Area c. 470 m to the north. There are 11 listed buildings within a 200m radius.
- The landscape lighting strategy will be designed to blend to the existing All Saints campus sitewide lighting strategy, complimenting the existing strategy in terms of lighting levels, luminaire selection and control strategy

4.2 Aerial Views



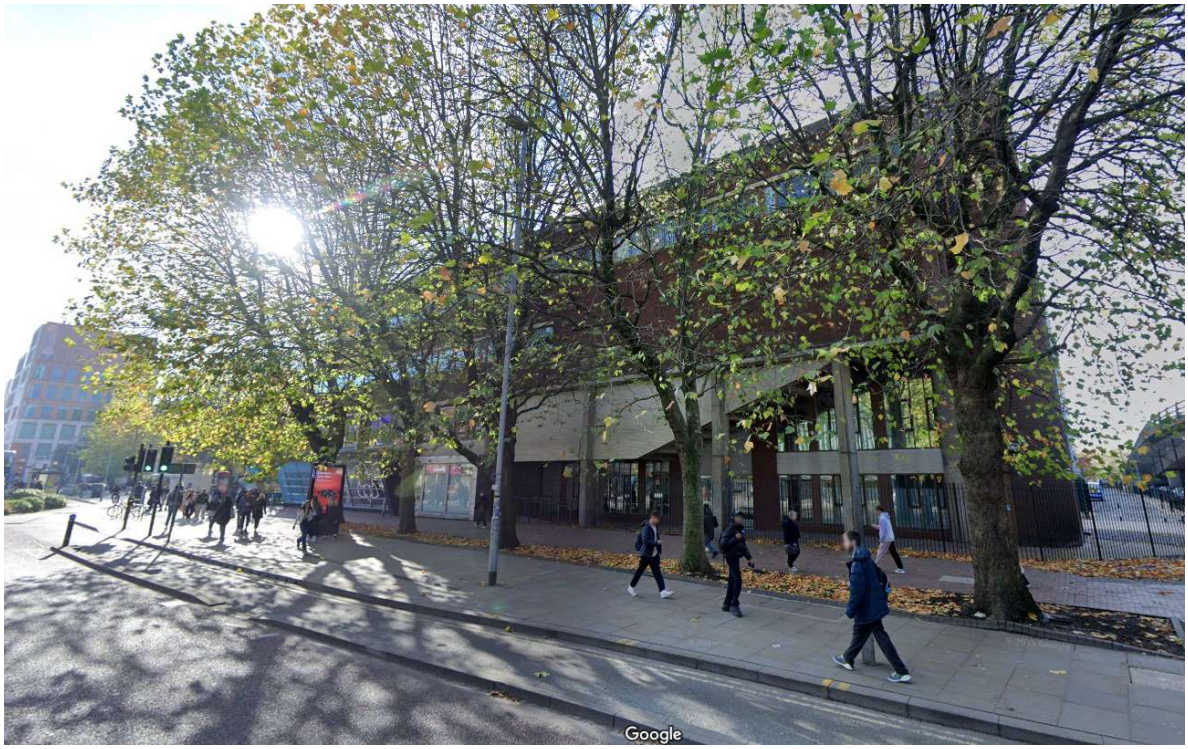
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4.3 View Along Oxford Road



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5 Proposed Lighting Strategy

