

Reading Link Retail Park Gym

Installation : Interior & Exterior

Project number : LDS180823

Customer : L Harvey and Son Ltd

Processed by : Ian Hill

Date : 18.08.2023

We have pleasure in attaching our 'Lighting Proposal' for the attached Project.

We have calculated our design proposal as per the information, drawings and specification provided. Please check to confirm that all the details within are correct taking into consideration the room dimensions and specification of the luminaires used as the information provided may not be precise. Areas are assumed to be 'Open areas' without any obstructions. All calculations have been based on rated lumen outputs and photometric data supplied by manufacturers.

We have used common design parameters in our calculations as follows; ceiling heights at 2.8m, reflection factors room surfaces at 70/50/20 and, a maintenance factor of 0.8mf, unless details were provided to state otherwise. If any of the above are not acceptable, please contact us to enable re-calculations to be carried out prior to proceeding. The following values within are based on exact calculations on calibrated lamps, luminaires and their arrangement. In practice, gradual divergences can occur.

Emergency Lighting;

To ensure our emergency lighting proposal meets your specification we require your full risk assessment for the premises, identifying and highlighting the requirements for your emergency lighting as set out in the latest BS5266 guidelines. The final responsibility for emergency lighting is with the 'responsible person' for the premises concerned. Please ensure our proposal for emergency lighting is checked and confirmed with a local building-fire/control officer and ultimately by the 'responsible person' of the premises. Please identify and advise of any changes that may be required.

Please be aware of the L1 and L2 building requirements and check that conformity has been met as required by building control and any other relevant parties Prior to ordering any luminaires.

Where applicable the designs conform to your requirements and written instructions of the CIBSE recommendations. If conformity to any specific CIBSE or EN12464 guideline is required this must be specified and we may need to add or change the luminaire types or quantities. Illuminance levels and uniformity are shown for your approval. Luminaire types are also shown for approval, please ensure these are suitable for your requirements.

Whilst every effort will be made by Rexel UK to adhere to the written or product specification provided, it is always the responsibility of the customer to ensure that any design scheme, specification or product supplied satisfies fully and, complies with, the end users requirements.

The following values are based on precise calculations performed on calibrated lamps and luminaires, and their configurations, whereby gradual, unavoidable deviations can occur in practice. All guarantee claims are excluded for the specified data.

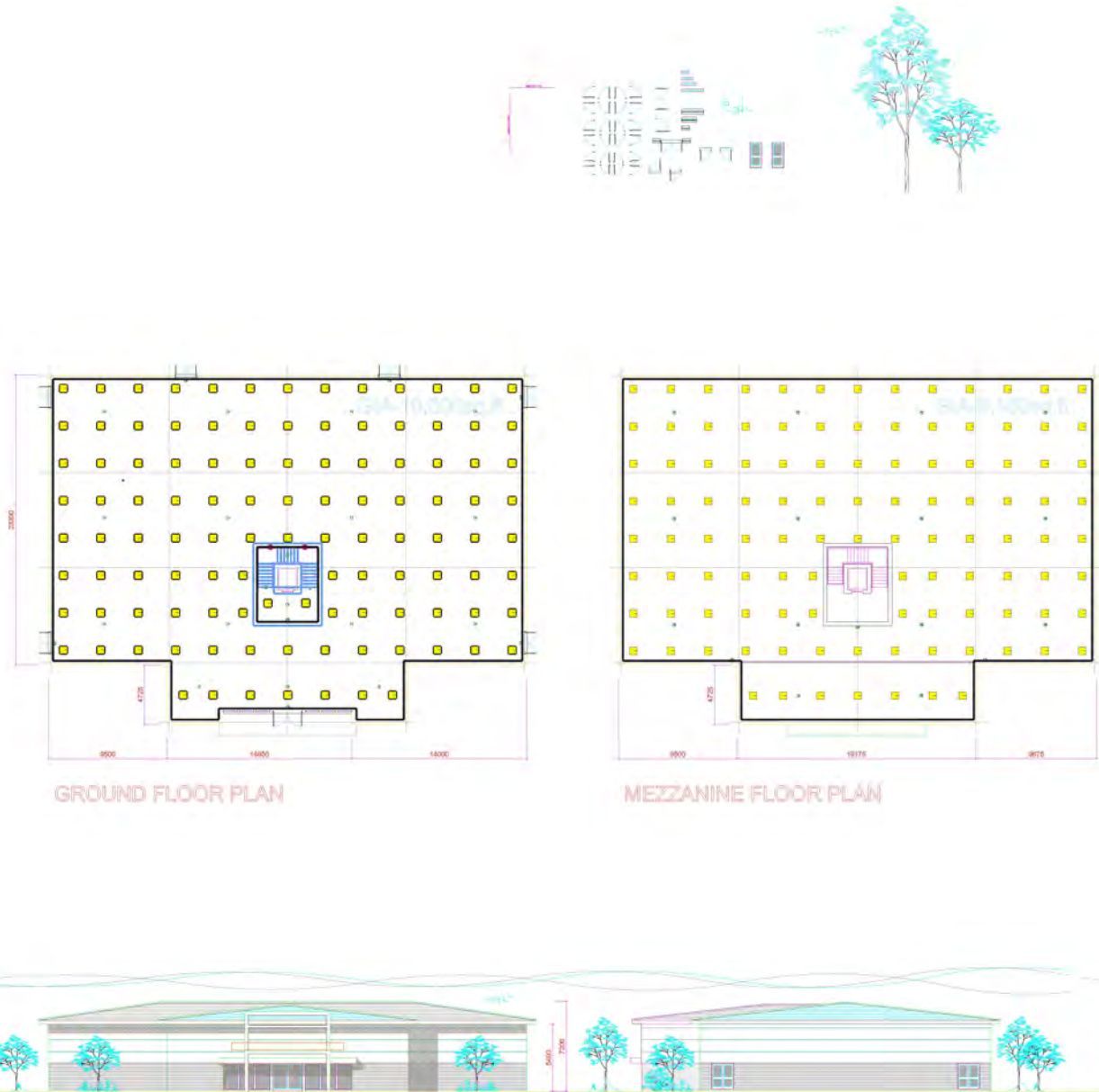
This exclusion of liability applies irrespective of the legal grounds for both damages and consequential damages suffered by users and third parties.

