

Assentech - Trispen Project

Installation : Trispen Project

Project number : Assentech Rev2 Plans

Customer : Assentech

Processed by : Andy

Date : 14.06.2024

Project description:

Proposed areas to light to CIBSE Guidance documents

Scale based on office door 838mm FD30

Ceiling > FFL not provided . Based on Mounting Luminaires @ 2.4m from FFL

Em lighting requested in this Area unless below applies .

Confirmation of Surface or Recessed EM luminaires is required

EM Exit boxes and EM fittings Locations to be confirmed - Subject to below

EM lighting - interested parties to confirm meets requirement for sign off

No Exit Strategy Stated Therefore for Exit signage, and escape routes illumination and any points of emphasis, if allowed for, to be verified by others .

All calculations have been based on the information provided, plus any accompanying drawings and verbal information if received.

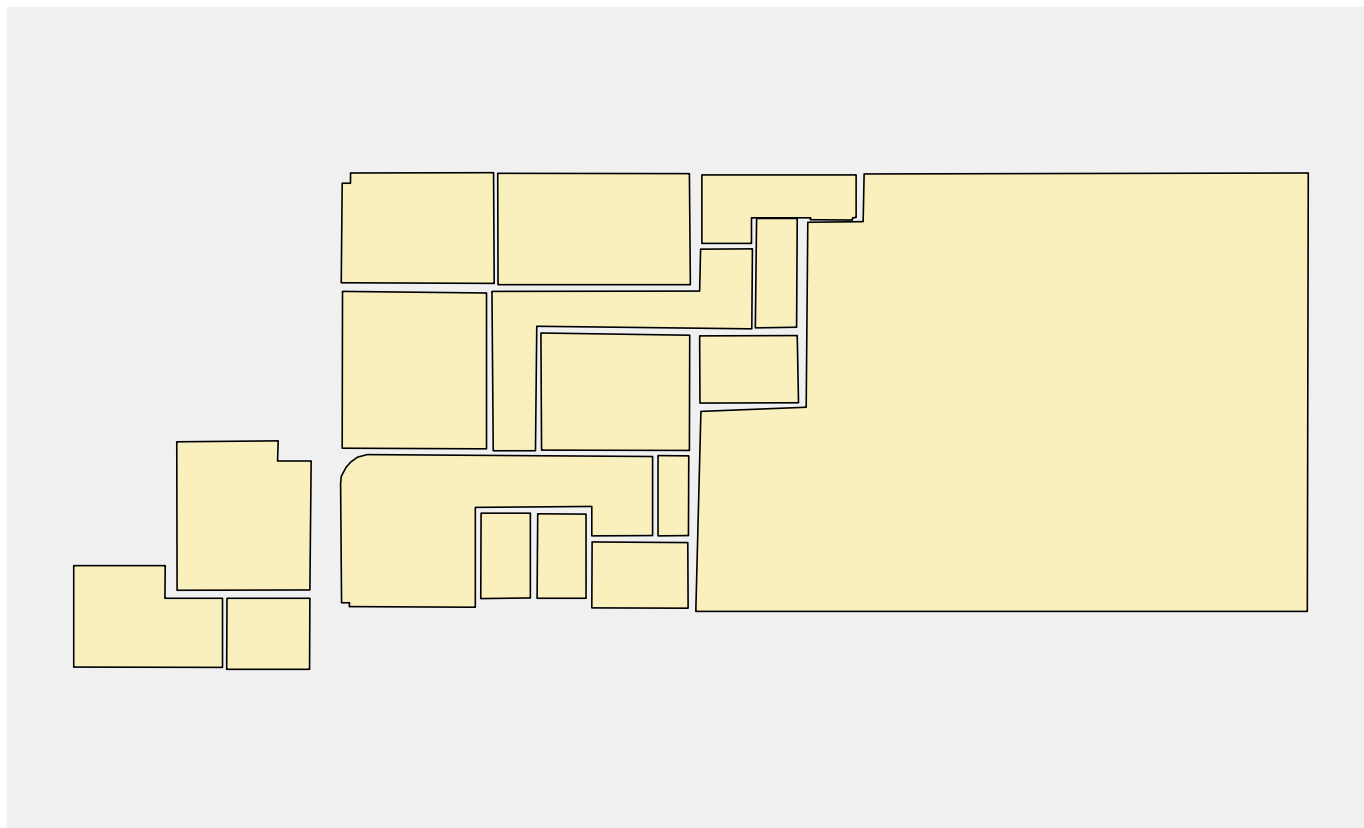
Emergency scheme (if Present) is to be checked and confirmed with local building or fire control officer and ultimately approved by the owner of the building. Any emergency calculations that have been completed, have been based on 0.5 lux for open areas and 1 lux for escape routes. In general information with regard to positioning of fire fighting and call points is unknown and hence the design does not consider this requirement. Emergency lighting for High Risk areas should be considered additional to this design.

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.

Summary, Floor 1

.1 Floor overview



Number of rooms	17	
Total area	344 m²	Calculated
Number of luminaires	59	
Total luminous flux	232728 lm	
Total power	1795 W	
Total power per area	5.21 W/m²	

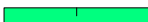
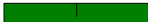
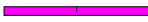
Parts list

Type No. Make

		JCC	
1	2 x	Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 25 W / 3300 lm
3	1 x	Order No.	: !EDT0032A
		Luminaire name	: Commercial Linear UGR19 4FT EM
		Equipment	: 1 x LED 24 W / 2780 lm
4	13 x	Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 22 W / 2780 lm

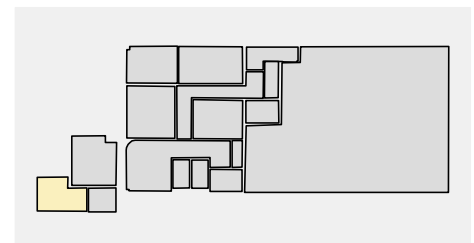
Summary, Floor 1

.1 Floor overview

5	6 x	Order No.	: IEDT0032A
		Luminaire name	: Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM
		Equipment	: 1 x LED 24 W / 2860 lm
6	3 x	Order No.	: IEDT0041A
		Luminaire name	: Commercial Linear UGR19 5FT
		Equipment	: 1 x LED 30 W / 4030 lm
7	1 x	Order No.	: IEDT0042A
		Luminaire name	: Commercial Linear UGR19 5FT 32W 3CCT Em
		Equipment	: 1 x LED 32 W / 4030 lm
8	1 x	Order No.	: IEDT0002A
		Luminaire name	: LED 4' Single IP20 Emergency
		Equipment	: 1 x LED 22 W / 2700 lm
9	8 x	Order No.	: IEDT007A5
		Luminaire name	: RadiaLED IP65 4000K 12W + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm
10	10 x	Order No.	: IEDT007A6
		Luminaire name	: RadiaLED IP65 4000K 12W Emergency + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm
13	4 x	Order No.	: IEDT0041A
		Luminaire name	: ToughLED™ Pro 1500mm 5ft Single IP66 4000K WOP
		Equipment	: 1 x LED 29 W / 3900 lm
14	3 x	Order No.	: IEDT0042A
		Luminaire name	: ToughLED™ Pro 1500mm 5ft Single IP66 4000K EM WOP
		Equipment	: 1 x LED 33 W / 3900 lm
15	3 x	Order No.	: IEDT0108A
		Luminaire name	: Toughbay 100W IP65 1-10V dimmable 120°
		Equipment	: 1 x LED 100 W / 14500 lm
16	4 x	Order No.	: IEDT0109
		Luminaire name	: Toughbay 104W IP65 1-10V dimmable 120° Emergency
		Equipment	: 1 x LED 104 W / 14500 lm

Rooms

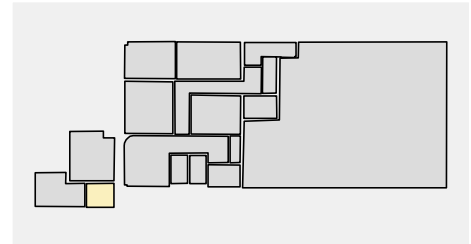
Office RG.02	3 x Luminaires
Total luminous flux	8340 lm
Total power	68 W
Total power per area (10 m²)	6.53 W/m²
$\bar{E}_m$	492 lx
E_{min}	401 lx
$E_{min}/\bar{E}_m (U_o)$	0.82
RUG	<=16.6



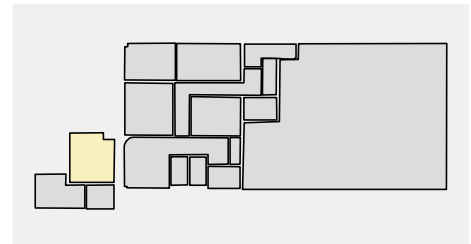
Summary, Floor 1

.1 Floor overview

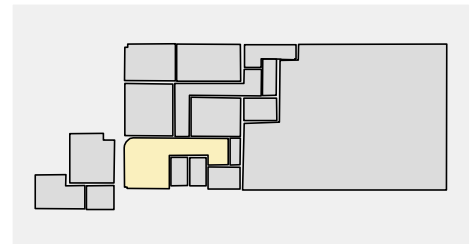
Lobby	1 x Luminaires
Total luminous flux	2700 lm
Total power	22 W
Total power per area (5 m²)	4.75 W/m²
$\bar{E}_m$	257 lx
E_{min}	200 lx
$E_{min}/\bar{E}_m (U_o)$	0.78
RUG	≤ 16.0



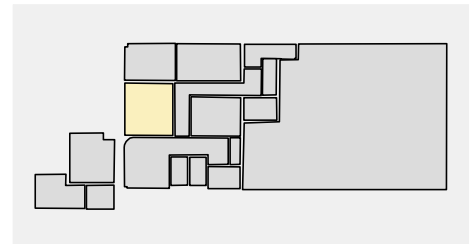
Office RG03	4 x Luminaires
Total luminous flux	11200 lm
Total power	90 W
Total power per area (15 m²)	5.96 W/m²
$\bar{E}_m$	515 lx
E_{min}	420 lx
$E_{min}/\bar{E}_m (U_o)$	0.81
RUG	≤ 17.2



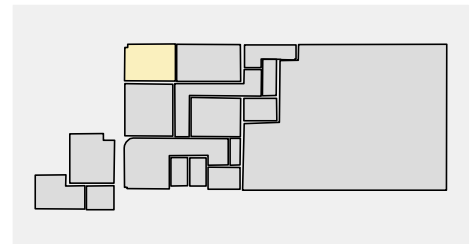
Entrance Lobby Reception	5 x Luminaires
Total luminous flux	14140 lm
Total power	116 W
Total power per area (24 m²)	4.77 W/m²
$\bar{E}_m$	358 lx
E_{min}	98 lx
$E_{min}/\bar{E}_m (U_o)$	0.27
RUG	---



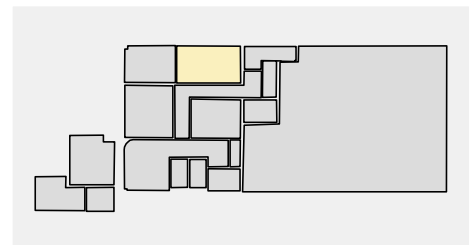
Office / Reception back office R4	4 x Luminaires
Total luminous flux	11200 lm
Total power	90 W
Total power per area (18 m²)	5.09 W/m²
$\bar{E}_m$	457 lx
E_{min}	420 lx
$E_{min}/\bar{E}_m (U_o)$	0.92
RUG	≤ 17.3



Office RG07	4 x Luminaires
Total luminous flux	11200 lm
Total power	90 W
Total power per area (13 m²)	6.86 W/m²
$\bar{E}_m$	543 lx
E_{min}	502 lx
$E_{min}/\bar{E}_m (U_o)$	0.92
RUG	≤ 16.8



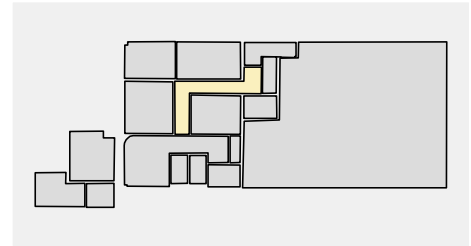
Sales/Showroom RG06	4 x Luminaires
Total luminous flux	16120 lm
Total power	122 W
Total power per area (17 m²)	7.29 W/m²
$\bar{E}_m$	652 lx
E_{min}	552 lx
$E_{min}/\bar{E}_m (U_o)$	0.85
RUG	≤ 17.6



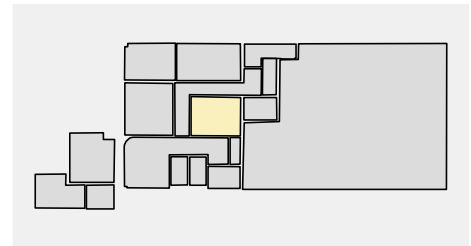
Summary, Floor 1

.1 Floor overview

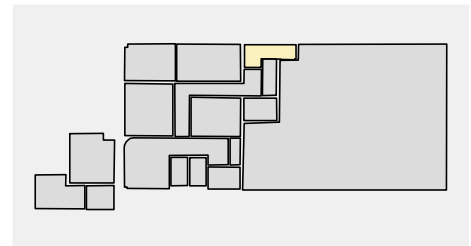
Corridor RG08	7 x Luminaires
Total luminous flux	8722 lm
Total power	84 W
Total power per area (13 m ²)	6.31 W/m ²
$\bar{E}_m$	236 lx
E_{min}	170 lx
$E_{min}/\bar{E}_m (U_o)$	0.72
RUG	---