5.1 Proposed Lighting Strategy Drawing

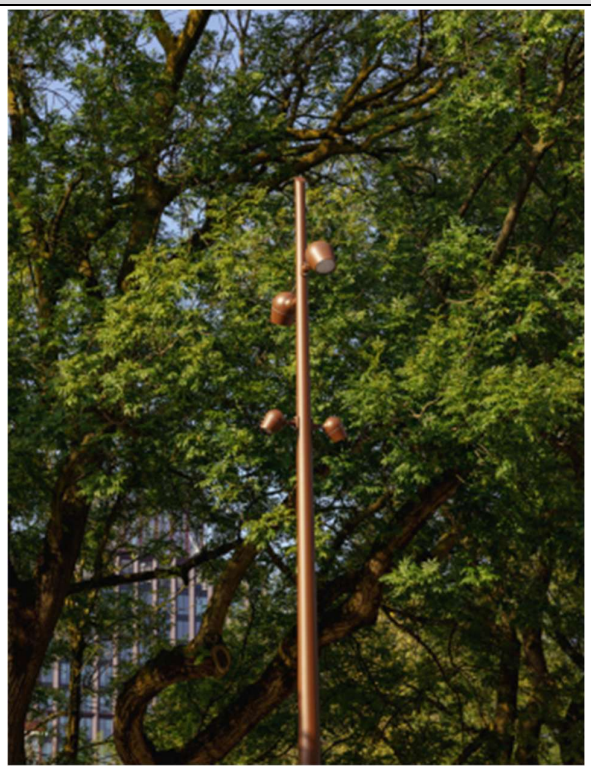
Refer to Appendix A

5.2 Proposed External Lighting Luminaires

Lighting will predominantly be LED energy efficient technology and will compromise several luminaire mounting types including:

- Lighting columns within public realm
- Uplighters to trees within public realm
- Lighting under benches within public realm
- Bollards within public realm
- Wall mounted luminaires on the building

The proposed lighting design is to be further developed, and agreed via a relevant planning condition, however the following luminaires have been assumed for calculation and coordination purposes during the current design stage:

Reference	Description	Location	Image of Luminaire
EX1	Column mounted, IP66 rated, Die-cast aluminium body with a polycarbonate lens	Ground mounted within public realm	

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EX2	Ground mounted, IP66 rated, Die-cast aluminium body with a polycarbonate lens	Ground mounted adjacent trees within public realm	
EX3	Surface mounted LED flexible luminaire, IP68 rated	Surface mounted under/within planters and seating to provide wash of light	
EX4	Ground mounted, IP68 rated, bollard luminaire	Ground mounted within public realm	
EX5	Wall mounted, IP66 rated, Die-cast aluminium body with a polycarbonate refractor to minimise upwards light (less than 2%).	Wall mounted outside final exits and pedestrian walkways.	

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EX6	Recessed luminaire, IP65 rated, wide beam with low glare.	Recessed within the underside of the building overhang outside the front and rear entrances to the building.	

5.3 Minimising Impact on Surrounding Area

The lighting design will be progressed to ensure minimal impact on the surrounding area, in accordance with the relevant design standards outlined within this document. In order to ensure these limits are achieved the following measures will be implemented during the design:

- Minimising light spill through the correct selection of luminaires and optics to deliver the light efficiently to the area requiring illuminating, whilst minimising light spill
- Ensuring lux levels are achieved, but spaces are not over illuminated. The design will include full lighting calculations to verify the design prior to installation, along with post-installation lux level measurements to verify the design
- Lighting control selection to ensure lighting is only provided when required. This will include linking luminaires to photocells and astronomical time-clocks, appropriately zoned to suit the site layout

5.4 Conclusion and Recommendations

The lighting design and luminaire selection will be chosen to be in line with MCC requirements and will be designed to avoid light pollution issues at the sensitive receptors on Oxford Road. The final lighting design is to be further developed and agreed via planning condition following the detailed design.