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Description, Floor 1

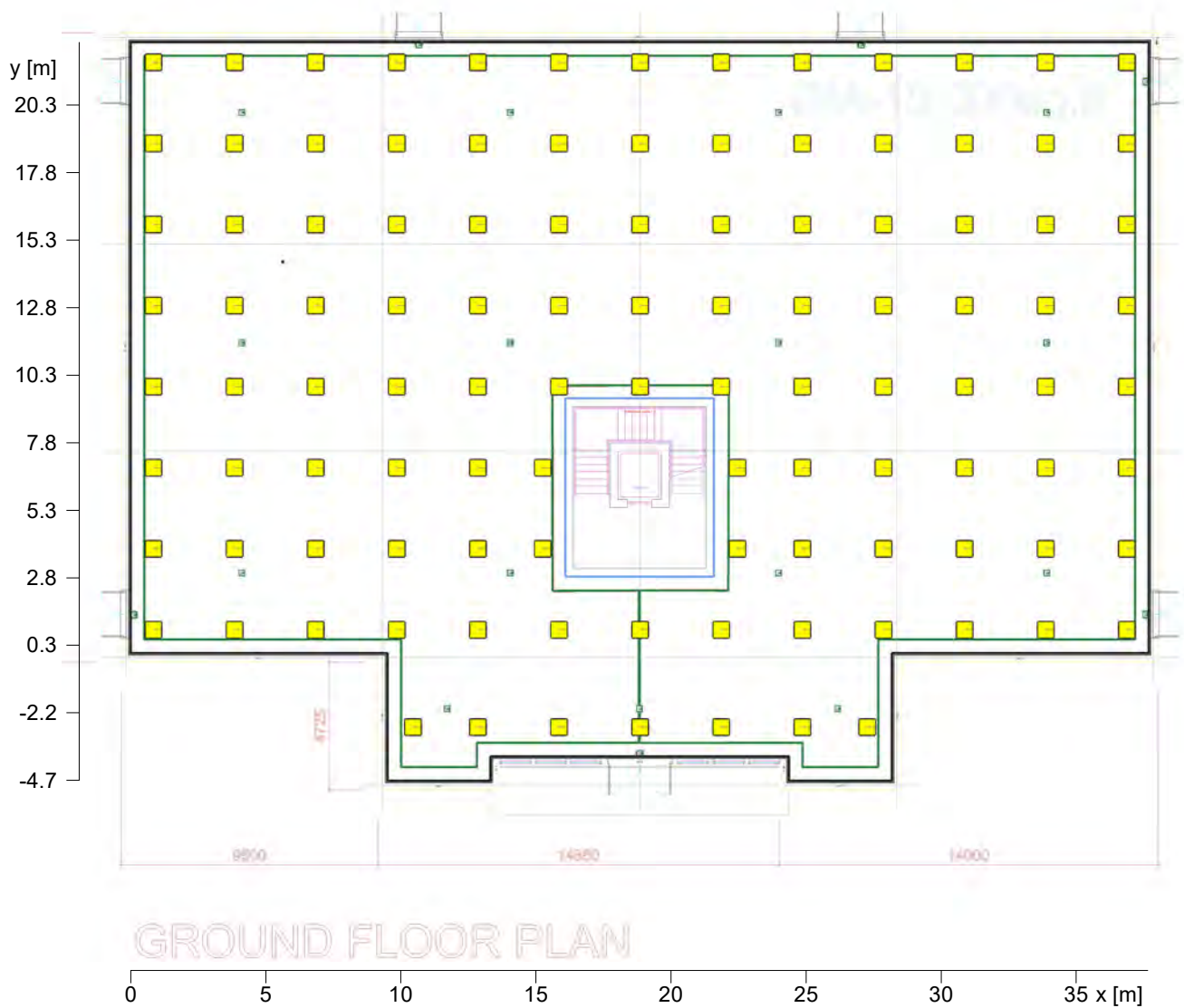
.1 Floor plan



1 Ground Floor

1.1 Description, Ground Floor

1.1.1 Floor plan



Object : Reading Link Retail Park Gym
 Installation : Interior _Exterior
 Project number : LDS180823
 Date : 18.08.2023

1 Ground Floor

1.1 Description, Ground Floor

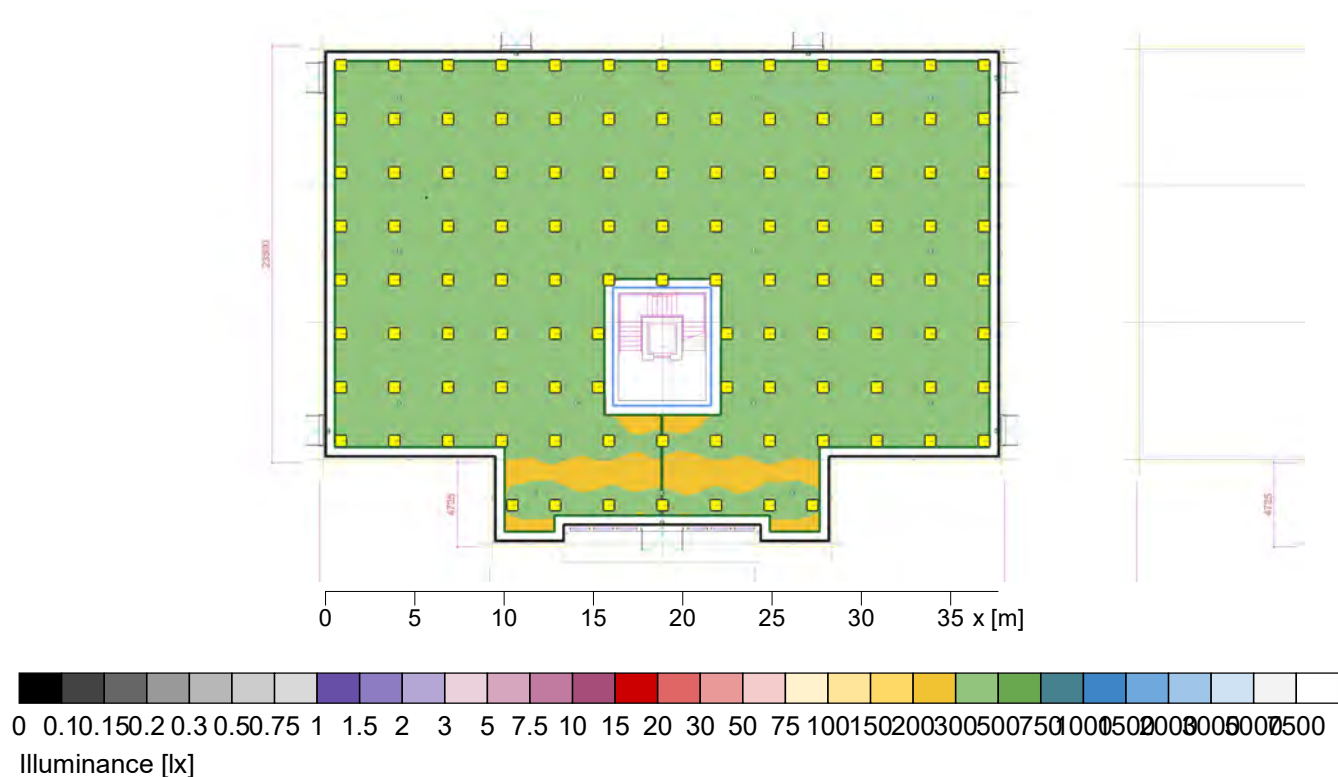
1.1.1 Floor plan

Wall	x	y	Length	Reflectance
1	315.11 m	160.06 m	9.50 m	50.0 %
2	315.11 m	155.34 m	4.72 m	50.0 %
3	318.91 m	155.34 m	3.80 m	50.0 %
4	318.91 m	156.24 m	0.90 m	50.0 %
5	329.96 m	156.24 m	11.05 m	50.0 %
6	329.96 m	155.34 m	0.90 m	50.0 %
7	333.76 m	155.34 m	3.80 m	50.0 %
8	333.76 m	160.06 m	4.72 m	50.0 %
9	343.26 m	160.06 m	9.50 m	50.0 %
10	343.26 m	182.66 m	22.60 m	50.0 %
11	305.61 m	182.66 m	37.65 m	50.0 %
12	305.61 m	160.06 m	22.60 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.50 m		
Height of ref. plane		0.00 m		

1 Ground Floor

1.2 Summary, Ground Floor

1.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Maintenance factor

Average indirect fraction
 0.85

Total luminous flux

381500.00 lm

Total power

3161.0 W

Total power per area (929.07 m²)

3.40 W/m² (0.93 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$

Horizontal
 367 lx

cylindrical
 177 lx

E_{min}

265 lx

104 lx

$E_{min}/\bar{E}_m (U_o)$

0.72

0.59

$E_{min}/E_{max} (U_d)$

0.60

E_z/E_h

0.46

Position

0.00 m

1.60 m

RUG (12.0H 8.0H)

<=19.0

Luminaire :

(Luceco - Luxpanel Backlit Eco, EBP66L35N)

Hints:

- At least one of the room dimensions has been limited to 12H.