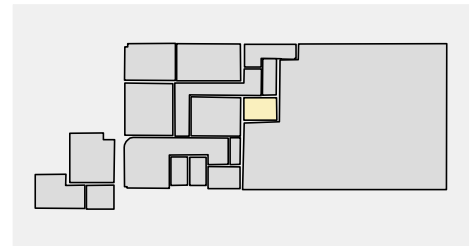
Staff Kitchen Welfare RG09	2 x Luminaires
Total luminous flux	6600 lm
Total power	50 W
Total power per area (13 m ²)	3.71 W/m ²
$\bar{E}_m$	396 lx
E_{min}	285 lx
$E_{min}/\bar{E}_m (U_o)$	0.72
RUG	<=17.3



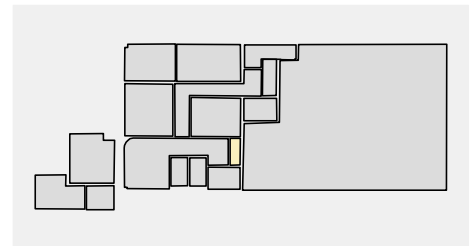
Lobby Rear RG15	3 x Luminaires
Total luminous flux	3738 lm
Total power	36 W
Total power per area (6 m ²)	5.76 W/m ²
$\bar{E}_m$	218 lx
E_{min}	128 lx
$E_{min}/\bar{E}_m (U_o)$	0.59
RUG	<=19.9



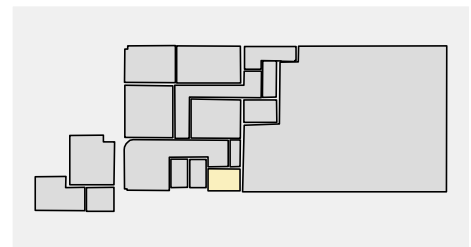
Service CPD RG15	1 x Luminaires
Total luminous flux	3900 lm
Total power	33 W
Total power per area (5 m ²)	6.38 W/m ²
$\bar{E}_m$	343 lx
E_{min}	270 lx
$E_{min}/\bar{E}_m (U_o)$	0.79
RUG	<=19.4



Cleaners CPD RG15	2 x Luminaires
Total luminous flux	2492 lm
Total power	24 W
Total power per area (2 m ²)	12.52 W/m ²
$\bar{E}_m$	264 lx
E_{min}	213 lx
$E_{min}/\bar{E}_m (U_o)$	0.81
RUG	10.0



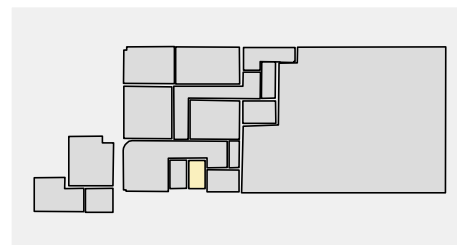
Accessible WC DG08	2 x Luminaires
Total luminous flux	2492 lm
Total power	24 W
Total power per area (5 m ²)	4.85 W/m ²
$\bar{E}_m$	206 lx
E_{min}	181 lx
$E_{min}/\bar{E}_m (U_o)$	0.88
RUG	<=18.1



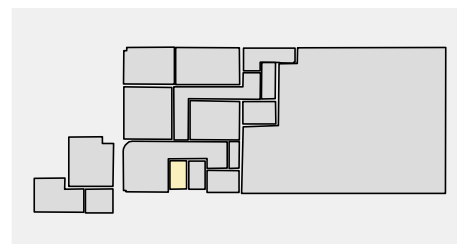
Summary, Floor 1

.1 Floor overview

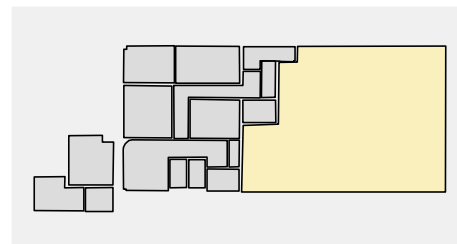
WC 1 RG15 DG07	1 x Luminaires
Total luminous flux	1246 lm
Total power	12 W
Total power per area (3 m ²)	3.71 W/m ²
$\bar{E}_m$	133 lx
E_{min}	98 lx
$E_{min}/\bar{E}_m (U_o)$	0.74
RUG	<=17.6



WC 2 RG15 DG06	1 x Luminaires
Total luminous flux	1246 lm
Total power	12 W
Total power per area (3 m ²)	3.63 W/m ²
$\bar{E}_m$	131 lx
E_{min}	95 lx
$E_{min}/\bar{E}_m (U_o)$	0.73
RUG	<=17.6



Open Plan Factory Floor / Mez R	13 x Luminaires
Total luminous flux	124900 lm
Total power	898 W
Total power per area (187 m ²)	4.80 W/m ²
$\bar{E}_m$	406 lx
E_{min}	144 lx
$E_{min}/\bar{E}_m (U_o)$	0.35
RUG	30.0



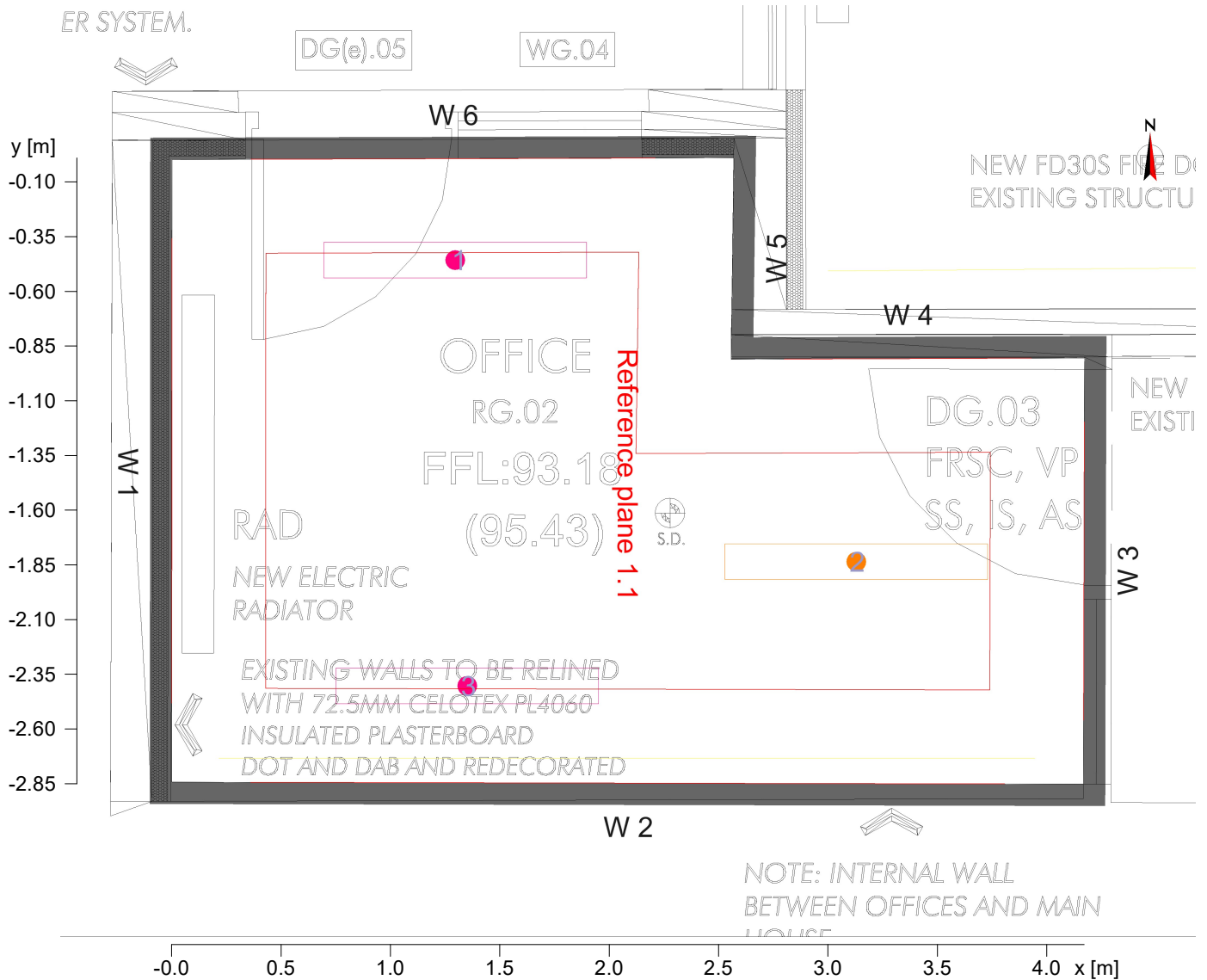
Stair to RG15 to FF	2 x Luminaires
Total luminous flux	2492 lm
Total power	24 W
Total power per area (4 m ²)	6.86 W/m ²
$\bar{E}_m$	211 lx
E_{min}	165 lx
$E_{min}/\bar{E}_m (U_o)$	0.78
RUG	<=18.7



1 Office RG.02

1.1 Description, Office RG.02

1.1.1 Floor plan

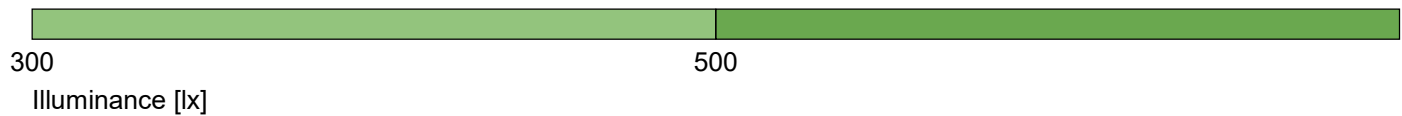
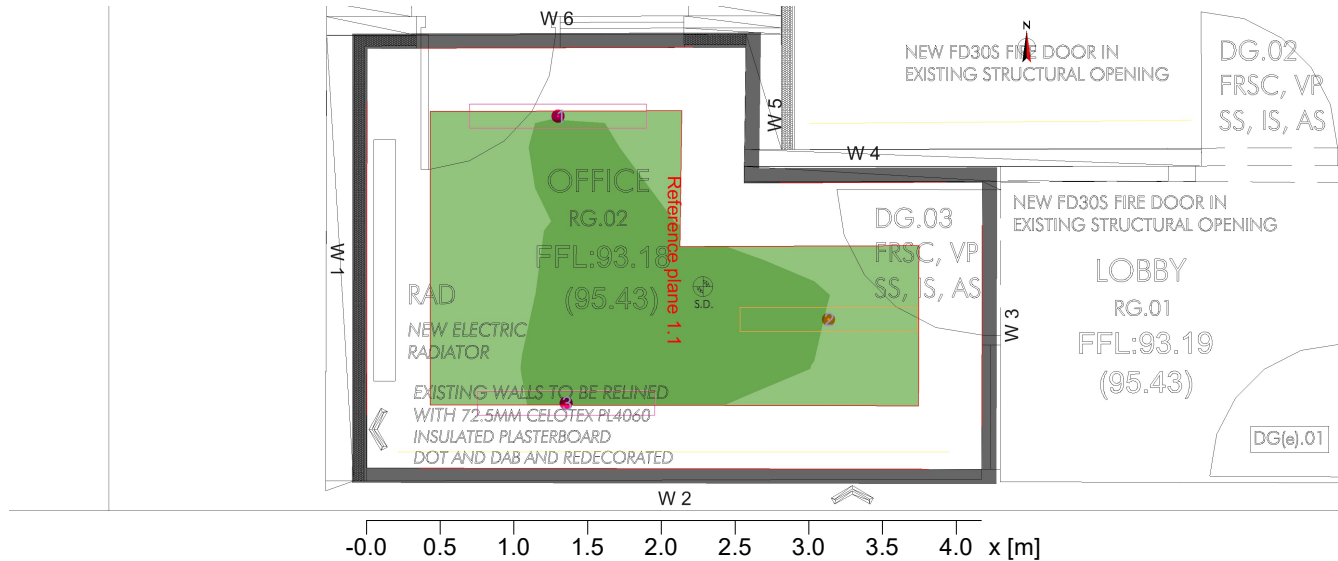


Wall	x	y	Length	Reflectance
1	-48.85 m	11.67 m	2.84 m	50.0 %
2	-44.69 m	11.66 m	4.17 m	50.0 %
3	-44.68 m	13.60 m	1.94 m	50.0 %
4	-46.30 m	13.60 m	1.61 m	50.0 %
5	-46.29 m	14.52 m	0.92 m	50.0 %
6	-48.85 m	14.51 m	2.57 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

1 Office RG.02

1.2 Summary, Office RG.02

1.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux
 Total power
 Total power per area (10.41 m²)

8340.00 lm
 68.0 W
 6.53 W/m² (1.33 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal	cylindrical
$\bar{E}_m$	492 lx	190 lx
E_{min}	401 lx	158 lx
$E_{min}/\bar{E}_m (U_o)$	0.82	0.83
$E_{min}/E_{max} (U_d)$	0.71	
E_z/E_h		0.32
Position	0.75 m	1.20 m
$R_{UG} (2.4H \ 3.5H)$	≤ 16.6	
Luminaire : (Commercial Linear UGR 19 4FT, IEDT0031A)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.373 (Ceiling)	94 lx	0.88
M 1.1 (Wall)	193 lx	0.72
M 1.2 (Wall)	262 lx	0.55
M 1.3 (Wall)	213 lx	0.68
M 1.4 (Wall)	205 lx	0.63
M 1.372 (Wall)	290 lx	0.54