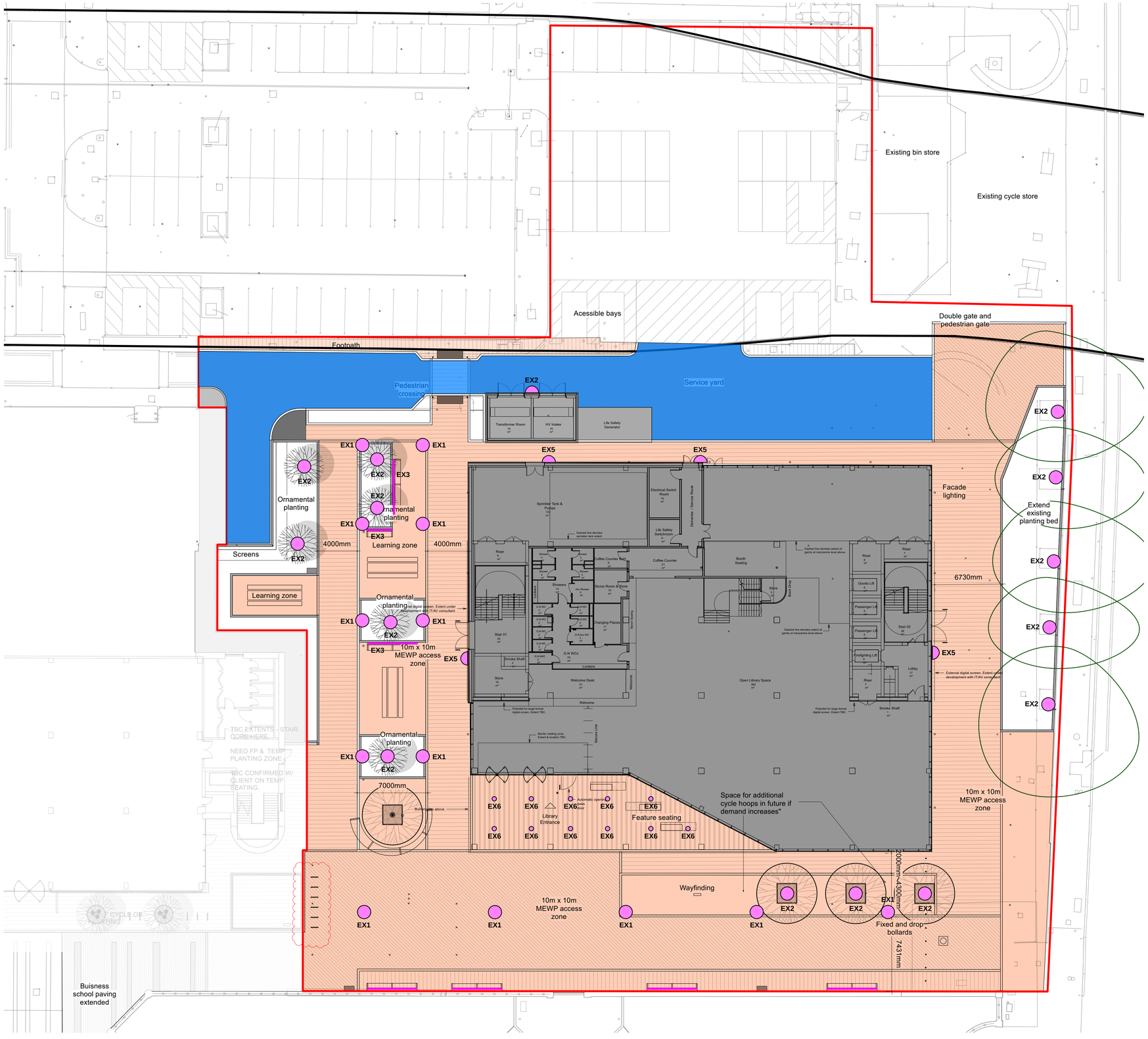
Initial calculations indicate the following:-

- By the selection of luminaires with good optics and light sources the amount of light spill and glare can be restricted to well within the site constraints and ensure surrounding areas are not impacted.
- The use of LED lamps, efficient optics and controls will ensure that the external lighting design is energy efficient, have a very good whole life cost and require minimal maintenance.

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Appendix A Proposed Lighting Strategy Drawings

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Legend

E_m - 10 lux
U_o - 0.4

E_m - 20 lux
U_o - 0.4

BURO HAPPOLD	*Project:* All Saints Library		*Project Number:* 065290	*Status:* For Information	
	Sketch Title: External Lighting Strategy		*Sketch Number:* SK-E-1000	*Date:* 03/11/25	*Initials:* JW	*Revision:* P01

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Appendix B Indicative Lighting Calculations

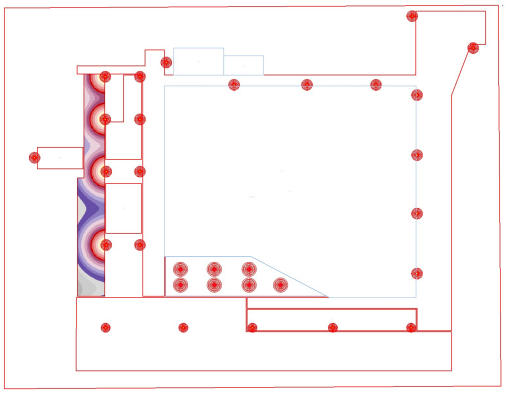
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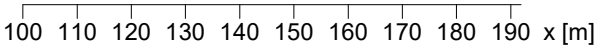
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Installation :
Project number :
Date : 21.11.2025

