

CHOCOLATE FACTORY – WOOD GREEN EXTERNAL LIGHTING ASSESSMENT



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External Lighting Assessment

WORKSPACE - CHOCOLATE FACTORY

WOOD GREEN

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Rev	Date	Prepared by	Checked by	Approved by
00	11 th March 2024	S. Harris	V Radusinovic	D Croft

Comments/Purpose

For Planning Condition 11

Disclaimer

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INTRODUCTION

Background



The Chocolate Factory Site is located to the west of Wood Green Town Centre, with Alexandra School and a number of factory units located to the North, and a new residential development to the South. The site is designated within Haringey's Local Plan as a "Local Employment Area", and "Cultural Quarter".

The use of the site as a Factory for making sweets and confection dates to circa 1882, when Barratt & Co, best known as "Barratt's" for their childhood confectionary favourites, relocated from Hoxton.

Of the original factory, two interconnected buildings -previously known as Block B and Block C - but now designated as combined "Block A" under the planning application, have been retained.

Block C (The northern block) dates to circa 1904/1905 and underwent a internal refurbishment in 2017. Although it is nominally outside the Scope of this project, the existing external lighting is to be replaced and supplemented with additional fittings.

Block B is in the process of being renovated and extended, with a new public realm area being provided to the South (previously occupied by another building). The building dates to the mid 1930's. New external lighting is proposed to all elevations.

Objective

The objective of this document is to outline the new external lighting strategy for the existing Workspace Chocolate Factory building.

The report will address the following key criteria of the external lighting design:

- The proposed layout of luminaires for the façade lighting
- The control strategy, lux levels and specified light fittings
- The design aspects to minimise light spill pollution to neighbouring residential buildings.

The lighting design has been carried out in consultation with the relevant British Standards, including BS 5489-1: 2020 *Design of road lighting - Lighting of roads and public amenity areas*, and CIBSE lighting guides, including *ILP Guidance Note 1 for the reduction of obtrusive light 2021*, as well as taking into account architectural aspirations, the requirements for the buildings external CCTV cameras, and the need to create a safe environment for the building users.

Proposed Design

The lighting design consists of wall-mounted luminaires to provide street-level public realm lighting around the perimeter of the building for the purposes of safe access and egress, as well as providing emergency "point of exit" lighting in accordance with the requirements of BS 5266.

Where fittings are located on the South and East facades, and on the West and North façade of Block B only, (Type "X and Xe") these have been selected to include a narrow vertical beam of light to highlight the strong vertical architectural features of the building.

All fittings are selected in a minimum of IP65 waterproof rating.

Refer to Appendix A for Lighting software visuals.

Refer to Appendix C for the Lighting layout drawing

Controls and Specified Luminaires

The external lighting scheme will be controlled by a combination of photocells and override timeclocks to ensure energy efficient usage. The photocell will be located on the roof of the building so as not to be interfered by the lighting itself. The photocell will ensure the lights are only active during darkness.

The override timeclocks will be being utilised to turn external lighting off outside of the designated curfew hours of 10pm to 7am, and override "on" in the infrequent event where lighting may be required during daylight hours (e.g. for testing).

Refer to Appendix B for luminaire specification.



Lighting Design Standards and Performance

Lighting calculations have been undertaken in Dialux.

Area to the West of the building – Combined vehicle and pedestrian access.

Under BS 5489-1, the area to the West of the building been determined as lighting class “C2” – requiring average horizontal illuminance of 20 lux, and uniformity of 0.4

Calculations show the proposed lighting design achieves an average 24.3 lux, at 0.49 uniformity.

Pedestrian Areas to the South and East of the building.

The areas to the South and East of the building are pedestrian only areas, and do not specifically come under the auspices of BS 5489. However, the design has targeted lighting Class “P1”, which would require an average horizontal illuminance of 15 lux, and uniformity of 0.2. This exceeds the guidance given in CIBSE LG6 – the Exterior Environment.

Calculations show the pedestrian areas to the South and East of the building achieving 18.8 lux and 14.7 lux respectively, with a uniformity of 0.19

Obtrusive Light

Under ILP Guidance Note 1, for the purposes of this report the area has been classified as Environmental Zone E3 – Suburban, defined as “well inhabited rural and urban settlements, small town centres of suburban locations”. **However**, for the purposes of the direct impact of the Chocolate Factory external lighting design on the adjacent residential buildings, the design has sought to improve on this classification.

As previously detailed, the lighting will not operate during curfew hours.

Vertical Illuminance

Under the ILP guidance, the maximum vertical illuminance on adjacent premises (specifically windows) is 10 lux.