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



1 Office RG.02

1.2 Summary, Office RG.02

1.2.1 Result overview, Evaluation area 1

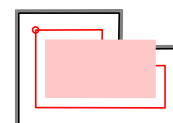
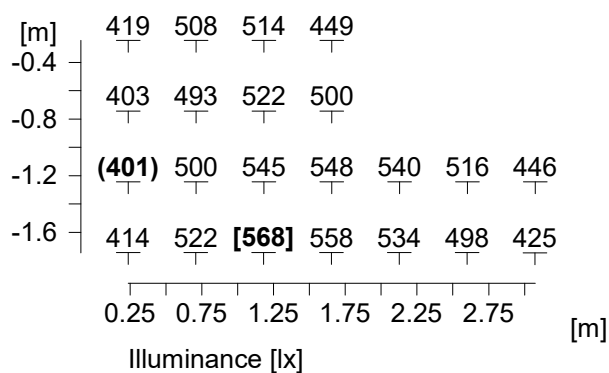
Type No.\Make

		JCC	
3	1 x	Order No.	: !EDT0032A
		Luminaire name	: Commercial Linear UGR19 4FT EM
		Equipment	: 1 x LED 24 W / 2780 lm
4	2 x	Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 22 W / 2780 lm

1 Office RG.02

1.3 Calculation results, Office RG.02

1.3.1 Table, Reference plane 1.1 (E)

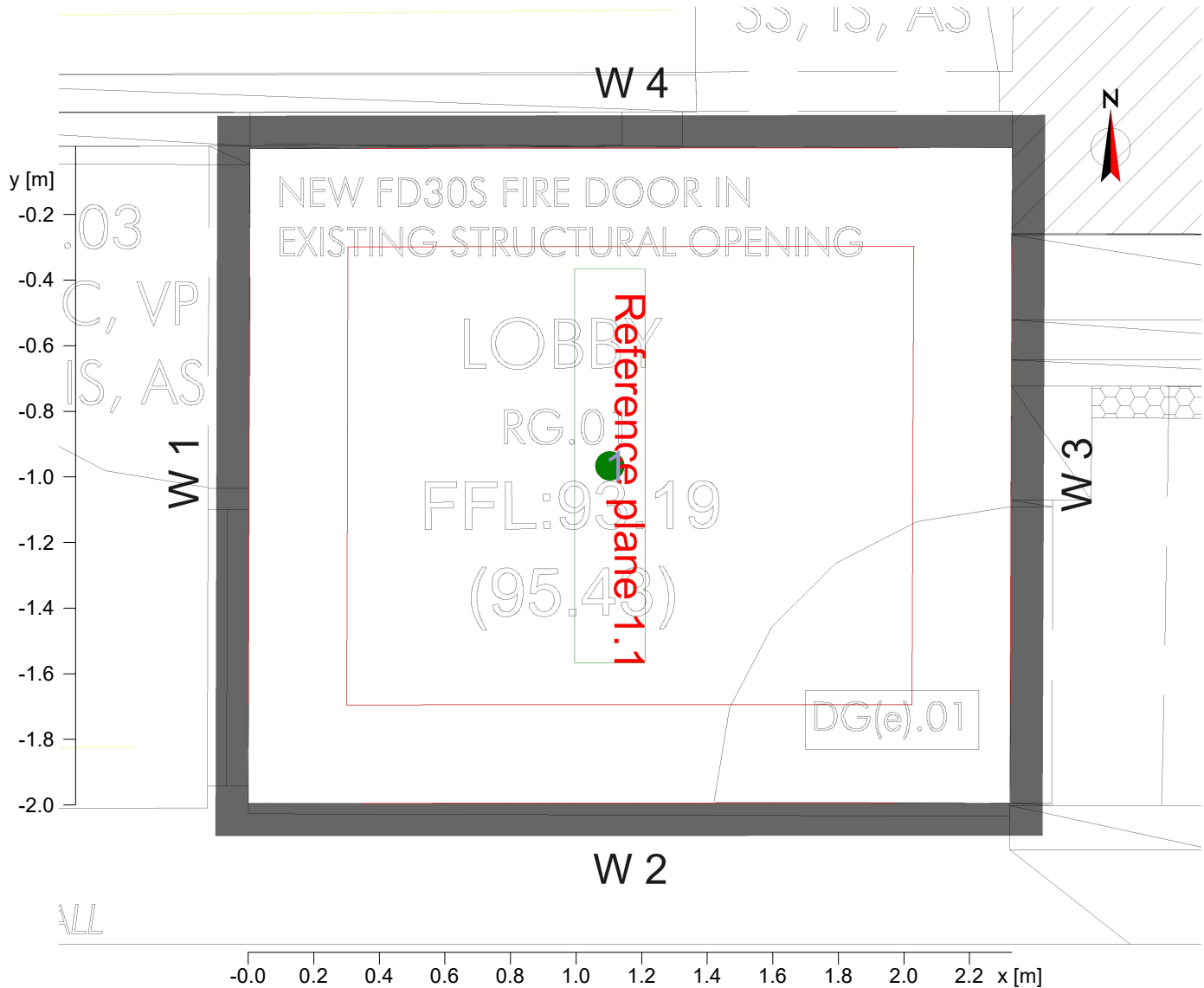


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 492 lx
Minimum illuminance	E_{min}	: 401 lx
Maximum illuminance	E_{max}	: 568 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.23 (0.82)

2 Lobby

2.1 Description, Lobby

2.1.1 Floor plan

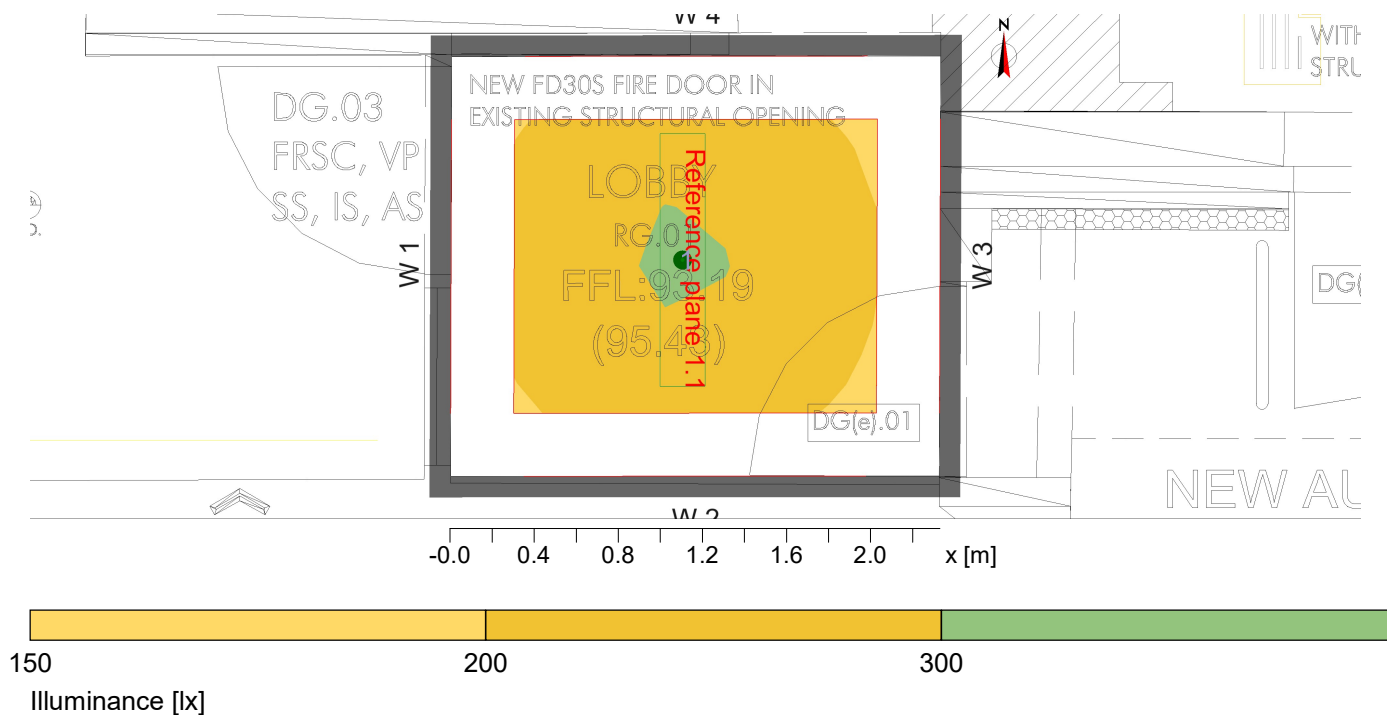


Wall	x	y	Length	Reflectance
1	-44.56 m	11.61 m	1.99 m	50.0 %
2	-42.24 m	11.61 m	2.32 m	50.0 %
3	-42.23 m	13.60 m	1.99 m	50.0 %
4	-44.56 m	13.60 m	2.32 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

2 Lobby

2.2 Summary, Lobby

2.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux
 Total power
 Total power per area (4.63 m²)

2700.00 lm
 22.0 W
 4.75 W/m² (1.84 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

Horizontal
 $\bar{E}_m$ 257 lx
 E_{min} 200 lx
 $E_{min}/\bar{E}_m (U_o)$ 0.78
 $E_{min}/E_{max} (U_d)$ 0.65
 E_z/E_h
 Position 0.75 m
 $R_{UG} (1.7H \ 2.0H)$ ≤ 16.0
 Luminaire :
 (LED 4' Single IP20 Emergency, IEDT0002A)

cylindrical
 110 lx
 99 lx
 0.90
 0.31
 1.20 m

Major surfaces

$\bar{E}_m$
 M 1.5 (Ceiling) 120 lx
 M 1.1 (Wall) 160 lx
 M 1.2 (Wall) 168 lx
 M 1.3 (Wall) 148 lx
 M 1.4 (Wall) 173 lx

U_o
 0.54
 0.61
 0.56
 0.66
 0.53

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2 Lobby

2.2 Summary, Lobby

2.2.1 Result overview, Evaluation area 1

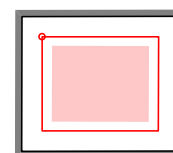
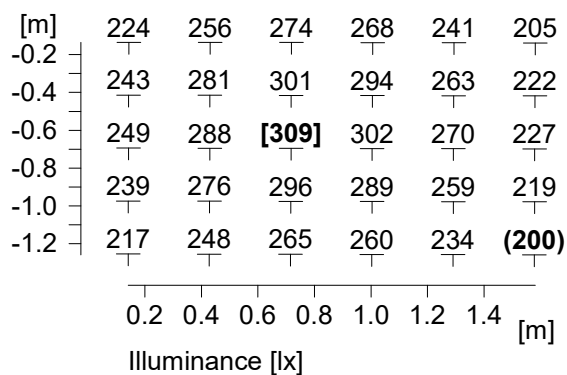
Type No.\Make

8	1 x	JCC	
		Order No.	: !EDT0002A
		Luminaire name	: LED 4' Single IP20 Emergency
		Equipment	: 1 x LED 22 W / 2700 lm

2 Lobby

2.3 Calculation results, Lobby

2.3.1 Table, Reference plane 1.1 (E)

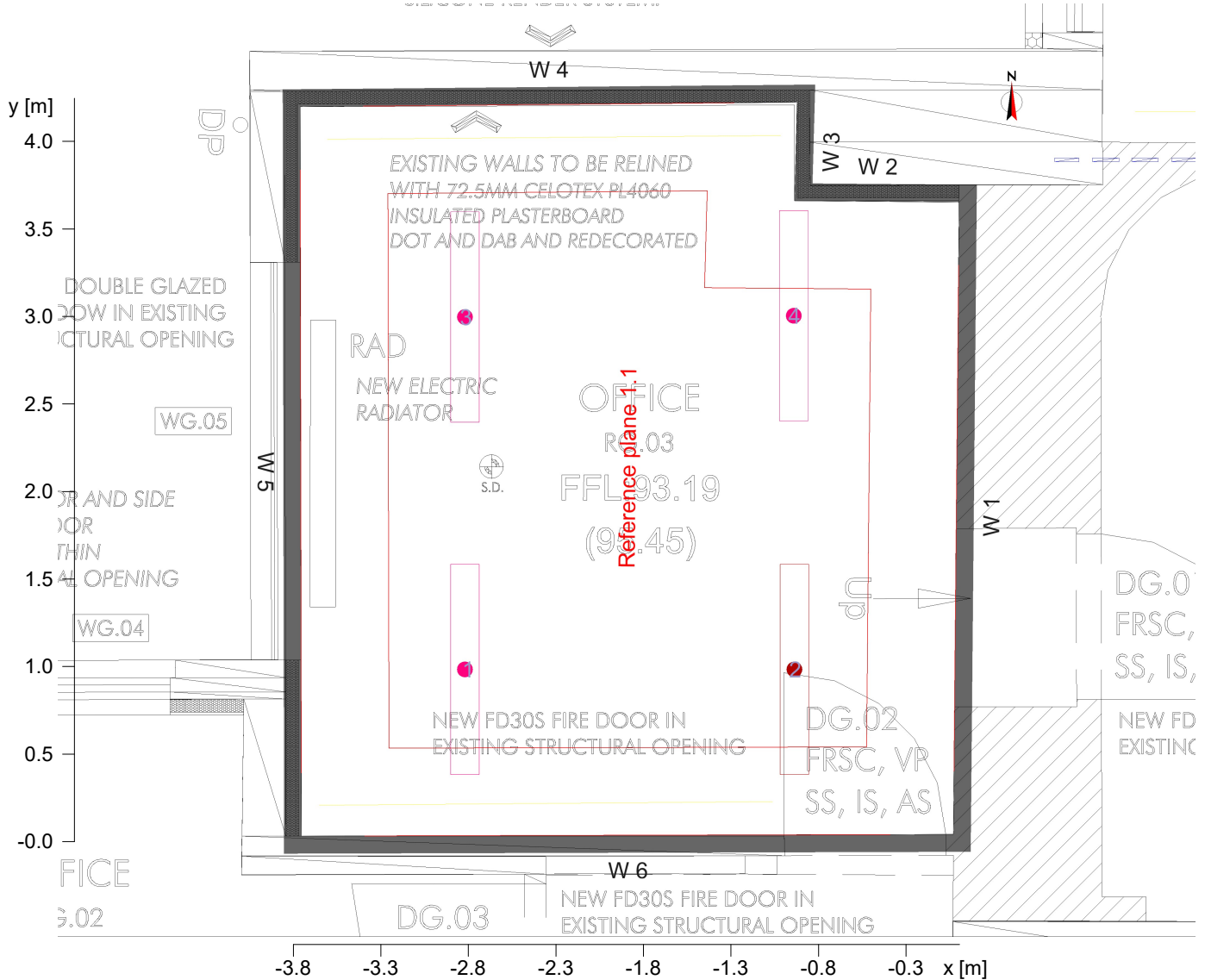


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 257 lx
Minimum illuminance	E_{min}	: 200 lx
Maximum illuminance	E_{max}	: 309 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.29 (0.78)