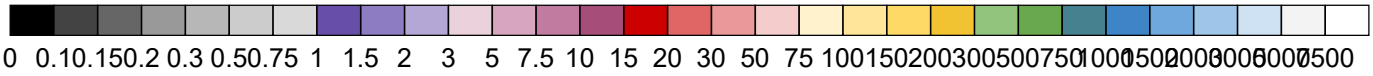
1 Exterior 1

1.1 Summary, Exterior 1

1.1.1 Result overview, Measuring area 1







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	63753 lm
Total power	700.8 W
Total power per area (6387.62 m²)	0.11 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	15 lx
Minimum illuminance	E_{min}	0 lx
Maximum illuminance	E_{max}	107 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:34 (0.03)
Diversity U_d	E_{min}/E_{max}	1:238 (0)

Type No.\Make

		selux	
1	24 x	Order No.	: SX 981 30-9/GOLD
		Luminaire name	: Elo Poller
		Equipment	: 1 x LED 25 W / 2400 lm

1 Exterior 1

1.1 Summary, Exterior 1

1.1.1 Result overview, Measuring area 1

ï»¿ERCO GmbH

2 7 x

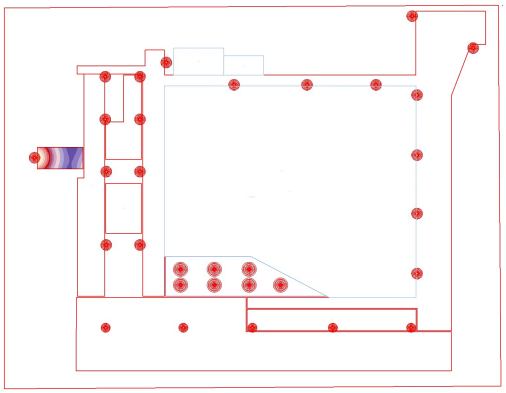


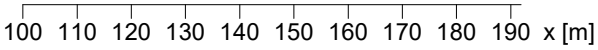
Order No. : 41210000_V03
Luminaire name : Quintessence Downlight
Equipment : 1 x LED 12.1W warm white 14.4 W / 879 lm

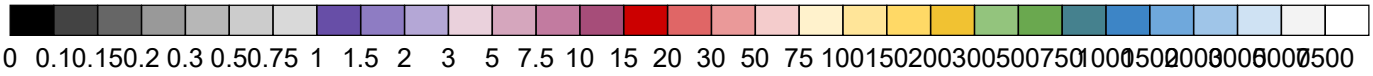
RELUX®

1.1 Summary, Exterior 1

1.1.2 Result overview, Measuring area 2







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	63753 lm
Total power	700.8 W
Total power per area (6387.62 m²)	0.11 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	16 lx
Minimum illuminance	E_{min}	1 lx
Maximum illuminance	E_{max}	106 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:11.9 (0.08)
Diversity U_d	E_{min}/E_{max}	1:80 (0.01)

Type No.\Make

		selux	
1	24 x	Order No.	: SX 981 30-9/GOLD
		Luminaire name	: Elo Poller
		Equipment	: 1 x LED 25 W / 2400 lm

1.1 Summary, Exterior 1

1.1.2 Result overview, Measuring area 2

ï»¿ERCO GmbH

2 7 x

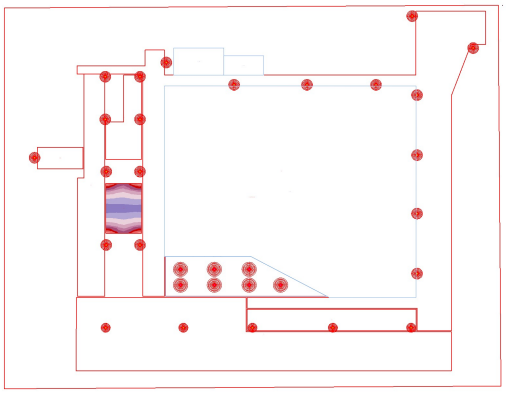


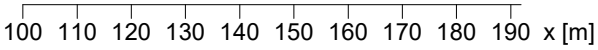
Order No. : 41210000_V03
Luminaire name : Quintessence Downlight
Equipment : 1 x LED 12.1W warm white 14.4 W / 879 lm