Major surfaces

$\bar{E}_m$

U_o

Type No.Make

Object : Reading Link Retail Park Gym
Installation : Interior _Exterior
Project number : LDS180823
Date : 18.08.2023

1 Ground Floor

1.2 Summary, Ground Floor

1.2.1 Result overview, Evaluation area 1

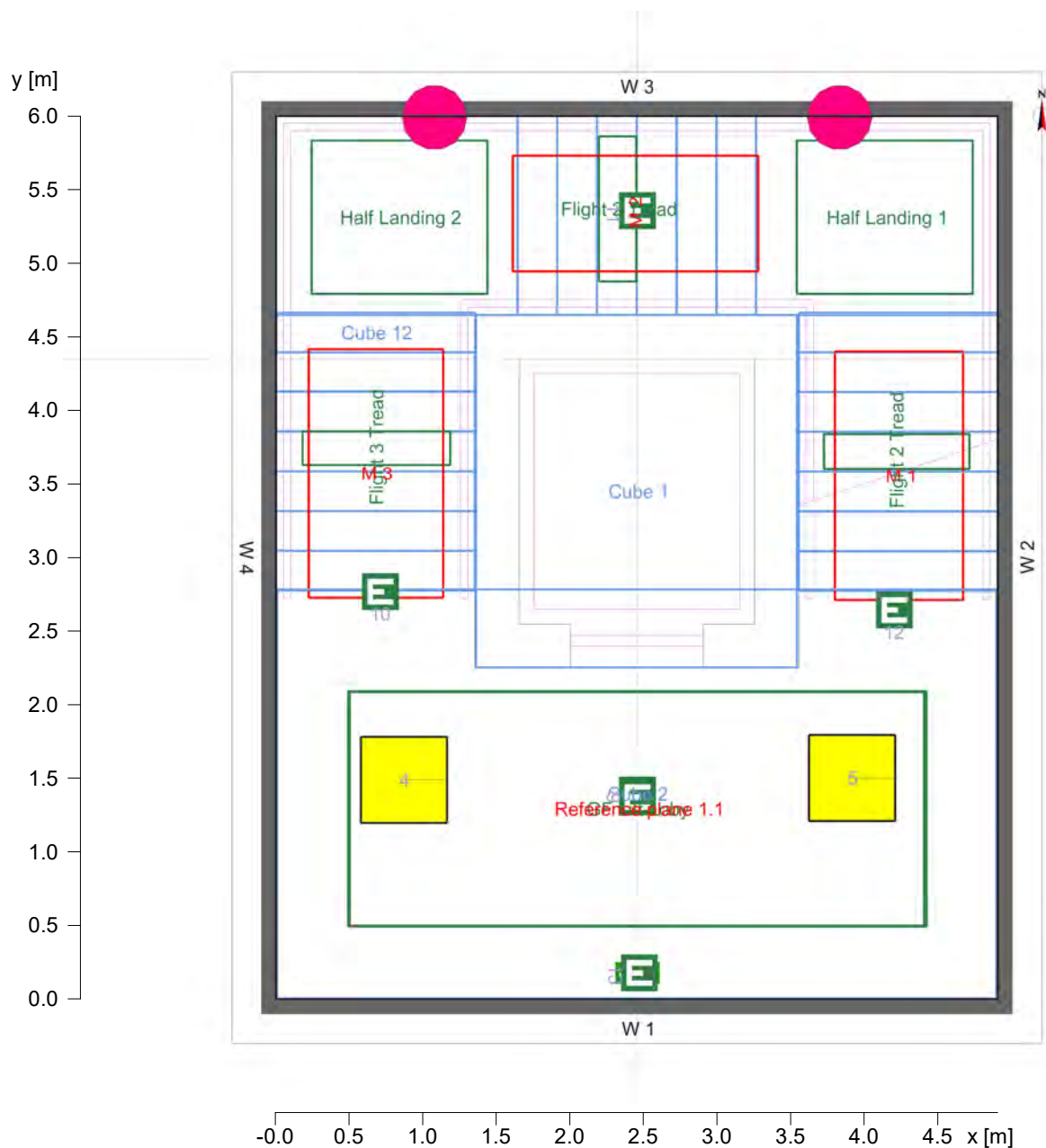
1	109 x	Luceco PLC	
		Order No.	: EBP66L35N
		Luminaire name	: Luceco - Luxpanel Backlit Eco
		Equipment	: 1 x LED 29 W / 3500 lm



2 Stair Core

2.1 Description, Stair Core

2.1.1 Floor plan

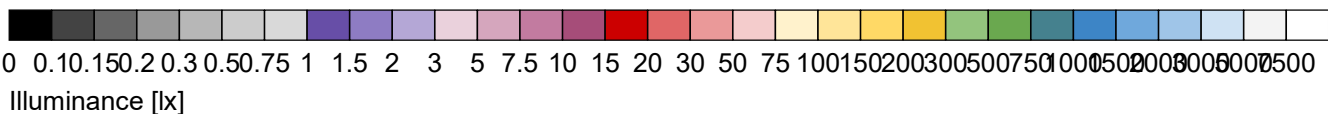
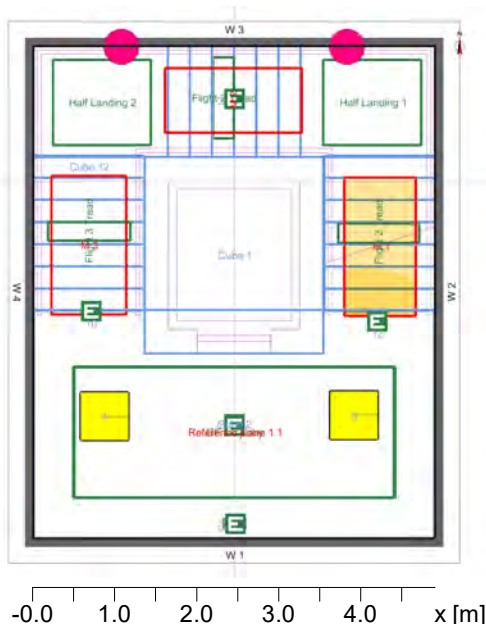


Wall	x	y	Length	Reflectance
1	326.89 m	163.19 m	4.90 m	50.0 %
2	326.89 m	169.19 m	6.00 m	50.0 %
3	321.99 m	169.19 m	4.90 m	50.0 %
4	321.99 m	163.19 m	6.00 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		5.80 m		
Height of ref. plane		0.00 m		

2 Stair Core

2.2 Summary, Stair Core

2.2.1 Result overview, Measuring area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.85
Total luminous flux	19000 lm
Total power	153 W
Total power per area (29.40 m²)	5.20 W/m²