3 Office RG03

3.1 Description, Office RG03

3.1.1 Floor plan



Wall	x	y	Length	Reflectance
1	-42.20 m	17.44 m	3.61 m	50.0 %
2	-43.14 m	17.45 m	0.94 m	50.0 %
3	-43.13 m	18.01 m	0.56 m	50.0 %
4	-45.96 m	17.98 m	2.84 m	50.0 %
5	-45.96 m	13.82 m	4.16 m	50.0 %
6	-42.23 m	13.83 m	3.72 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

Object : Assentech - Trispen Project
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3 Office RG03

3.2 Summary, Office RG03

3.2.1 Result overview, Evaluation area 1

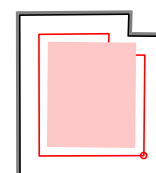
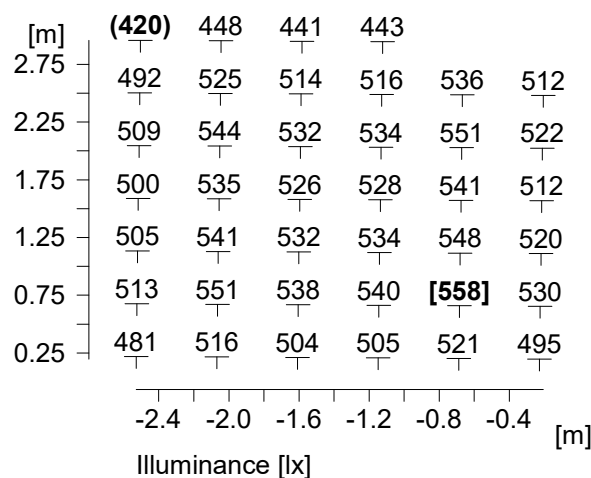
Type No.\Make

		JCC	
4	3 x	Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 22 W / 2780 lm
5	1 x	Order No.	: !EDT0032A
		Luminaire name	: Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM
		Equipment	: 1 x LED 24 W / 2860 lm

3 Office RG03

3.3 Calculation results, Office RG03

3.3.1 Table, Reference plane 1.1 (E)



Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 515 lx
Minimum illuminance	E_{min}	: 420 lx
Maximum illuminance	E_{max}	: 558 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.23 (0.81)

The logo for Edmundson Electrical features a stylized orange 'E' with three horizontal lines extending from its top bar. Below this graphic, the word 'EDMUNDSON' is written in a large, bold, blue sans-serif font, and the word 'ELECTRICAL' is written in a smaller, bold, blue sans-serif font directly underneath.

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4 Entrance Lobby Reception

4.1 Description, Entrance Lobby Reception

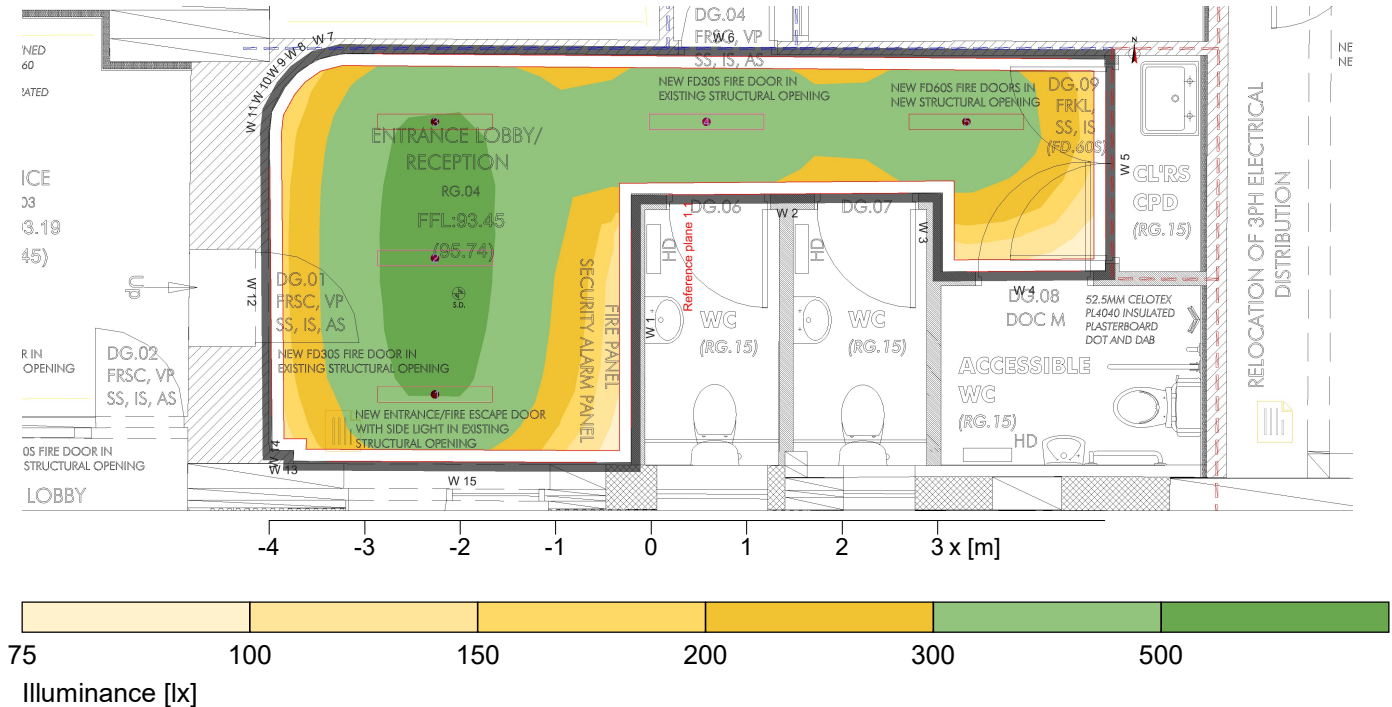
4.1.1 Floor plan

Wall	x	y	Length	Reflectance
1	-37.60 m	16.15 m	2.80 m	50.0 %
2	-34.34 m	16.17 m	3.26 m	50.0 %
3	-34.34 m	15.34 m	0.83 m	50.0 %
4	-32.63 m	15.35 m	1.71 m	50.0 %
5	-32.63 m	17.57 m	2.21 m	50.0 %
6	-40.64 m	17.62 m	8.00 m	50.0 %
7	-40.90 m	17.56 m	0.27 m	50.0 %
8	-41.09 m	17.42 m	0.24 m	50.0 %
9	-41.22 m	17.27 m	0.20 m	50.0 %
10	-41.36 m	17.02 m	0.29 m	50.0 %
11	-41.38 m	16.80 m	0.22 m	50.0 %
12	-41.35 m	13.47 m	3.33 m	50.0 %
13	-41.13 m	13.47 m	0.23 m	50.0 %
14	-41.13 m	13.36 m	0.11 m	50.0 %
15	-37.60 m	13.35 m	3.54 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

4 Entrance Lobby Reception

4.2 Summary, Entrance Lobby Reception

4.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	2.40 m
Maintenance factor	0.80
Total luminous flux	14140.00 lm
Total power	116.0 W
Total power per area (24.34 m ²)	4.77 W/m ² (1.33 W/m ² /100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	Horizontal	cylindrical
E_{min}	358 lx	144 lx
$E_{min}/\bar{E}_m (U_o)$	98 lx	63 lx
$E_{min}/E_{max} (U_d)$	0.27	0.44
E_z/E_h	0.17	0.34
Position	0.75 m	1.20 m
RUG (--- ---)	---	
Hints:		
- Room dimensions deviate too much from a rectangular room.		

Major surfaces

Major surfaces	$\bar{E}_m$	U_o
M 1.9 (Ceiling)	70 lx	0.59
M 1.1 (Wall)	122 lx	0.63
M 1.2 (Wall)	196 lx	0.62
M 1.4 (Wall)	95 lx	0.61
M 1.5 (Wall)	118 lx	0.51

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



4 Entrance Lobby Reception

4.2 Summary, Entrance Lobby Reception

4.2.1 Result overview, Evaluation area 1

M 1.6 (Wall)	209 lx	0.49
M 1.7 (Wall)	156 lx	0.71
M 1.8 (Wall)	203 lx	0.38

Type No. Make

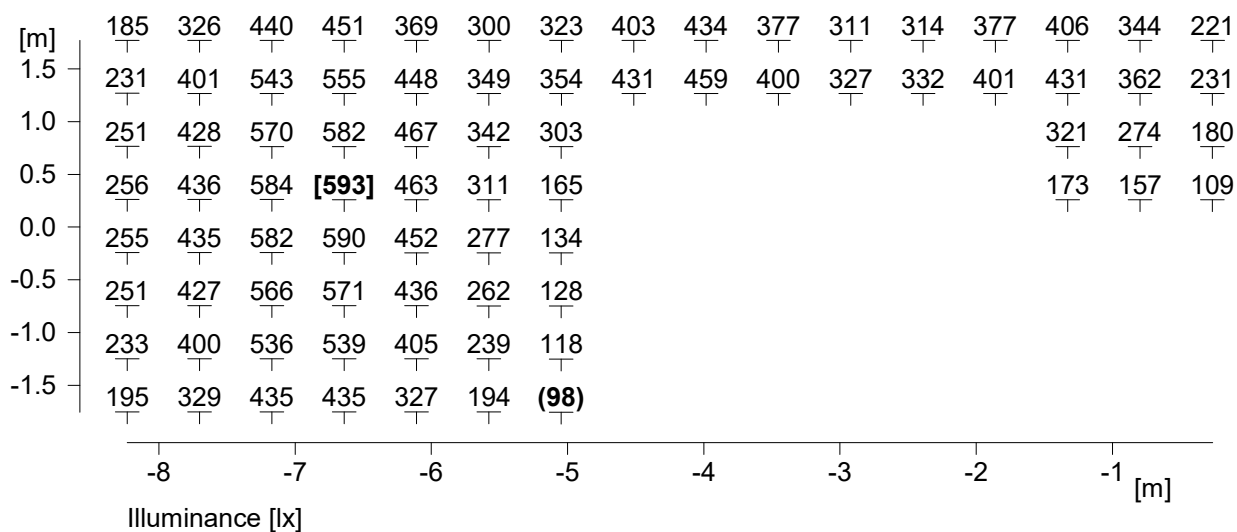
JCC

4	2 x	Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 22 W / 2780 lm
5	3 x	Order No.	: !EDT0032A
		Luminaire name	: Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM
		Equipment	: 1 x LED 24 W / 2860 lm

4 Entrance Lobby Reception

4.3 Calculation results, Entrance Lobby Reception

4.3.1 Table, Reference plane 1.1 (E)



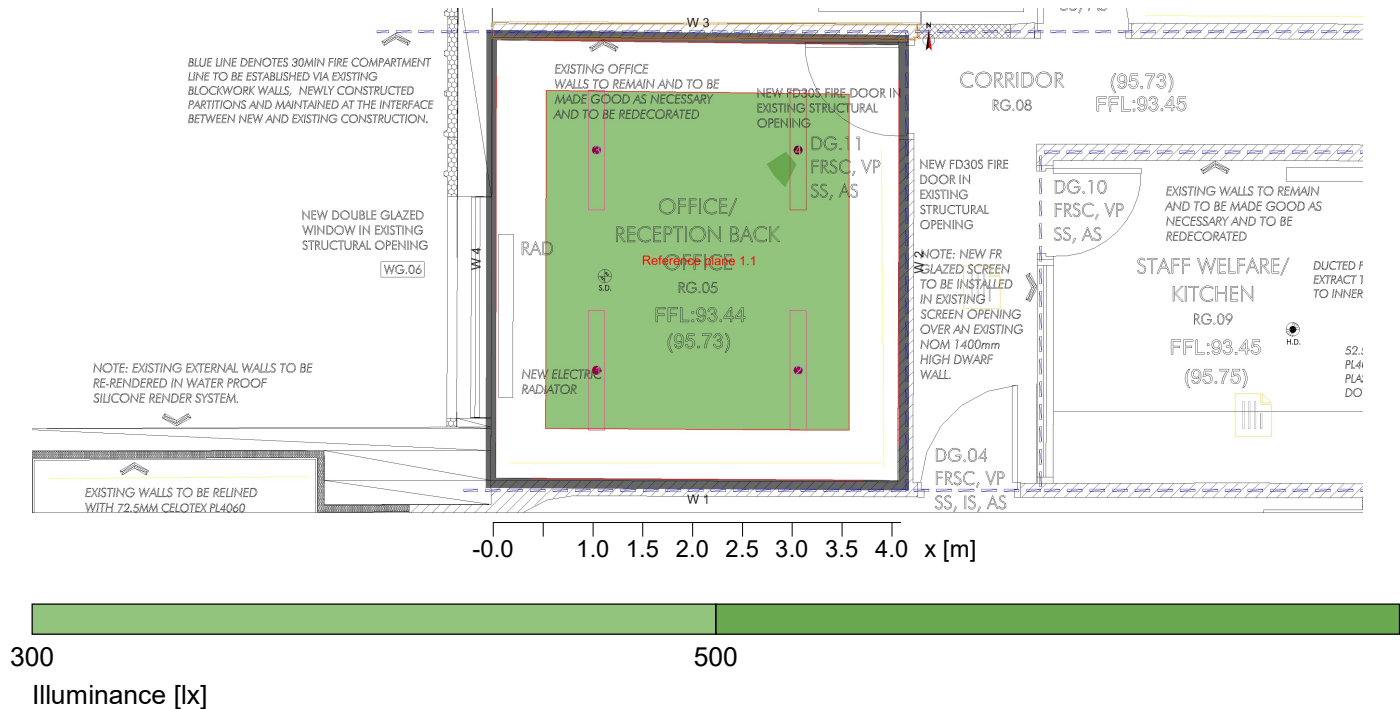
Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 358 lx
Minimum illuminance	E_{min}	: 98 lx
Maximum illuminance	E_{max}	: 593 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 3.64 (0.27)