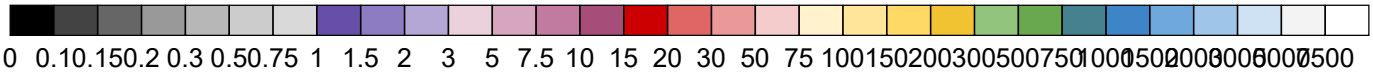
RELUX®

1.1 Summary, Exterior 1

1.1.3 Result overview, Measuring area 3







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	63753 lm
Total power	700.8 W
Total power per area (6387.62 m²)	0.11 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	12 lx
Minimum illuminance	E_{min}	1.8 lx
Maximum illuminance	E_{max}	21.1 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:3.38 (0.3)
Diversity U_d	E_{min}/E_{max}	1:12 (0.08)

Type No.\Make

		selux	
1	24 x	Order No.	: SX 981 30-9/GOLD
		Luminaire name	: Elo Poller
		Equipment	: 1 x LED 25 W / 2400 lm

1.1 Summary, Exterior 1

1.1.3 Result overview, Measuring area 3

ï»¿ERCO GmbH

2 7 x

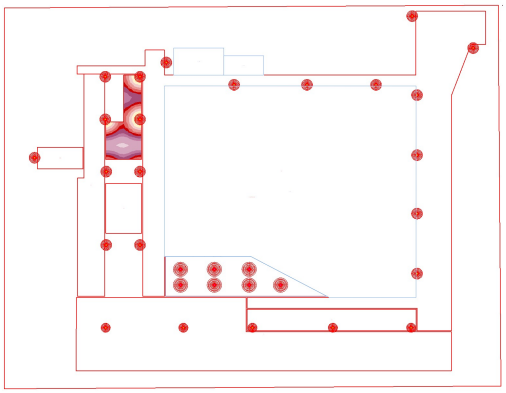


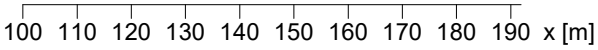
Order No. : 41210000_V03
Luminaire name : Quintessence Downlight
Equipment : 1 x LED 12.1W warm white 14.4 W / 879 lm

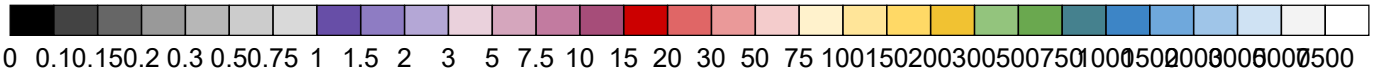
RELUX®

1.1 Summary, Exterior 1

1.1.4 Result overview, Measuring area 4







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	63753 lm
Total power	700.8 W
Total power per area (6387.62 m²)	0.11 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	26 lx
Minimum illuminance	E_{min}	4 lx
Maximum illuminance	E_{max}	107 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:6.76 (0.15)
Diversity U_d	E_{min}/E_{max}	1:28.2 (0.04)

Type No.\Make

		selux	
1	24 x	Order No.	: SX 981 30-9/GOLD
		Luminaire name	: Elo Poller
		Equipment	: 1 x LED 25 W / 2400 lm