Vertical illuminance calculations have been taken at all residential windows in the residential buildings (Block E1 and E2) directly opposite. The maximum measured vertical illuminance has been calculated at 3.44 lux, which exceeds the requirements of Environmental Zone E2 – Rural areas (5 lux).

Luminous Intensity

The luminaires selected have a projected area of 0.016. The nearest maintained observer position has been taken in the windows in the building directly opposite – at 14.7m (horizontal distance). Under the ILP guidance, the maximum permitted luminous intensity for this luminaire at this location is 3.8 x 14.7m = 55.86 candela.

As detailed in the subsequent sections, the external lighting design for the Chocolate factory has actually limited the impact to the adjacent residential property windows to below the values required for Environmental Zone E2 – Rural locations.

Luminous intensity calculations have been taken from the adjacent residential building at ground floor (looking “up”) and first floor (looking “down”) and directly opposite a luminaire.

Results show these as 4 candelas and 2 candelas respectively, which exceed the requirements outlined for Environmental Zone E1 – Natural areas.

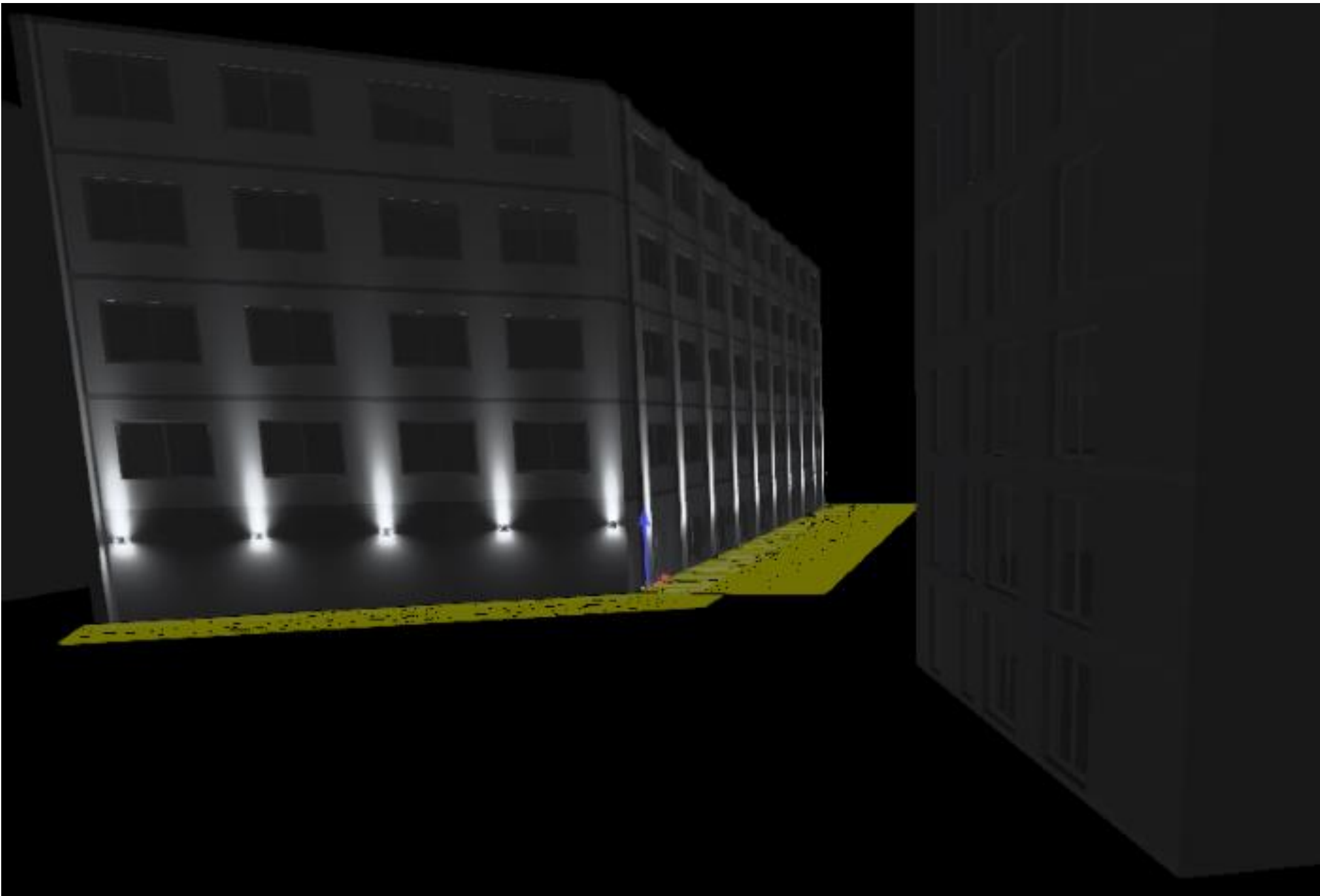
Results for Ground floor provided below.