Object : Assentech - Trispen Project
 Installation : Trispen Project
 Project number : Assentech Rev2 Plans
 Date : 14.06.2024

5 Office / Reception back office RG 05

5.2 Summary, Office / Reception back office RG 05

5.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux
 Total power
 Total power per area (17.69 m²)

11200.00 lm
 90.0 W
 5.09 W/m² (1.11 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal	cylindrical
$\bar{E}_m$	457 lx	175 lx
E_{min}	420 lx	153 lx
$E_{min}/\bar{E}_m (U_o)$	0.92	0.88
$E_{min}/E_{max} (U_d)$	0.82	
E_z/E_h		0.32
Position	0.75 m	1.20 m
$R_{UG} (3.4H \ 3.8H)$	≤ 17.3	
Luminaire : (Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM, !EDT0032A)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.5 (Ceiling)	80 lx	0.96
M 1.1 (Wall)	204 lx	0.65
M 1.2 (Wall)	201 lx	0.64
M 1.3 (Wall)	208 lx	0.64
M 1.4 (Wall)	199 lx	0.65

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



5 Office / Reception back office RG 05

5.2 Summary, Office / Reception back office RG 05

5.2.1 Result overview, Evaluation area 1

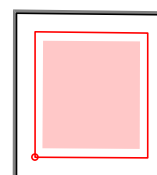
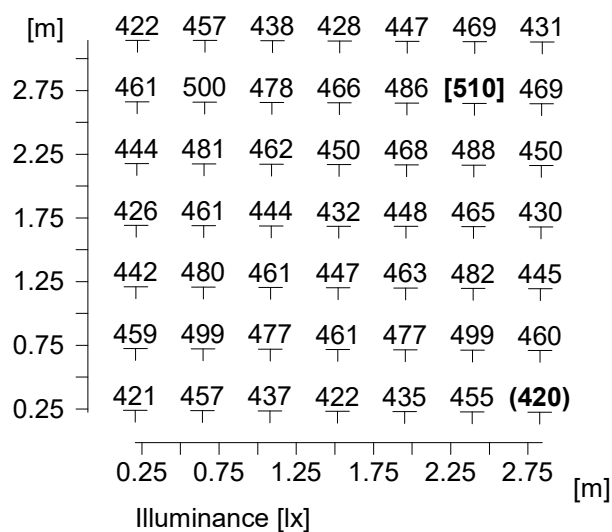
Type No. \ Make

		JCC	
4	3 x	Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 22 W / 2780 lm
5	1 x	Order No.	: !EDT0032A
		Luminaire name	: Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM
		Equipment	: 1 x LED 24 W / 2860 lm

5 Office / Reception back office RG 05

5.3 Calculation results, Office / Reception back office RG 05

5.3.1 Table, Reference plane 1.1 (E)

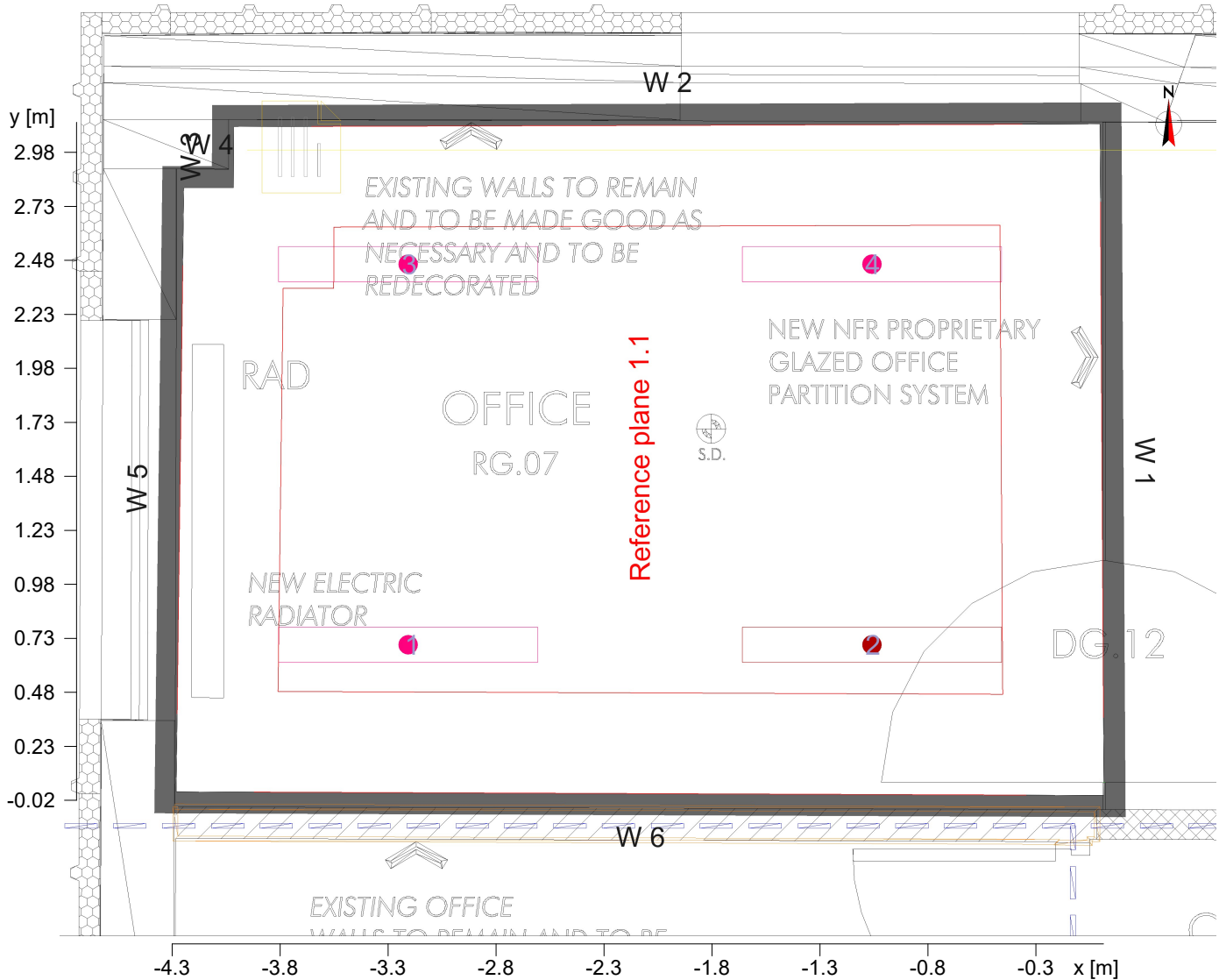


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 457 lx
Minimum illuminance	E_{min}	: 420 lx
Maximum illuminance	E_{max}	: 510 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.09 (0.92)

6 Office RG07

6.1 Description, Office RG07

6.1.1 Floor plan

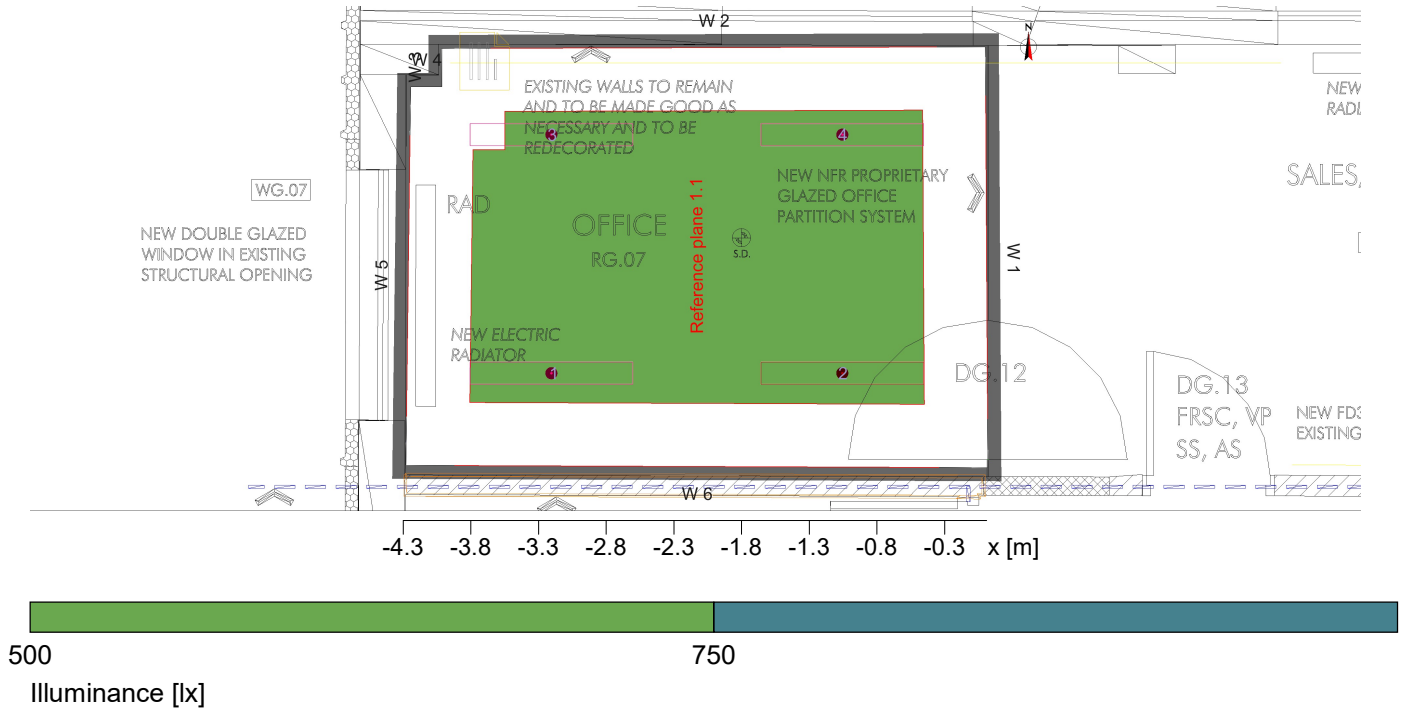


Wall	x	y	Length	Reflectance
1	-37.09 m	25.52 m	3.10 m	50.0 %
2	-41.10 m	25.51 m	4.01 m	50.0 %
3	-41.10 m	25.23 m	0.28 m	50.0 %
4	-41.33 m	25.23 m	0.23 m	50.0 %
5	-41.36 m	22.44 m	2.79 m	50.0 %
6	-37.07 m	22.42 m	4.29 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

6 Office RG07

6.2 Summary, Office RG07

6.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	2.40 m
Maintenance factor	0.80
Total luminous flux	11200.00 lm
Total power	90.0 W
Total power per area (13.11 m ²)	6.86 W/m ² (1.26 W/m ² /100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	543 lx	cylindrical
E_{min}	502 lx	213 lx
$E_{min}/\bar{E}_m (U_o)$	0.92	178 lx
$E_{min}/E_{max} (U_d)$	0.87	0.83
E_z/E_h		0.34
Position	0.75 m	1.20 m
$R_{UG} (2.6H \ 3.6H)$	≤ 16.8	
Luminaire : (Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM, !EDT0032A)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.133 (Ceiling)	109 lx	0.92
M 1.1 (Wall)	253 lx	0.71
M 1.2 (Wall)	292 lx	0.70
M 1.131 (Wall)	251 lx	0.69
M 1.132 (Wall)	281 lx	0.69

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



6 Office RG07

6.2 Summary, Office RG07

6.2.1 Result overview, Evaluation area 1

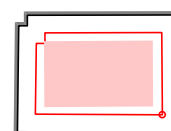
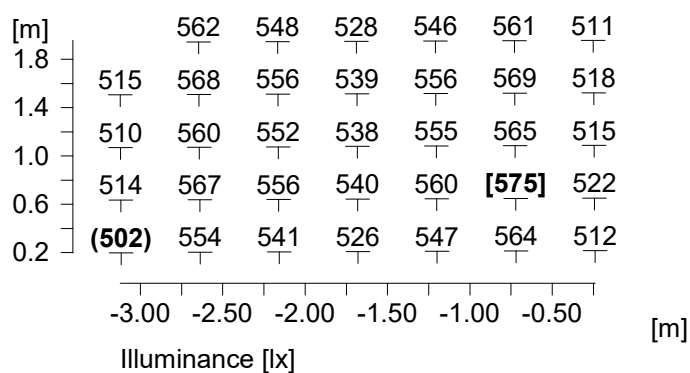
Type No.\Make