1.1 Summary, Exterior 1

1.1.4 Result overview, Measuring area 4

ï»¿ERCO GmbH

2 7 x

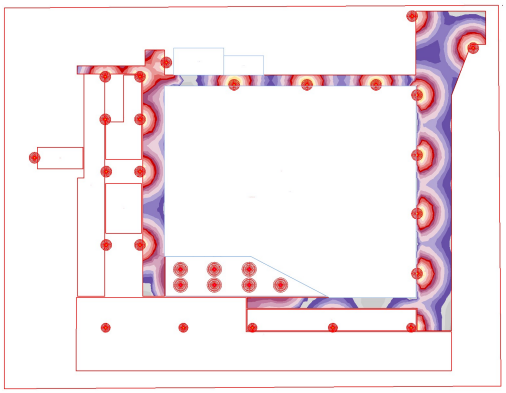


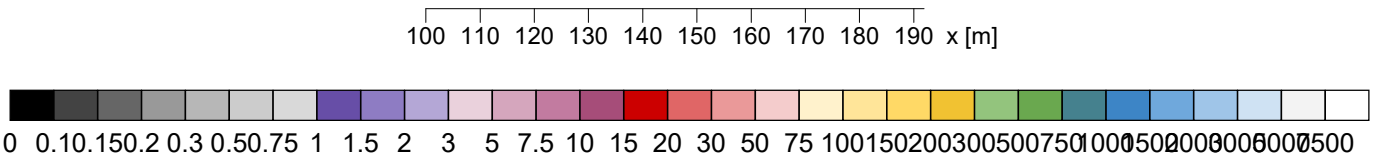
Order No. : 41210000_V03
Luminaire name : Quintessence Downlight
Equipment : 1 x LED 12.1W warm white 14.4 W / 879 lm

RELUX®

1.1 Summary, Exterior 1

1.1.5 Result overview, Measuring area 5





General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	63753 lm
Total power	700.8 W
Total power per area (6387.62 m²)	0.11 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	16 lx
Minimum illuminance	E_{min}	1 lx
Maximum illuminance	E_{max}	112 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:27.8 (0.04)
Diversity U_d	E_{min}/E_{max}	1:191 (0.01)

Type No.\Make

		selux	
1	24 x	Order No.	: SX 981 30-9/GOLD
		Luminaire name	: Elo Poller
		Equipment	: 1 x LED 25 W / 2400 lm

1.1 Summary, Exterior 1

1.1.5 Result overview, Measuring area 5

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2 7 x

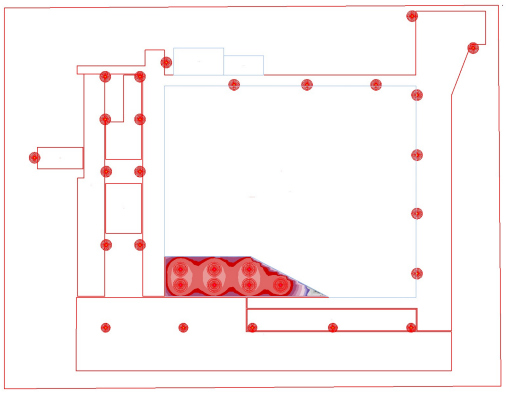


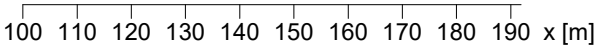
Order No. : 41210000_V03
Luminaire name : Quintessence Downlight
Equipment : 1 x LED 12.1W warm white 14.4 W / 879 lm

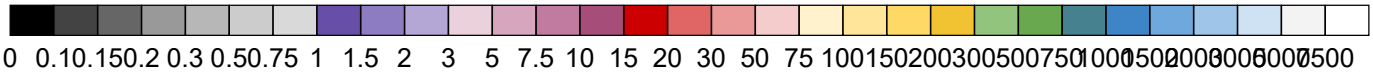
RELUX®

1.1 Summary, Exterior 1

1.1.6 Result overview, Measuring area 6







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	63753 lm
Total power	700.8 W
Total power per area (6387.62 m²)	0.11 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	25.8 lx
Minimum illuminance	E_{min}	0.7 lx
Maximum illuminance	E_{max}	47.5 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:38 (0.03)
Diversity U_d	E_{min}/E_{max}	1:69.9 (0.01)

Type No.\Make

		selux	
1	24 x	Order No.	: SX 981 30-9/GOLD
		Luminaire name	: Elo Poller
		Equipment	: 1 x LED 25 W / 2400 lm