Illuminance

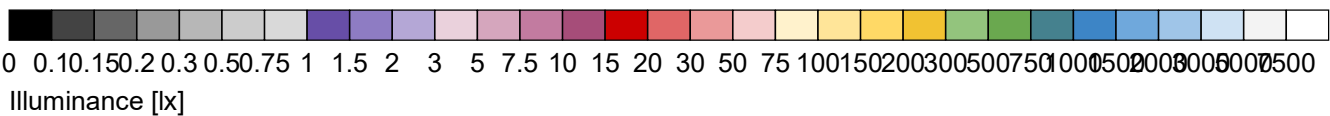
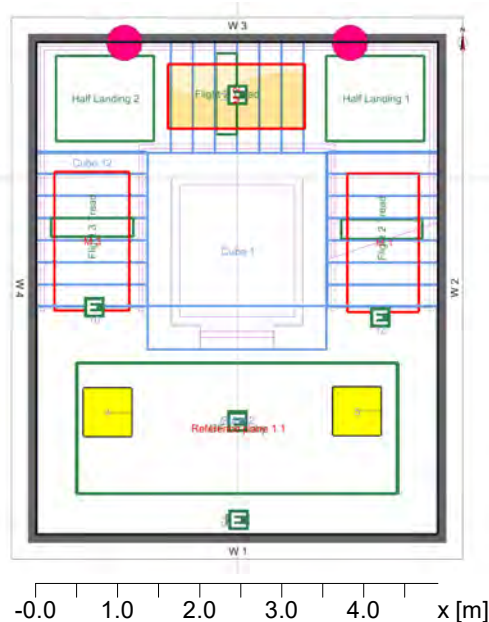
Average illuminance	$\bar{E}_m$	145 lx
Minimum illuminance	E_{min}	108 lx
Maximum illuminance	E_{max}	202 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.34 (0.74)
Diversity U_d	E_{min}/E_{max}	1:1.88 (0.53)

Type No. Make

1	4 x	Luceco PLC	
		Order No.	: EBP66L35N
		Luminaire name	: Luceco - Luxpanel Backlit Eco
		Equipment	: 1 x LED 29 W / 3500 lm
2	2 x	Luceco	
		Order No.	: LBC22S40-02
		Luminaire name	: Celeste Decorative Bulkhead 18.5W Standard
		Equipment	: 1 x LED 18.5 W / 2500 lm

2.2 Summary, Stair Core

2.2.2 Result overview, Measuring area 2



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.85
Total luminous flux	19000 lm
Total power	153 W
Total power per area (29.40 m²)	5.20 W/m²

Illuminance

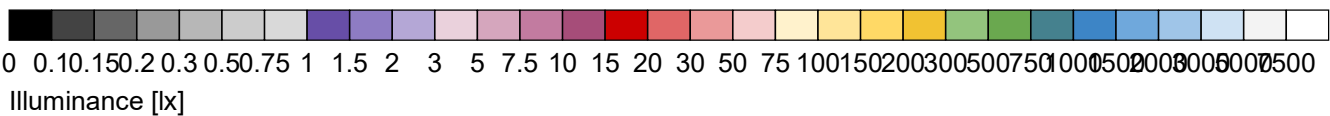
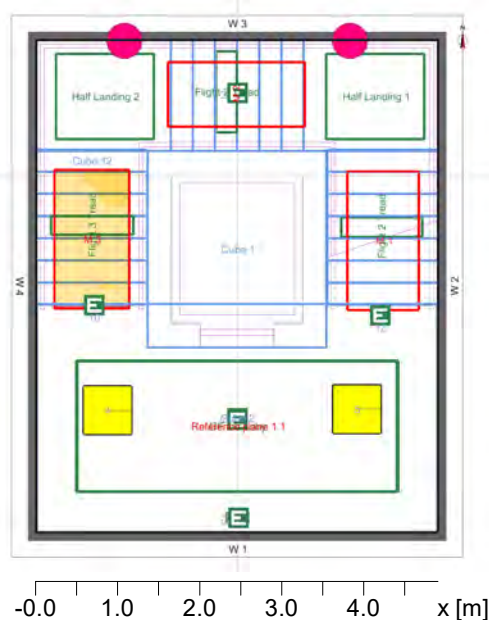
Average illuminance	$\bar{E}_m$	110 lx
Minimum illuminance	E_{min}	79 lx
Maximum illuminance	E_{max}	139 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.4 (0.71)
Diversity U_d	E_{min}/E_{max}	1:1.77 (0.57)

Type No. Make

1	4 x	Luceco PLC	
		Order No.	: EBP66L35N
		Luminaire name	: Luceco - Luxpanel Backlit Eco
		Equipment	: 1 x LED 29 W / 3500 lm
2	2 x	Luceco	
		Order No.	: LBC22S40-02
		Luminaire name	: Celeste Decorative Bulkhead 18.5W Standard
		Equipment	: 1 x LED 18.5 W / 2500 lm

2.2 Summary, Stair Core

2.2.3 Result overview, Measuring area 3



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.85
Total luminous flux	19000 lm
Total power	153 W
Total power per area (29.40 m²)	5.20 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	140 lx
Minimum illuminance	E_{min}	110 lx
Maximum illuminance	E_{max}	155 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.27 (0.79)
Diversity U_d	E_{min}/E_{max}	1:1.4 (0.71)

Type No.Make

1	4 x	Luceco PLC	
		Order No.	: EBP66L35N
		Luminaire name	: Luceco - Luxpanel Backlit Eco
		Equipment	: 1 x LED 29 W / 3500 lm
2	2 x	Luceco	
		Order No.	: LBC22S40-02
		Luminaire name	: Celeste Decorative Bulkhead 18.5W Standard
		Equipment	: 1 x LED 18.5 W / 2500 lm

2.2 Summary, Stair Core

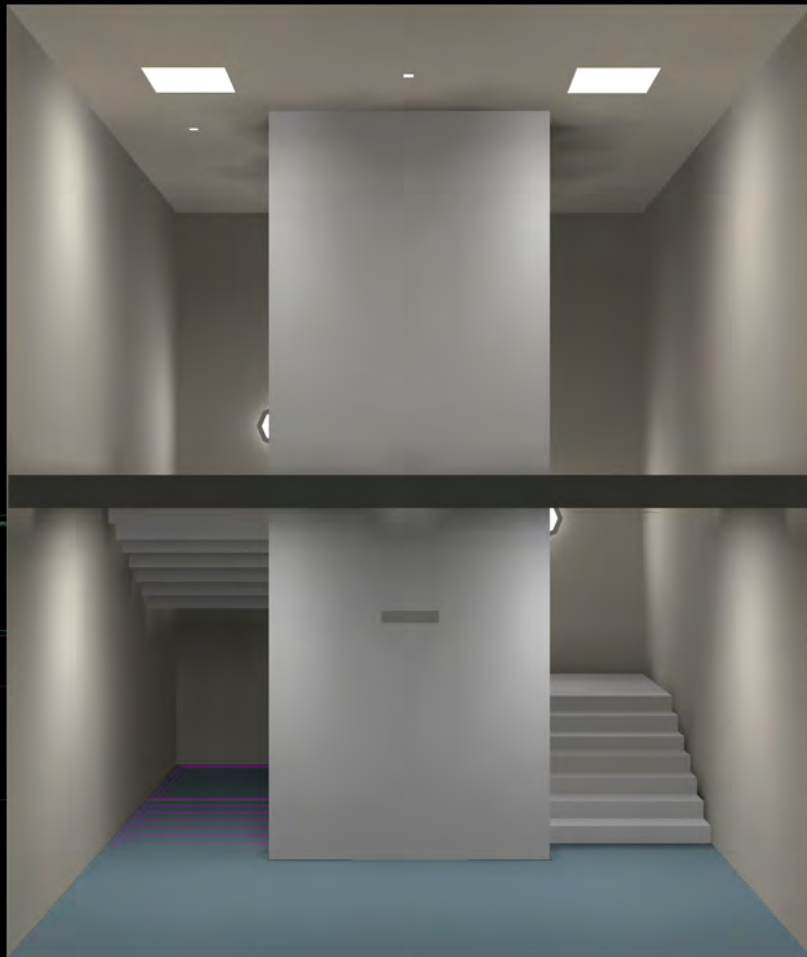
2.2.4 Result overview, Evaluation area 1