		JCC	
4	3 x	Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 22 W / 2780 lm
5	1 x	Order No.	: !EDT0032A
		Luminaire name	: Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM
		Equipment	: 1 x LED 24 W / 2860 lm

6 Office RG07

6.3 Calculation results, Office RG07

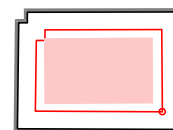
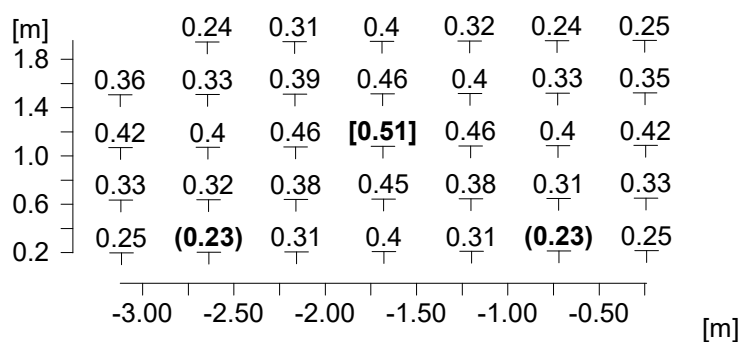
6.3.1 Table, Reference plane 1.1 (E)



Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 543 lx
Minimum illuminance	E_{min}	: 502 lx
Maximum illuminance	E_{max}	: 575 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.08 (0.92)

6.3 Calculation results, Office RG07

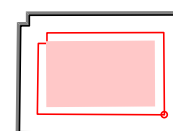
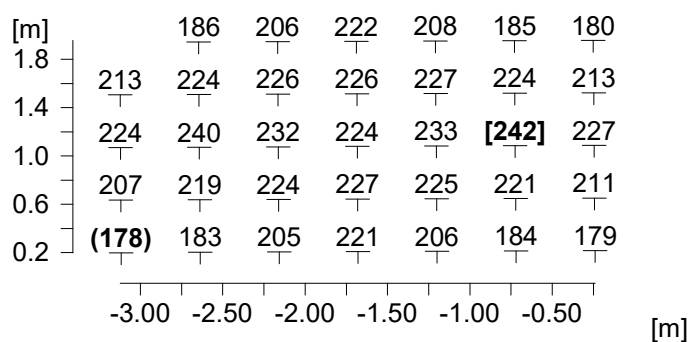
6.3.2 Table, Reference plane 1.1 (Shadiness)



Shadiness
 Height reference plane : 1.20 m
 Minimum shadiness Min : 0.23
 Maximum shadiness Max : 0.51

6.3 Calculation results, Office RG07

6.3.3 Table, Reference plane 1.1 (Ec)

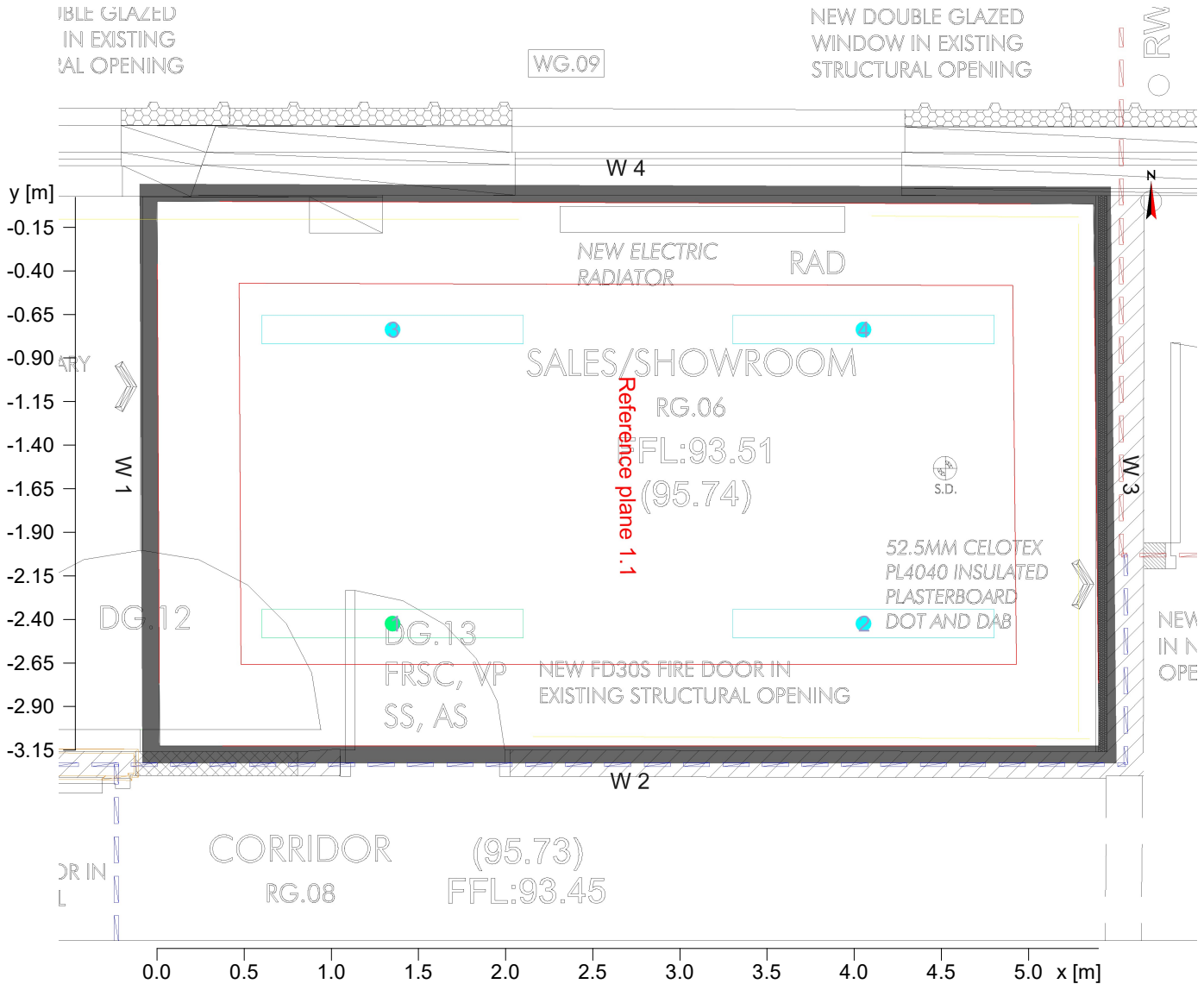


Cylindrical illuminance		
Height reference plane		: 1.20 m
Average illuminance	$\bar{E}_m$	: 213 lx
Minimum illuminance	E_{min}	: 178 lx
Maximum illuminance	E_{max}	: 242 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.20 (0.83)

7 Sales/Showroom RG06

7.1 Description, Sales/Showroom RG06

7.1.1 Floor plan



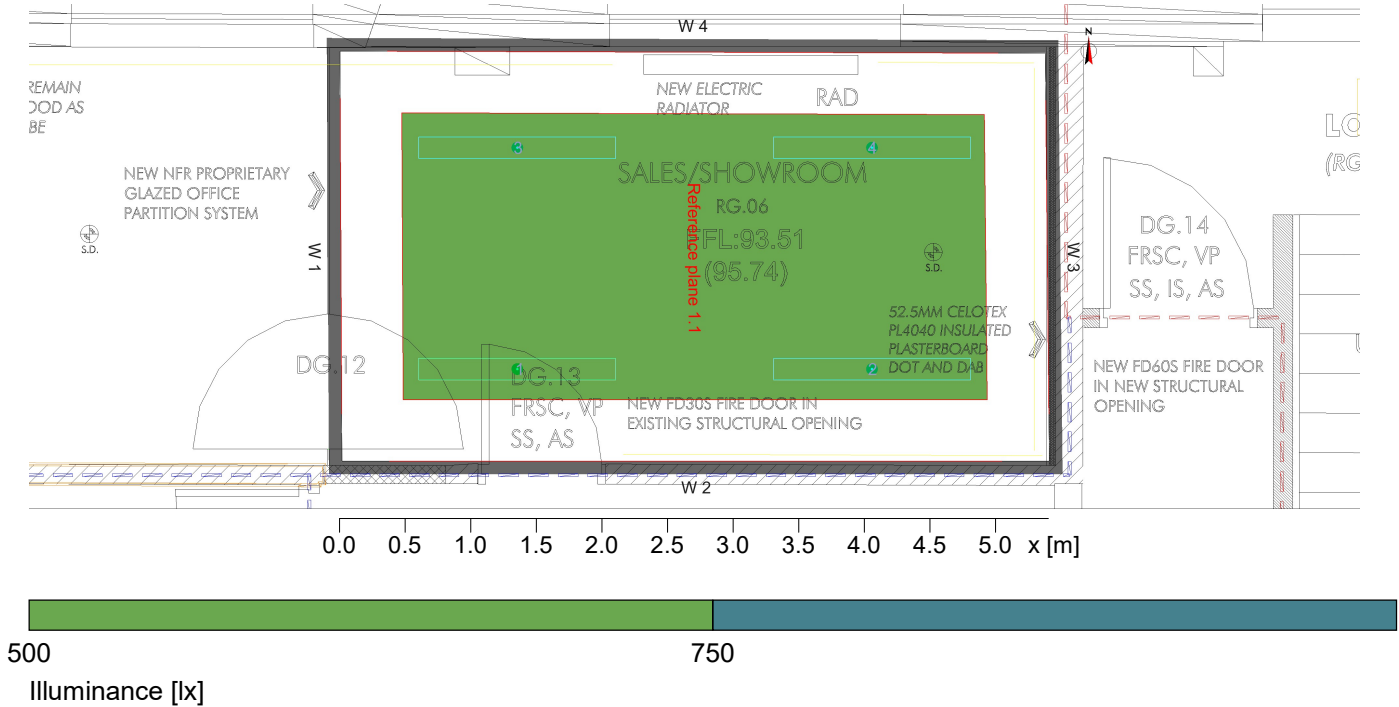
Wall	x	y	Length	Reflectance
1	-36.96 m	22.39 m	3.12 m	50.0 %
2	-31.58 m	22.39 m	5.39 m	50.0 %
3	-31.61 m	25.49 m	3.11 m	50.0 %
4	-36.98 m	25.51 m	5.37 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024

7 Sales/Showroom RG06

7.2 Summary, Sales/Showroom RG06

7.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
Height of luminaire plane
Maintenance factor

Average indirect fraction
2.40 m
0.80

Total luminous flux
Total power
Total power per area (16.74 m²)

16120.00 lm
122.0 W
7.29 W/m² (1.12 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

Horizontal
 $\bar{E}_m$ 652 lx
 E_{min} 552 lx
 $E_{min}/\bar{E}_m (U_o)$ 0.85
 $E_{min}/E_{max} (U_d)$ 0.75
 E_z/E_h
Position 0.75 m
 $R_{UG} (2.7H \ 4.6H)$ ≤ 17.6
Luminaire :
(Commercial Linear UGR19 5FT 32W 3CCT Em, IEDT0042A)

cylindrical
255 lx
214 lx
0.84
0.34
1.20 m

Major surfaces

	$\bar{E}_m$	U_o
M 1.5 (Ceiling)	127 lx	0.89
M 1.1 (Wall)	280 lx	0.71
M 1.2 (Wall)	330 lx	0.60
M 1.3 (Wall)	283 lx	0.74
M 1.4 (Wall)	326 lx	0.60

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024

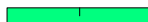


7 Sales/Showroom RG06

7.2 Summary, Sales/Showroom RG06

7.2.1 Result overview, Evaluation area 1

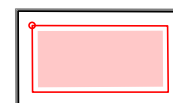
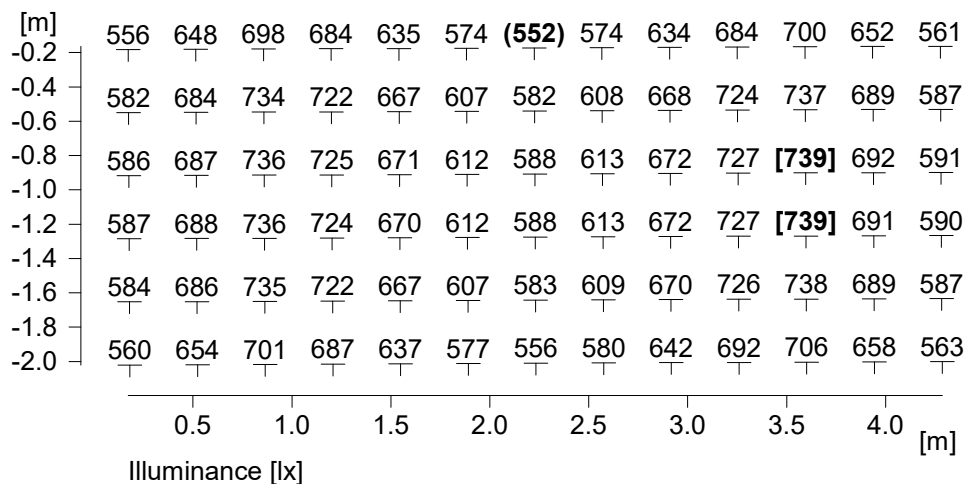
Type No.\Make

		JCC	
6	3 x	Order No.	: !EDT0041A
		Luminaire name	: Commercial Linear UGR19 5FT
		Equipment	: 1 x LED 30 W / 4030 lm
7	1 x	Order No.	: !EDT0042A
		Luminaire name	: Commercial Linear UGR19 5FT 32W 3CCT Em
		Equipment	: 1 x LED 32 W / 4030 lm