1.1 Summary, Exterior 1

1.1.6 Result overview, Measuring area 6

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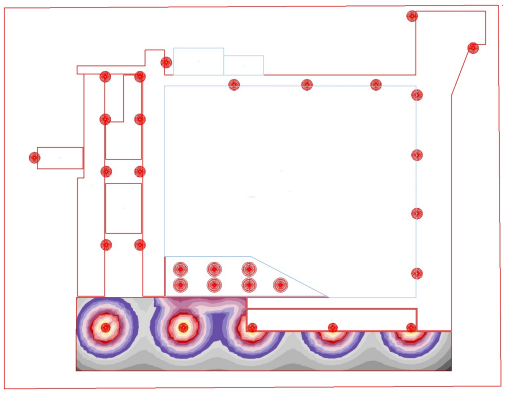
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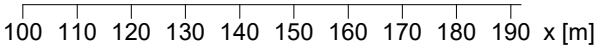


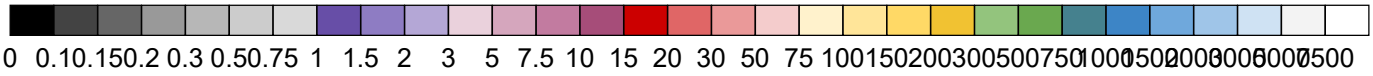
Order No. : 41210000_V03
Luminaire name : Quintessence Downlight
Equipment : 1 x LED 12.1W warm white 14.4 W / 879 lm

1.1 Summary, Exterior 1

1.1.7 Result overview, Measuring area 7







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	63753 lm
Total power	700.8 W
Total power per area (6387.62 m²)	0.11 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	12 lx
Minimum illuminance	E_{min}	0 lx
Maximum illuminance	E_{max}	136 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:50.6 (0.02)
Diversity U_d	E_{min}/E_{max}	1:885 (0)

Type No.\Make

		selux	
1	24 x	Order No.	: SX 981 30-9/GOLD
		Luminaire name	: Elo Poller
		Equipment	: 1 x LED 25 W / 2400 lm

1.1 Summary, Exterior 1

1.1.7 Result overview, Measuring area 7

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2 7 x

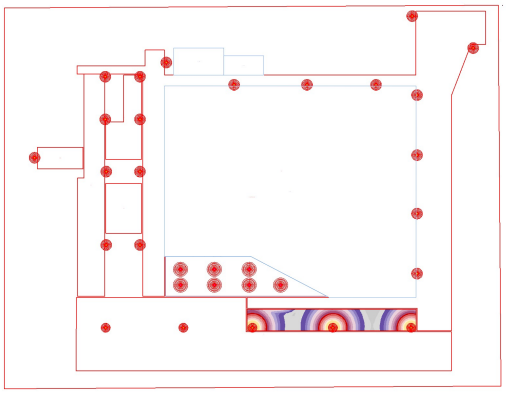


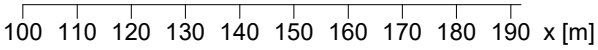
Order No. : 41210000_V03
Luminaire name : Quintessence Downlight
Equipment : 1 x LED 12.1W warm white 14.4 W / 879 lm

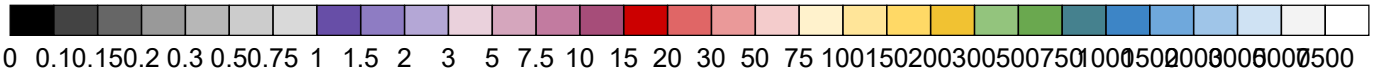
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1.1 Summary, Exterior 1

1.1.8 Result overview, Measuring area 8







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	63753 lm
Total power	700.8 W
Total power per area (6387.62 m²)	0.11 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	22 lx
Minimum illuminance	E_{min}	1 lx
Maximum illuminance	E_{max}	151 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:34.3 (0.03)
Diversity U_d	E_{min}/E_{max}	1:236 (0)

Type No.\Make

		selux	
1	24 x	Order No.	: SX 981 30-9/GOLD
		Luminaire name	: Elo Poller
		Equipment	: 1 x LED 25 W / 2400 lm

1.1 Summary, Exterior 1

1.1.8 Result overview, Measuring area 8

ï»¿ERCO GmbH

2 7 x



Order No. : 41210000_V03
Luminaire name : Quintessence Downlight
Equipment : 1 x LED 12.1W warm white 14.4 W / 879 lm

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