1	4 x		Luceco PLC	Order No.	: EBP66L35N
			Luminaire name	: Luceco - Luxpanel Backlit Eco	
			Equipment	: 1 x LED 29 W / 3500 lm	
2	2 x		Luceco	Order No.	: LBC22S40-02
			Luminaire name	: Celeste Decorative Bulkhead 18.5W Standard	
			Equipment	: 1 x LED 18.5 W / 2500 lm	

2 Stair Core

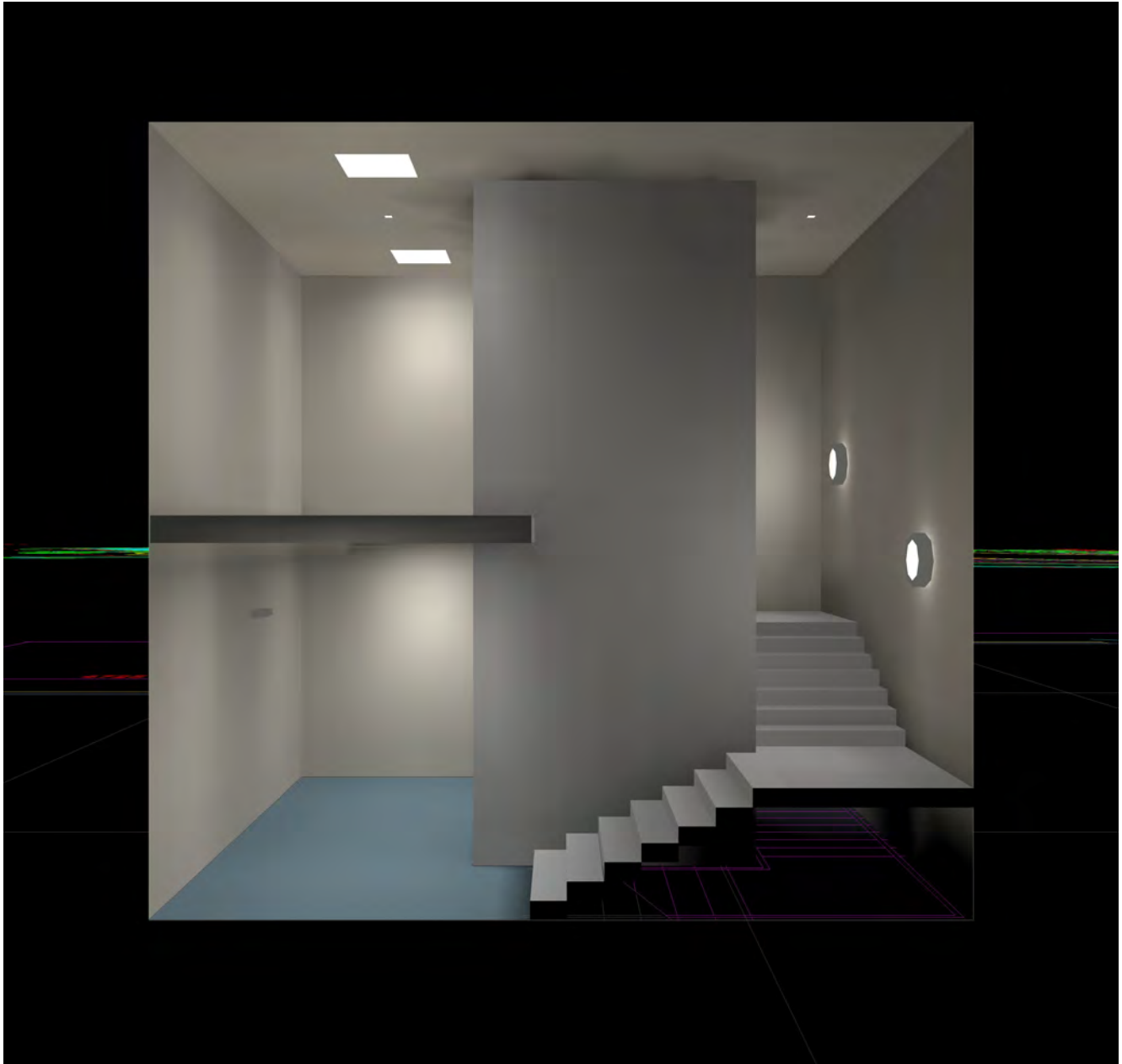
2.3 Calculation results, Stair Core

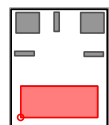
2.3.1 3D luminance, View from the front



2.3 Calculation results, Stair Core

2.3.2 3D luminance, View from the right





2 Stair Core

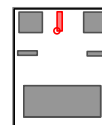
2.4 Summary, Stair Core

2.4.1.1 Result overview (emergency lighting)

2 Flight 2 Tread

Calculation field: 0.25m x 0.99m (3 x 13 pts), Height = 1.53m

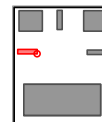
4	3.01 lx	3.11 lx	1: 1.03
	>= 1 lx		<= 1 : 40



4 Flight 3 Tread

Calculation field: 0.23m x 1m (3 x 14 pts), Height = 2.35m

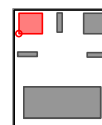
5	4.01 lx	4.31 lx	1: 1.07
	>= 1 lx		<= 1 : 40



5 Half Landing 2

Calculation field: 1.19m x 1.04m (5 x 5 pts), Height = 1.93m

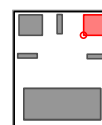
6	3.31 lx	5.74 lx	1: 1.74
	>= 1 lx		<= 1 : 40



6 Half Landing 1

Calculation field: 1.19m x 1.04m (5 x 5 pts), Height = 0.96m

7	5.82 lx	9.78 lx	1: 1.68
	>= 1 lx		<= 1 : 40



Type No. Make

3 5 x NVC LIGHTING LTD



Order No.	: !NSC3/REC/STNM3/OVAL	-- Emergency Lighting --
Luminaire name	: SENECA RECESSED SELF TEST NM3 OVAL LENS	
Equipment	: 1 x LED EMERGENCY MODULE 0.8 W / 209 lm (0%)	
Emergency	: 209 lm	