Exterior Scene 1 / Luminous intensity calculation point 1 / Summary						
Position: (12.000 m, -10.000 m, 1.700 m)						
Possible interference sources						
No.	Luminaire	Position [m]			Luminous emittance	Luminous intensity [cd]
		X	Y	Z		
1	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	12.100	4.501	3.000	Luminous emittance 1	4
2	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	17.736	4.507	3.000	Luminous emittance 1	2
3	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	23.373	4.512	3.000	Luminous emittance 1	1
4	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	29.010	4.518	3.000	Luminous emittance 1	0
5	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	34.647	4.524	3.000	Luminous emittance 1	0
6	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	40.284	4.529	3.000	Luminous emittance 1	0
7	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	45.921	4.535	3.000	Luminous emittance 1	0
8	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	51.558	4.541	3.000	Luminous emittance 1	0
9	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	57.195	4.546	3.000	Luminous emittance 1	0
10	WE-EF;Eulumdat2 131-9542 SLS420 [E/A60] IP66;2xLED-6/24W/3K;SLS420 LED, Wall Luminaires / Surface Mounted	62.832	4.552	3.000	Luminous emittance 1	0



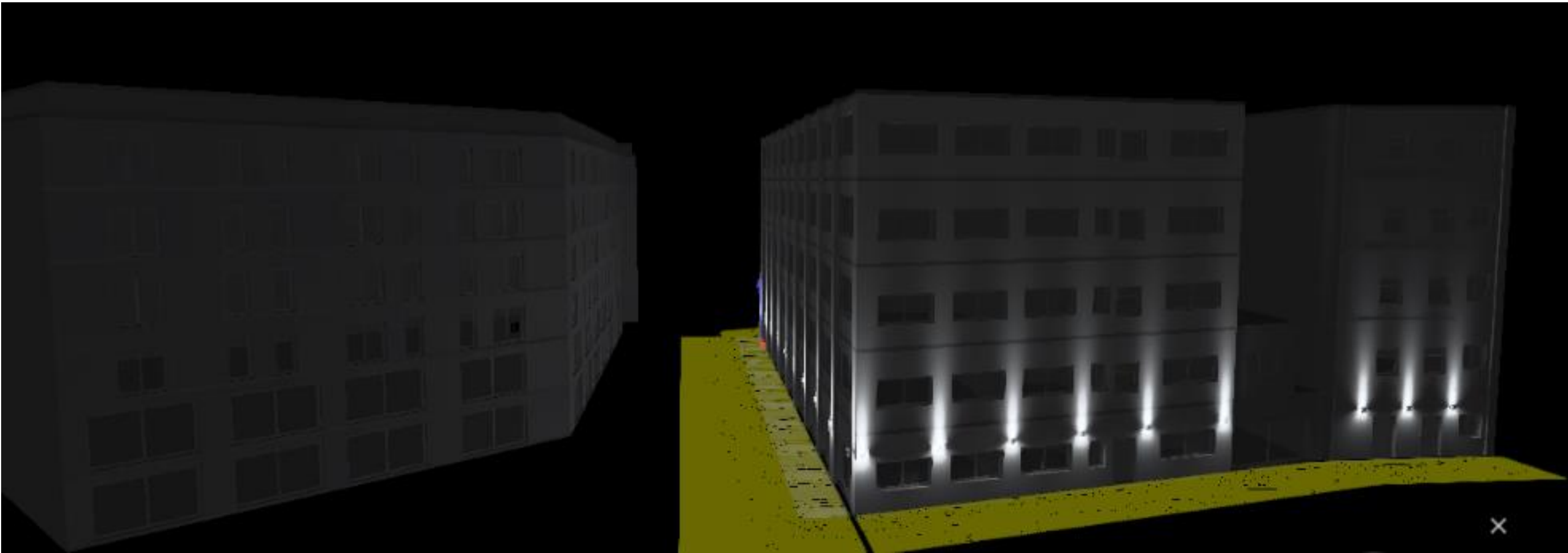