5 1 x NVC Lighting

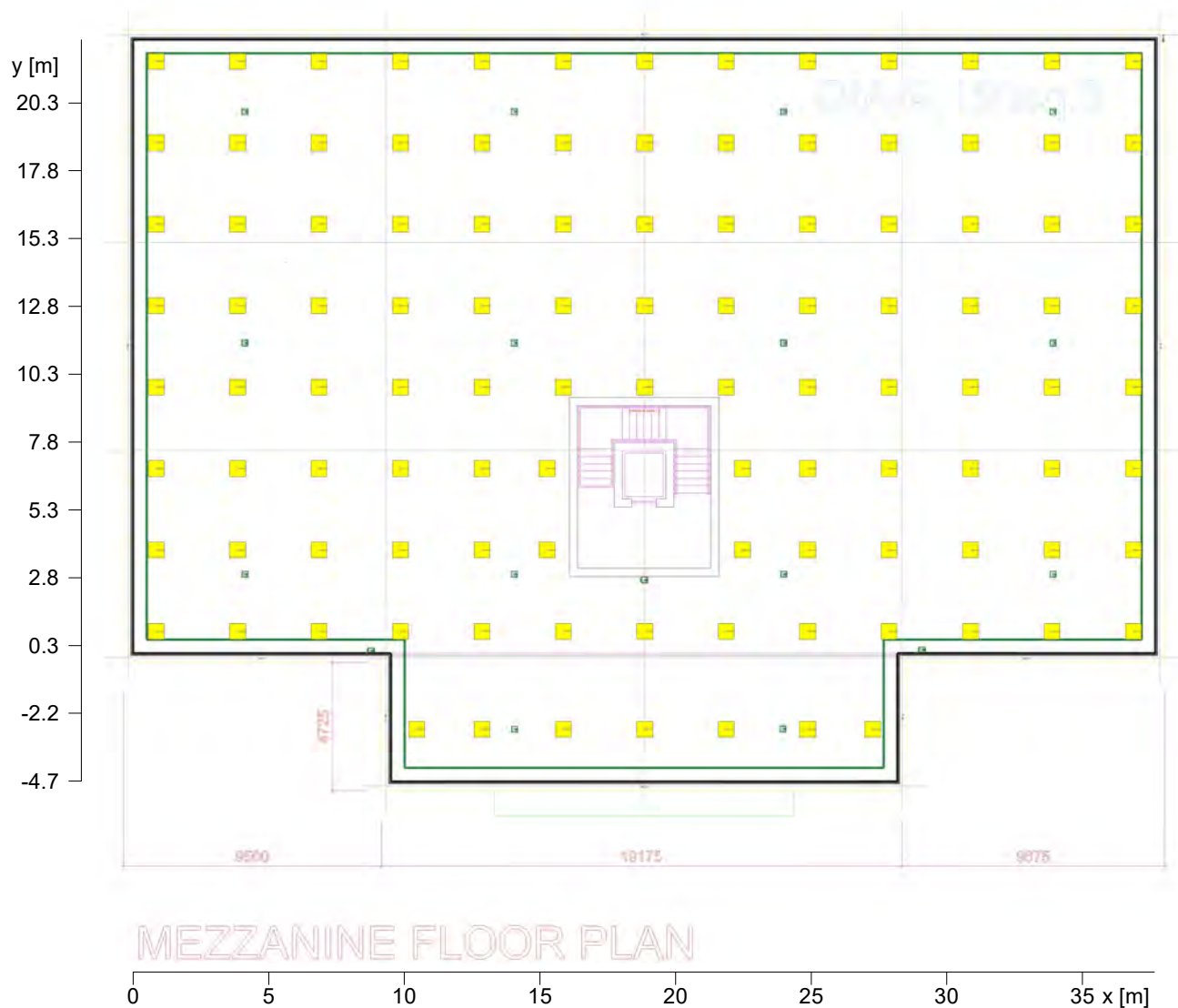


Order No.	: !NLE/SLIM/STM3 + NLE/SLIM/LE/UP	-- Emergency Lighting --
Luminaire name	: LEXINGTON SLIM PRO SELF TEST ISO UP	
Equipment	: 1 x LED 2.1 2.1 W / 195 lm (0%)	
Emergency	: 1 lm	

3 First Floor

3.1 Description, First Floor

3.1.1 Floor plan

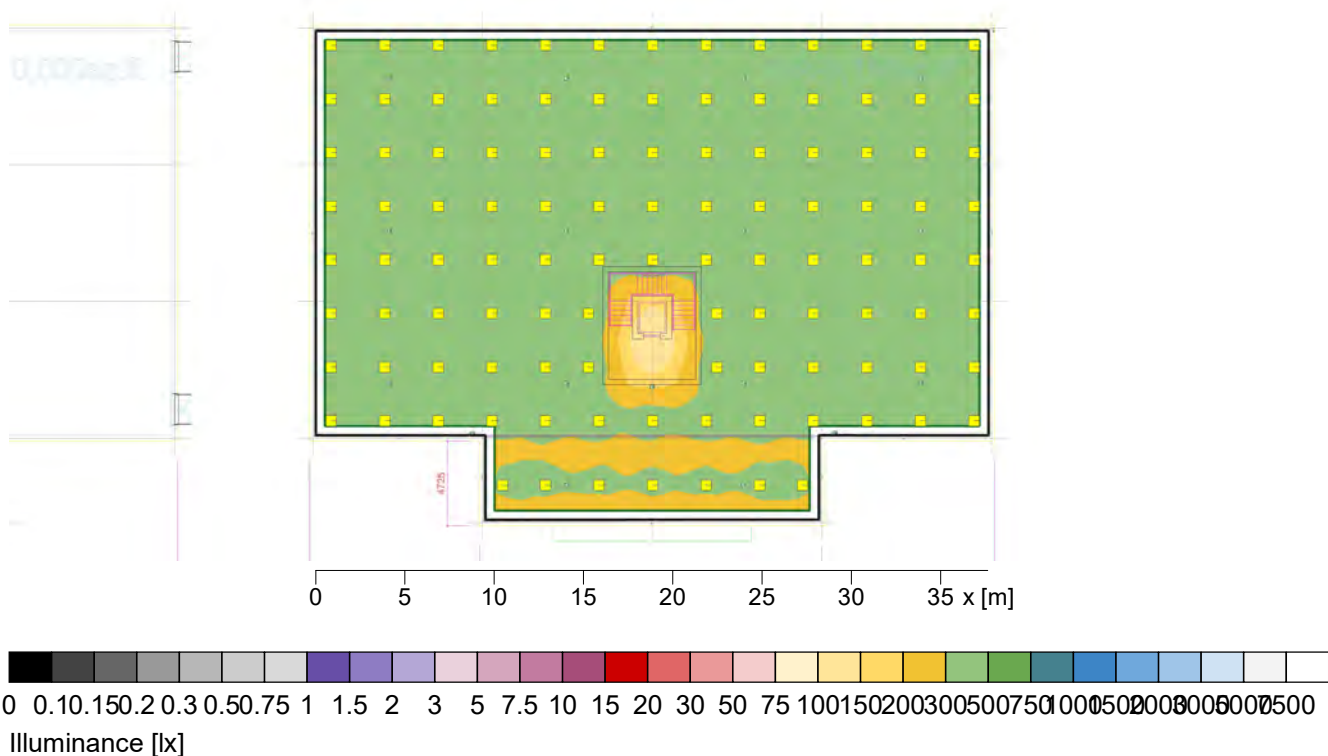


Wall	x	y	Length	Reflectance
1	360.84 m	160.06 m	9.50 m	50.0 %
2	360.84 m	155.33 m	4.73 m	50.0 %
3	379.49 m	155.34 m	18.65 m	50.0 %
4	379.49 m	160.06 m	4.72 m	50.0 %
5	388.99 m	160.06 m	9.50 m	50.0 %
6	388.99 m	182.66 m	22.60 m	50.0 %
7	351.34 m	182.66 m	37.65 m	50.0 %
8	351.34 m	160.06 m	22.60 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.80 m		
Height of ref. plane		0.00 m		

3 First Floor

3.2 Summary, First Floor

3.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Maintenance factor

Average indirect fraction
 0.85

Total luminous flux

381500.00 lm

Total power

3161.0 W

Total power per area (939.02 m²)

3.37 W/m² (0.93 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$

Horizontal

cylindrical

E_{min}

360 lx

174 lx

E_{min}

126 lx

78 lx

$E_{min}/\bar{E}_m (U_o)$

0.35

0.45

$E_{min}/E_{max} (U_d)$

0.29

E_z/E_h

0.46

Position

0.00 m

1.60 m

RUG (12.0H 8.0H)

<=19.0

Luminaire :
 (Luceco - Luxpanel Backlit Eco, EBP66L35N)

Hints:

- At least one of the room dimensions has been limited to 12H.

Major surfaces

$\bar{E}_m$

U_o

Type No.Make

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3 First Floor

3.2 Summary, First Floor

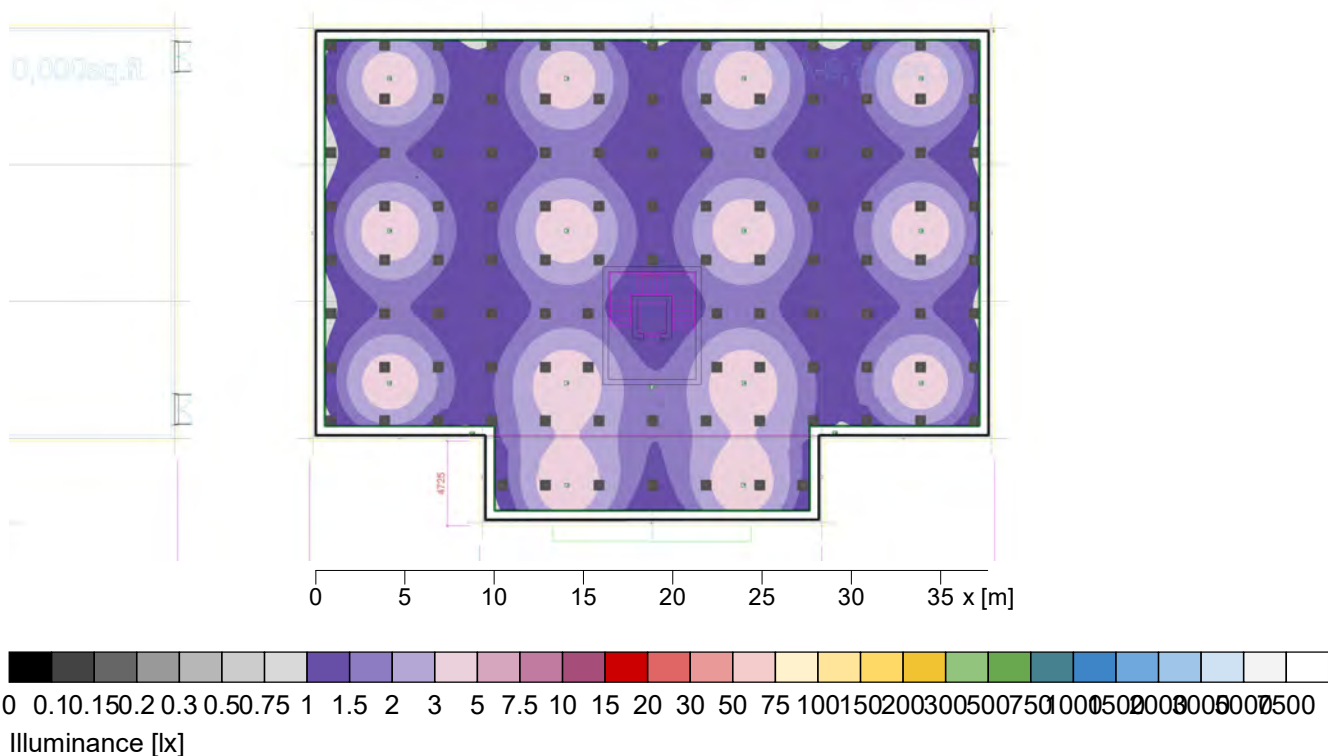
3.2.1 Result overview, Evaluation area 1

		Luceco PLC	
1	109 x	Order No.	: EBP66L35N
		Luminaire name	: Luceco - Luxpanel Backlit Eco
		Equipment	: 1 x LED 29 W / 3500 lm

3 First Floor

3.3 Summary, First Floor

3.3.1.1 Result overview (emergency lighting)

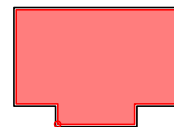


General

Calculation algorithm used : Direct component
 Maintenance factor : 0.8
 Height (phot centre) : -variable-
 Maximum I : 42 cd

Anti panic area:

No.	Surface	Emin [lx]	Emax [lx]	Ud
1	Anti panic area 1.1	0.76 lx	4.93 lx	1: 6.49
		>= 0.5 lx		<= 1 : 40



Type No. Make

NVC LIGHTING LTD
 4 14 x

 Order No. : NSC/REC/STNM3/WIDE -- Emergency Lighting --
 Luminaire name : SENECA RECESSED SELF TEST NM3 WIDE LENS
 Equipment : 1 x LED 3hr EMERGENCY 0.8 W / 209 lm (0%)
 Emergency : 209 lm

NVC Lighting
 5 1 x

 Order No. : !NLE/SLIM/STM3 + NLE/SLIM/LE/UP -- Emergency Lighting --
 Luminaire name : LEXINGTON SLIM PRO SELF TEST ISO UP
 Equipment : 1 x LED 2.1 2.1 W / 195 lm (0%)
 Emergency : 1 lm