APPENDIX A – LIGHTING SOFTWARE VISUALS

West Façade



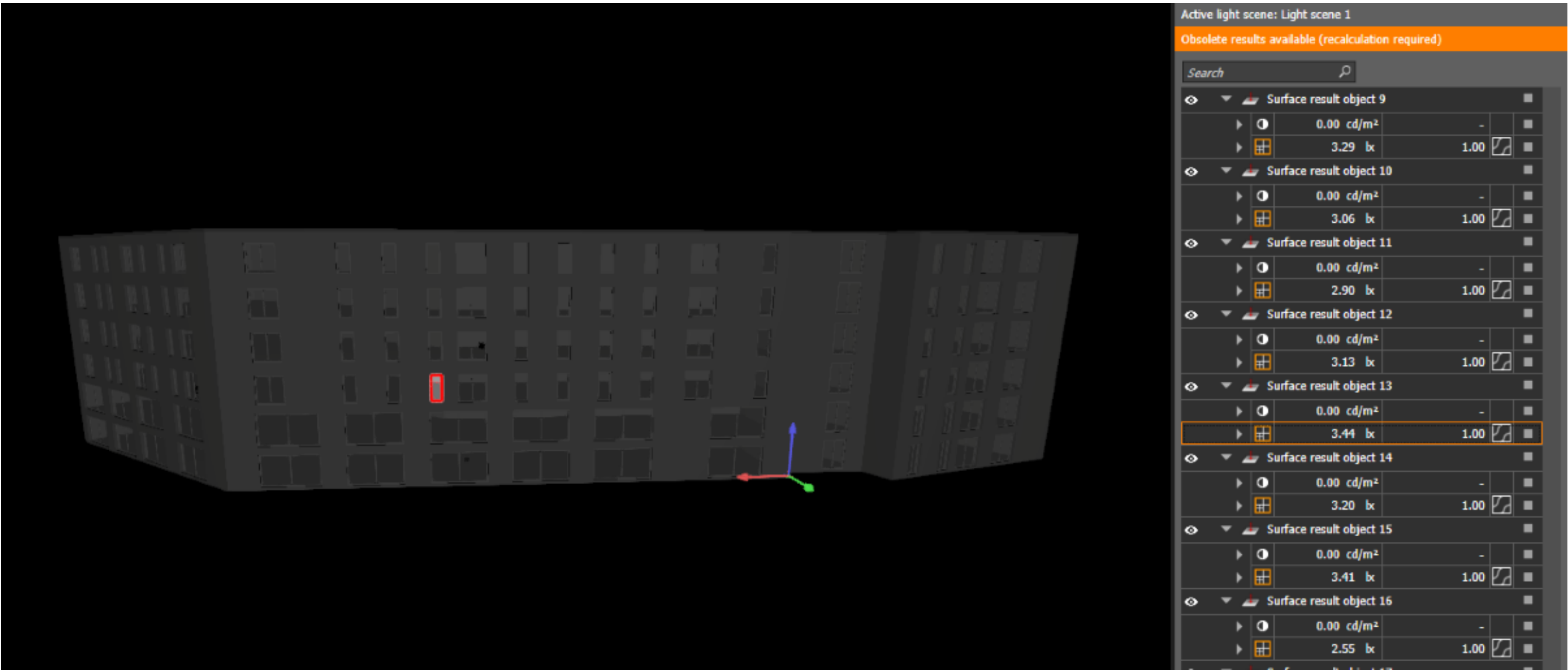


East Façade





Block E1/E2 – Vertical Illuminance (Worst case highlighted)





APPENDIX B – SPECIFIED LUMINAIRES

Type X / XE (3000K)

SLS420 LED

Wall luminaires surface mounted

Description
IP66, Class I. Class II on request. IK07. Marine-grade, die-cast aluminium alloy. 5CE superior corrosion protection including PCS hardware. Silicone rubber gasket. Safety glass lens. Two cable entries. Integral EC electronic converter. CAD-optimised optics for superior illumination and glare control. OLC® One LED Concept. Factory installed LED circuit board. 1-10V or DALI interface on request. Optional 2200 K version up to max. 1050mA available. To be specified at time of ordering.

symmetric, narrow beam up and forward throw down [E/A60]

131-9542	LED-2x6/24W / 700 mA - 3000 K	2167.2 lm	27 W	80	4.90
131-9548	LED-2x6/24W / 700 mA - 4000 K	2316.6 lm	27 W	80	4.90
131-9314	LED-2x6/24W / 700 mA - 2700 K	2017.7 lm	27 W	80	4.90

Type R / RE

Luminaire Image

Luminaire Dimensions

Light Distribution Curve

160mm

130mm

285mm

Light Output Ratio:

LOR (%)

ULOR (%)

DLOR (%)

100%

0

100

Glare Evaluation:

X=4H, Y=8H

Radiant class

UGR transverse

UGR longitudinal

S=0.25H

70/50/20

N/A

N/A



APPENDIX C – EXTERNAL LIGHTING LAYOUT