3 First Floor

3.3 Summary, First Floor

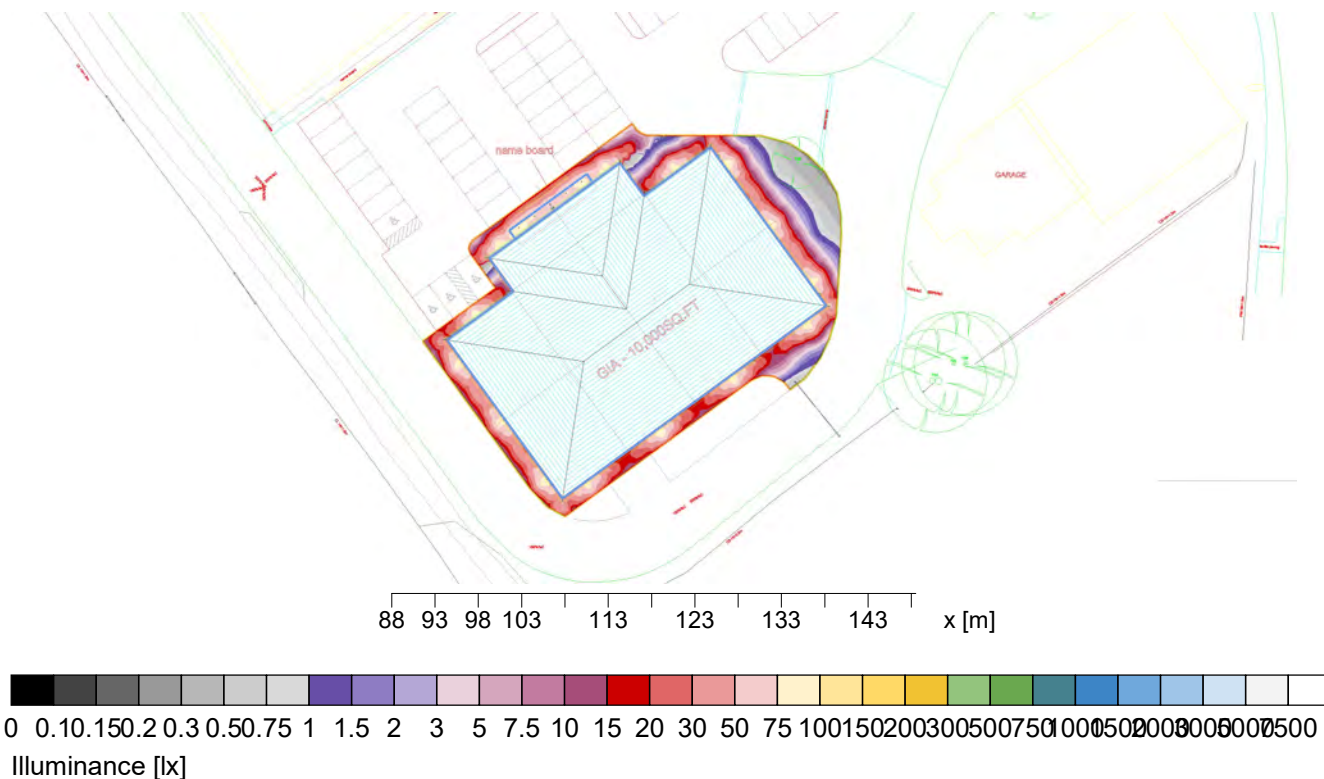
3.3.1.1 Result overview (emergency lighting)

6	1 x	Order No.	: !NLE/SLIM/STM3 + NLE/SLIM/LE/LEFT	-- Emergency Lighting --
		Luminaire name	: LEXINGTON SLIM PRO SELF TEST ISO LEFT	
		Equipment	: 1 x LED 2.1 2.1 W / 195 lm (0%)	
		Emergency	: 1 lm	
7	1 x	Order No.	: !NLE/SLIM/STM3 + NLE/SLIM/LE/RIGHT	-- Emergency Lighting --
		Luminaire name	: Emergency sign right	
		Equipment	: 1 x LED 2.1 2.1 W / 195 lm (0%)	
		Emergency	: 1 lm	

1 Exterior 1

1.1 Summary, Exterior 1

1.1.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Maintenance factor

Average indirect fraction
 0.85

Total luminous flux

21200.00 lm

Total power

233.0 W

Total power per area (1368.98 m²)

0.17 W/m² (0.65 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

Horizontal
 $\bar{E}_m$ 26.2 lx
 E_{min} 0.3 lx
 $E_{min}/\bar{E}_m (U_o)$ 0.01
 $E_{min}/E_{max} (U_d)$ 0.00
 Position 0.00 m

Type No.\Make

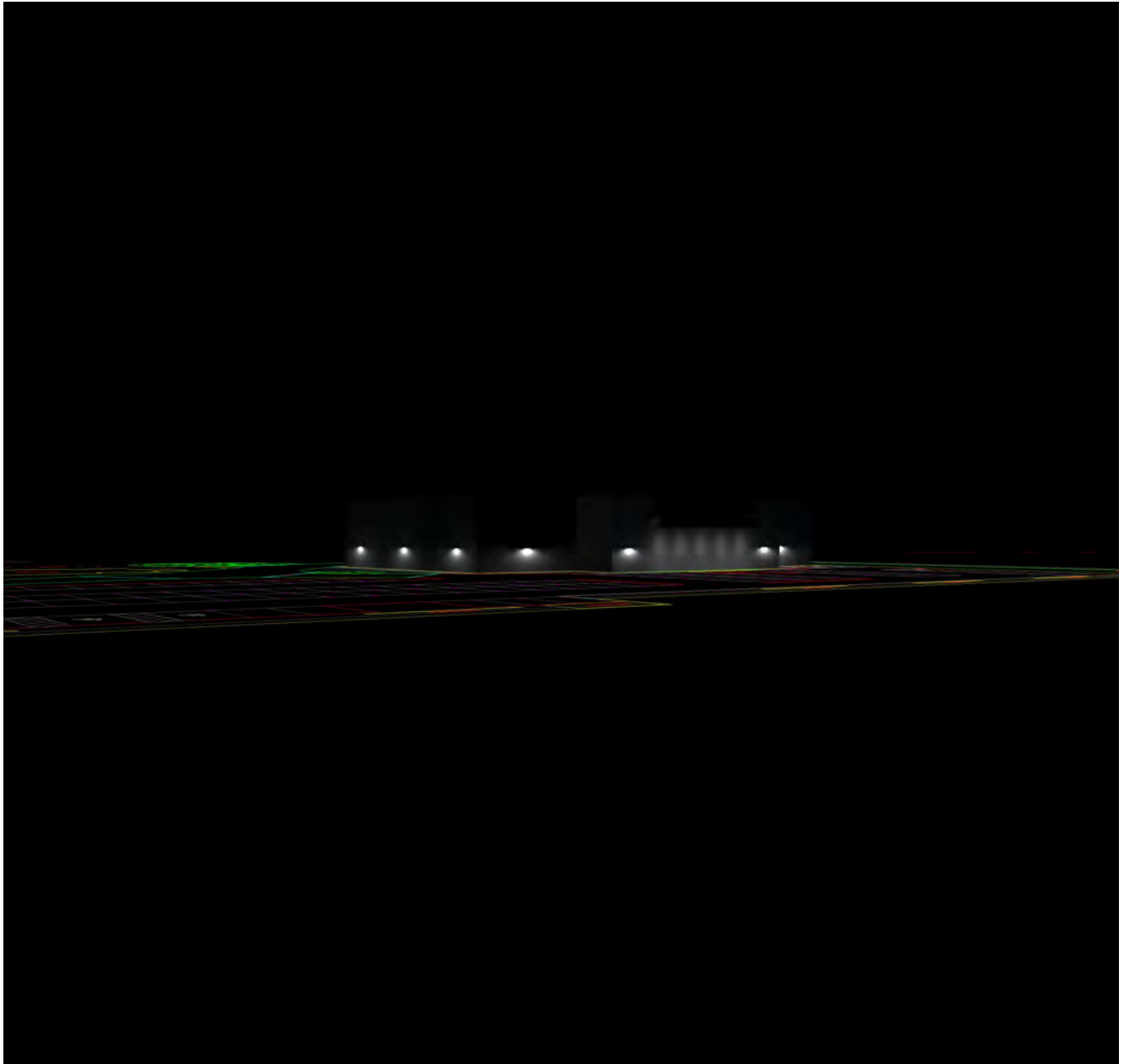
Kingfisher Lighting Ltd
 8 14 x
 Order No. : 15w LED Quarto bulkhead with cycle path optic
 Luminaire name : LED Quarto
 Equipment : 1 x 9 LED (15w) 15 W / 1350 lm

Collingwood
 9 5 x
 Order No. : DL48938MW30-A
 Luminaire name : DL48938MW30
 Equipment : 1 x LED 4.6 W / 460 lm

1 Exterior 1

1.2 Calculation results, Exterior 1

1.2.1 3D luminance, View from the back



1.2 Calculation results, Exterior 1

1.2.2 3D luminance, View from the left