7 Sales/Showroom RG06

7.3 Calculation results, Sales/Showroom RG06

7.3.1 Table, Reference plane 1.1 (E)

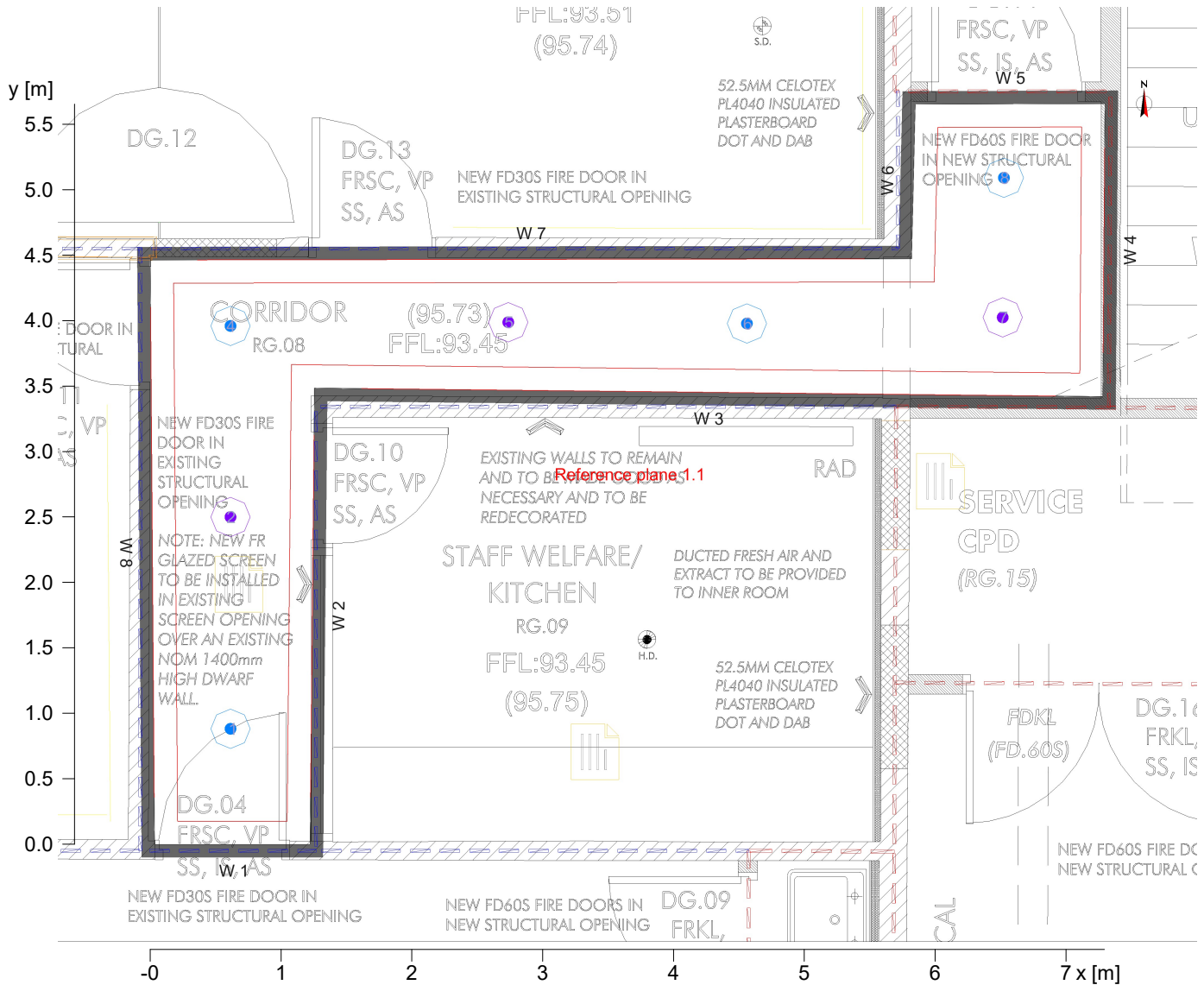


Height reference plane	: 0.75 m
Average illuminance	$\bar{E}_m$: 652 lx
Minimum illuminance	E_{min} : 552 lx
Maximum illuminance	E_{max} : 739 lx
Uniformity U_o	$E_{min}/\bar{E}_m$: 1 : 1.18 (0.85)

8 Corridor RG08

8.1 Description, Corridor RG08

8.1.1 Floor plan

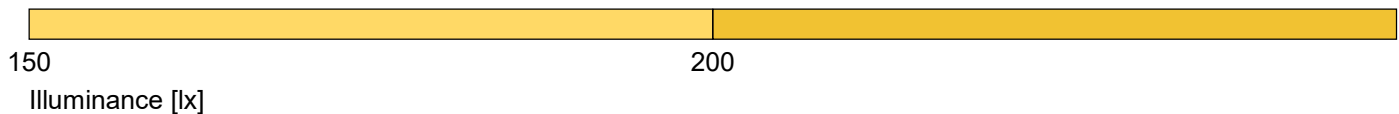
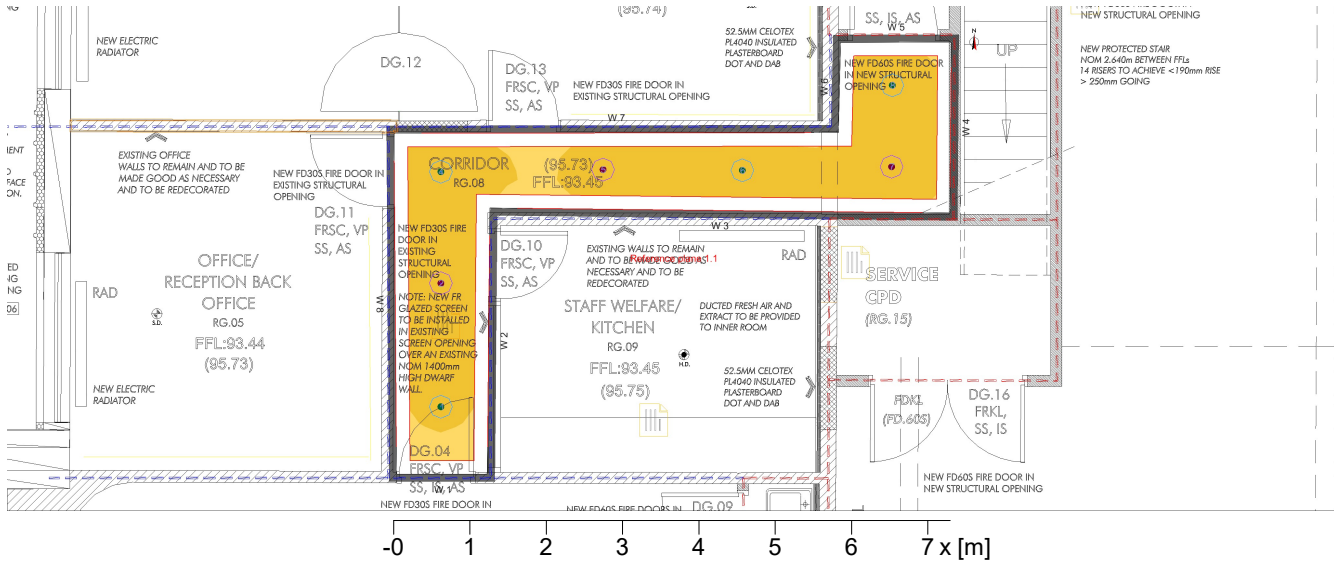


Wall	x	y	Length	Reflectance
1	-35.92 m	17.73 m	1.19 m	50.0 %
2	-35.88 m	21.21 m	3.48 m	50.0 %
3	-29.86 m	21.15 m	6.02 m	50.0 %
4	-29.84 m	23.38 m	2.24 m	50.0 %
5	-31.29 m	23.38 m	1.45 m	50.0 %
6	-31.32 m	22.20 m	1.18 m	50.0 %
7	-37.14 m	22.19 m	5.82 m	50.0 %
8	-37.10 m	17.73 m	4.46 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

8 Corridor RG08

8.2 Summary, Corridor RG08

8.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
Height of luminaire plane
Maintenance factor

Average indirect fraction
2.40 m
0.80

Total luminous flux
Total power
Total power per area (13.31 m²)

8722.00 lm
84.0 W
6.31 W/m² (2.68 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	Horizontal	cylindrical
E_{min}	236 lx	106 lx
$E_{min}/\bar{E}_m (U_o)$	170 lx	76 lx
$E_{min}/E_{max} (U_d)$	0.72	0.72
E_z/E_h	0.57	
Position	0.75 m	0.35
RUG (--- ---)	---	1.20 m

Hints:

- Room dimensions deviate too much from a rectangular room.

Major surfaces

Major surfaces	$\bar{E}_m$	U_o
M 1.145 (Ceiling)	96.8 lx	0.60
M 1.140 (Wall)	159 lx	0.49
M 1.141 (Wall)	157 lx	0.45
M 1.142 (Wall)	182 lx	0.51
M 1.143 (Wall)	151 lx	0.47

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



8 Corridor RG08

8.2 Summary, Corridor RG08

8.2.1 Result overview, Evaluation area 1

M 1.144 (Wall) 162 lx 0.44

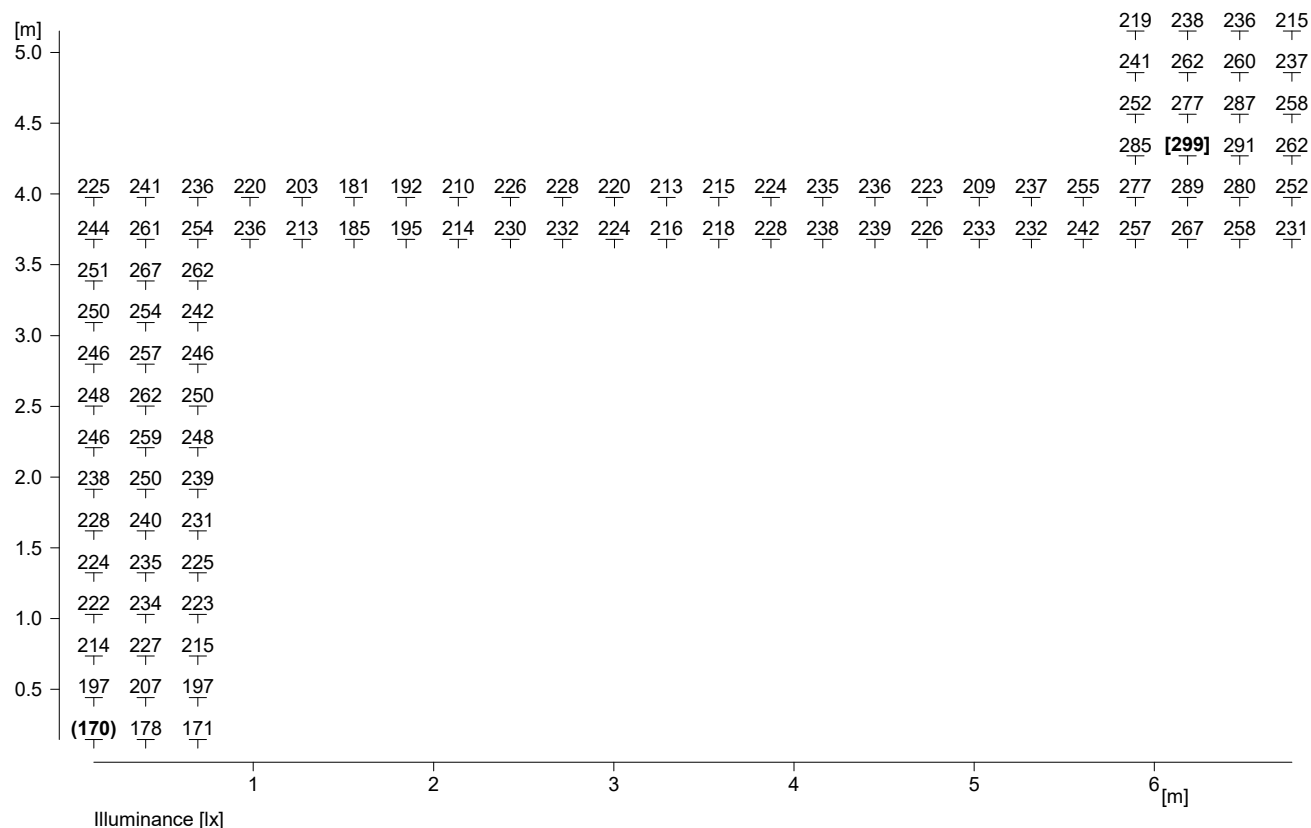
Type No.\Make

		JCC	
9	3 x	Order No.	: !EDT007A5
		Luminaire name	: RadiaLED IP65 4000K 12W + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm
10	4 x	Order No.	: !EDT007A6
		Luminaire name	: RadiaLED IP65 4000K 12W Emergency + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm

8 Corridor RG08

8.3 Calculation results, Corridor RG08

8.3.1 Table, Reference plane 1.1 (E)

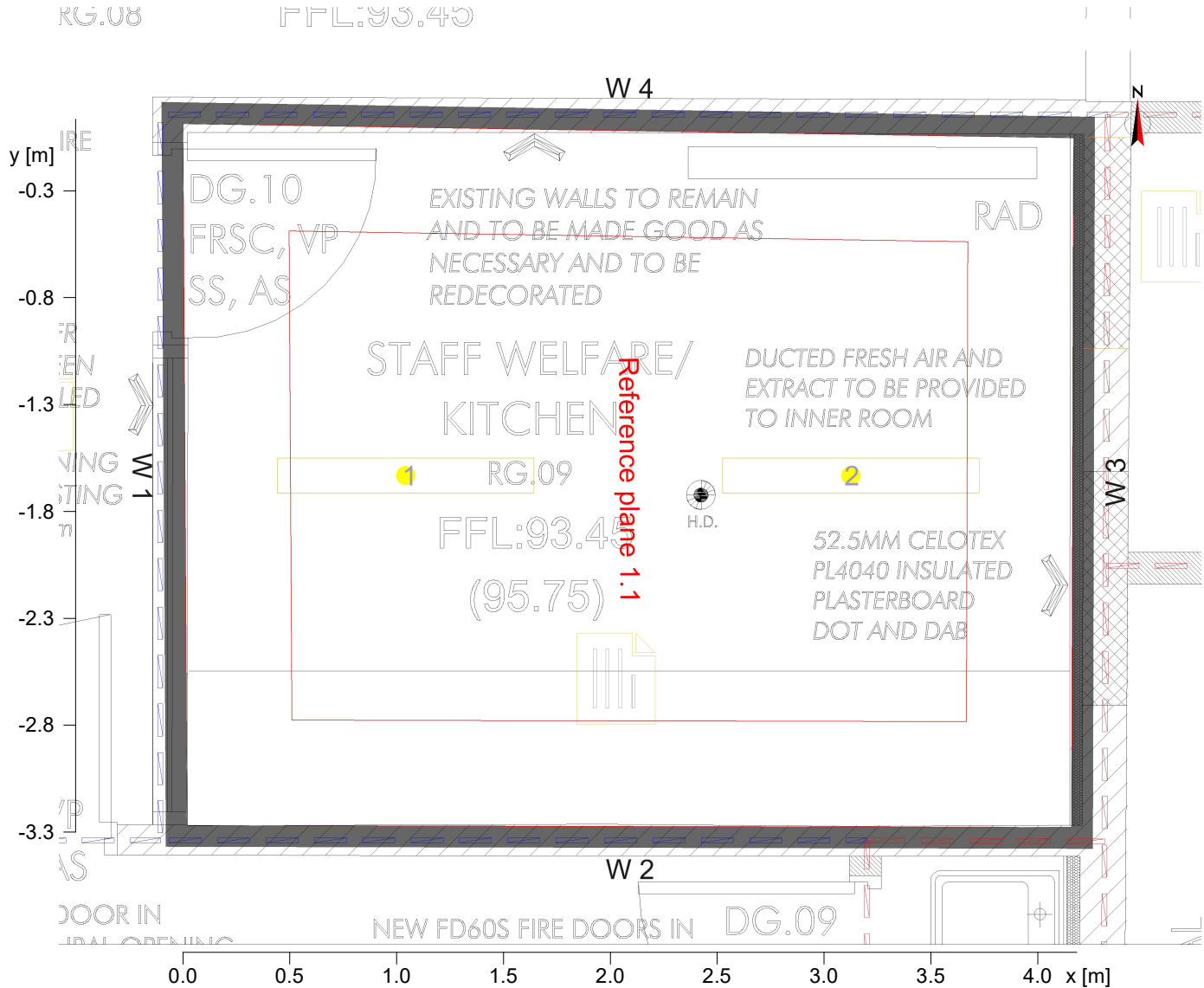


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 236 lx
Minimum illuminance	E_{min}	: 170 lx
Maximum illuminance	E_{max}	: 299 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.39 (0.72)

9 Staff Kitchen Welfare RG09

9.1 Description, Staff Kitchen Welfare RG09

9.1.1 Floor plan



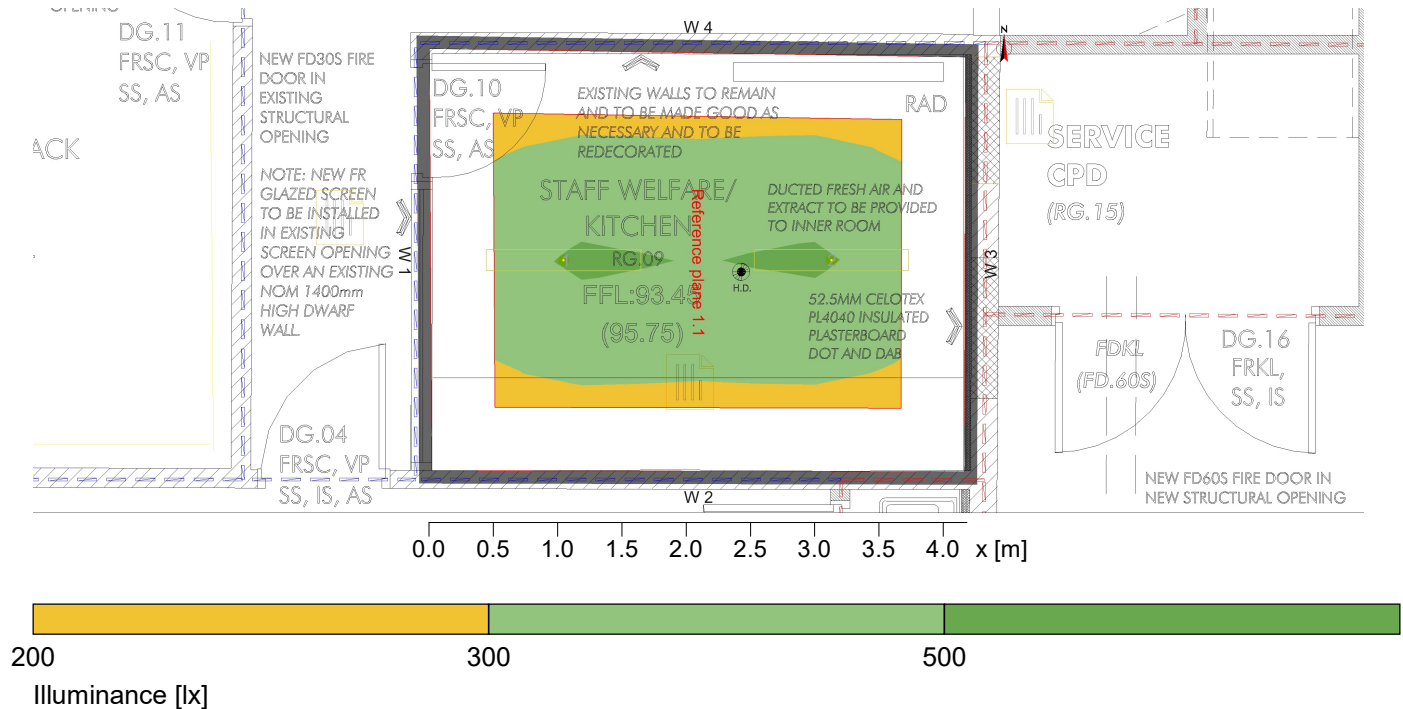
Wall	x	y	Length	Reflectance
1	-35.75 m	17.75 m	3.28 m	50.0 %
2	-31.61 m	17.74 m	4.14 m	50.0 %
3	-31.60 m	20.96 m	3.22 m	50.0 %
4	-35.76 m	21.03 m	4.17 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

Object : Assentech - Trispen Project
 Installation : Trispen Project
 Project number : Assentech Rev2 Plans
 Date : 14.06.2024

9 Staff Kitchen Welfare RG09

9.2 Summary, Staff Kitchen Welfare RG09

9.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	2.40 m
Maintenance factor	0.80
Total luminous flux	6600.00 lm
Total power	50.0 W
Total power per area (13.49 m ²)	3.71 W/m ² (0.94 W/m ² /100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	Horizontal	cylindrical
E_{min}	396 lx	141 lx
$E_{min}/\bar{E}_m (U_o)$	285 lx	123 lx
$E_{min}/E_{max} (U_d)$	0.72	0.87
E_z/E_h	0.55	
Position	0.75 m	0.29
$R_{UG} (3.5H \ 2.8H)$	≤ 17.3	1.20 m
Luminaire : (Commercial Linear UGR 19 4FT , IEDT0031A)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.5 (Ceiling)	61 lx	0.85
M 1.1 (Wall)	167 lx	0.46
M 1.2 (Wall)	121 lx	0.58
M 1.3 (Wall)	168 lx	0.46
M 1.4 (Wall)	123 lx	0.58

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



9 Staff Kitchen Welfare RG09

9.2 Summary, Staff Kitchen Welfare RG09

9.2.1 Result overview, Evaluation area 1

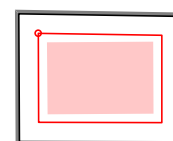
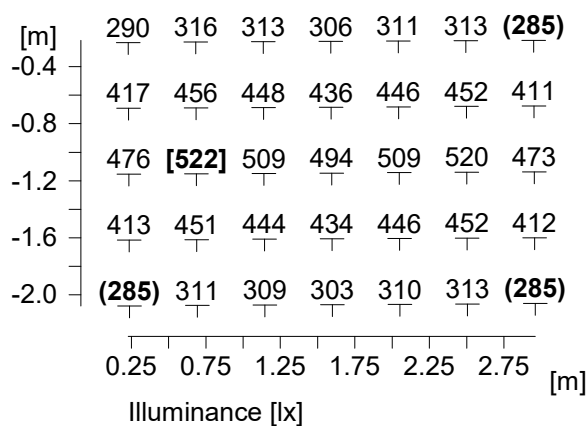
Type No.\Make

1	2 x	JCC	
		Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 25 W / 3300 lm

9 Staff Kitchen Welfare RG09

9.3 Calculation results, Staff Kitchen Welfare RG09

9.3.1 Table, Reference plane 1.1 (E)

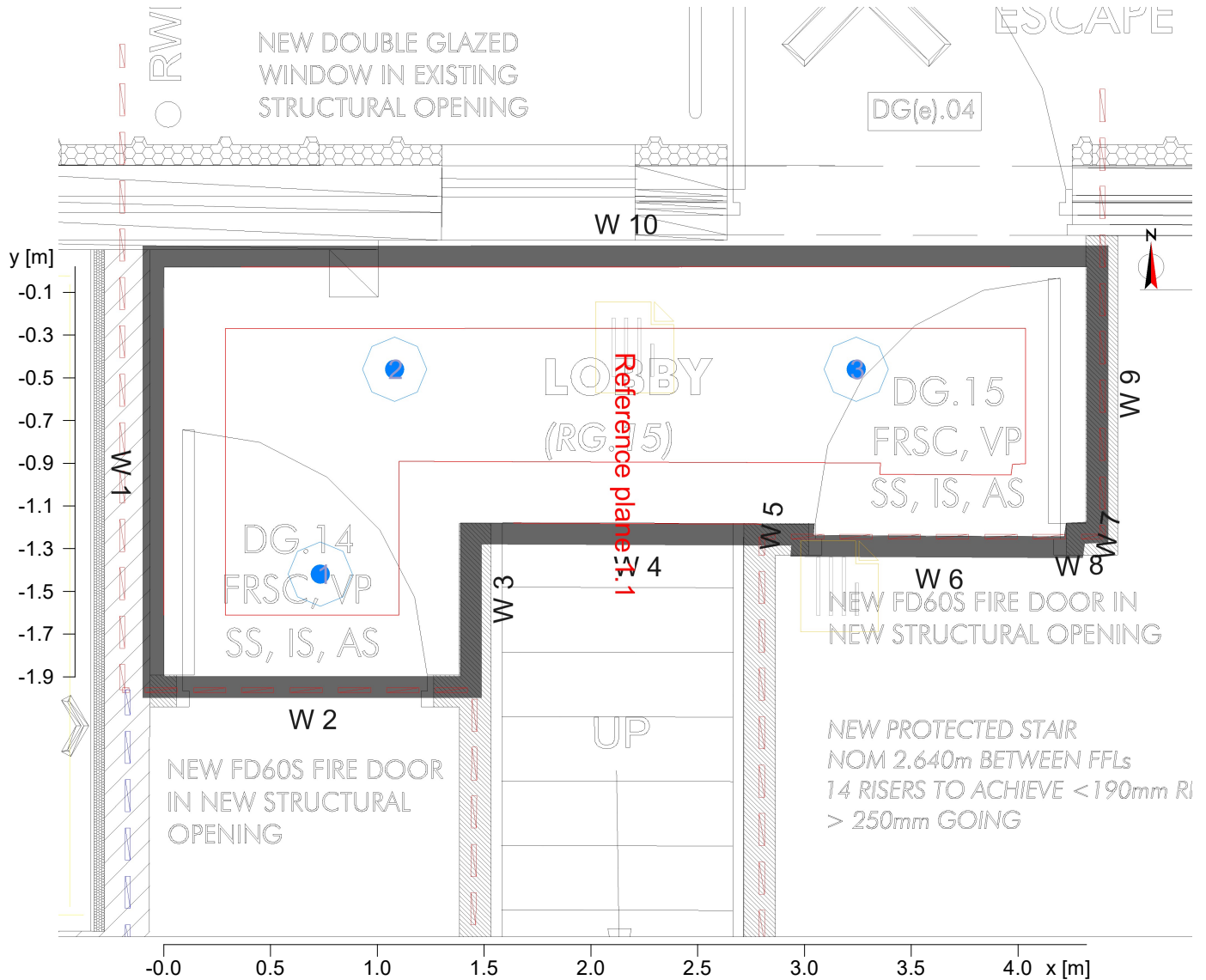


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 396 lx
Minimum illuminance	E_{min}	: 285 lx
Maximum illuminance	E_{max}	: 522 lx
Uniformity U_0	$E_{min}/\bar{E}_m$	: 1 : 1.39 (0.72)

10 Lobby Rear RG15

10.1 Description, Lobby Rear RG15

10.1.1 Floor plan



Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



10 Lobby Rear RG15

10.1 Description, Lobby Rear RG15

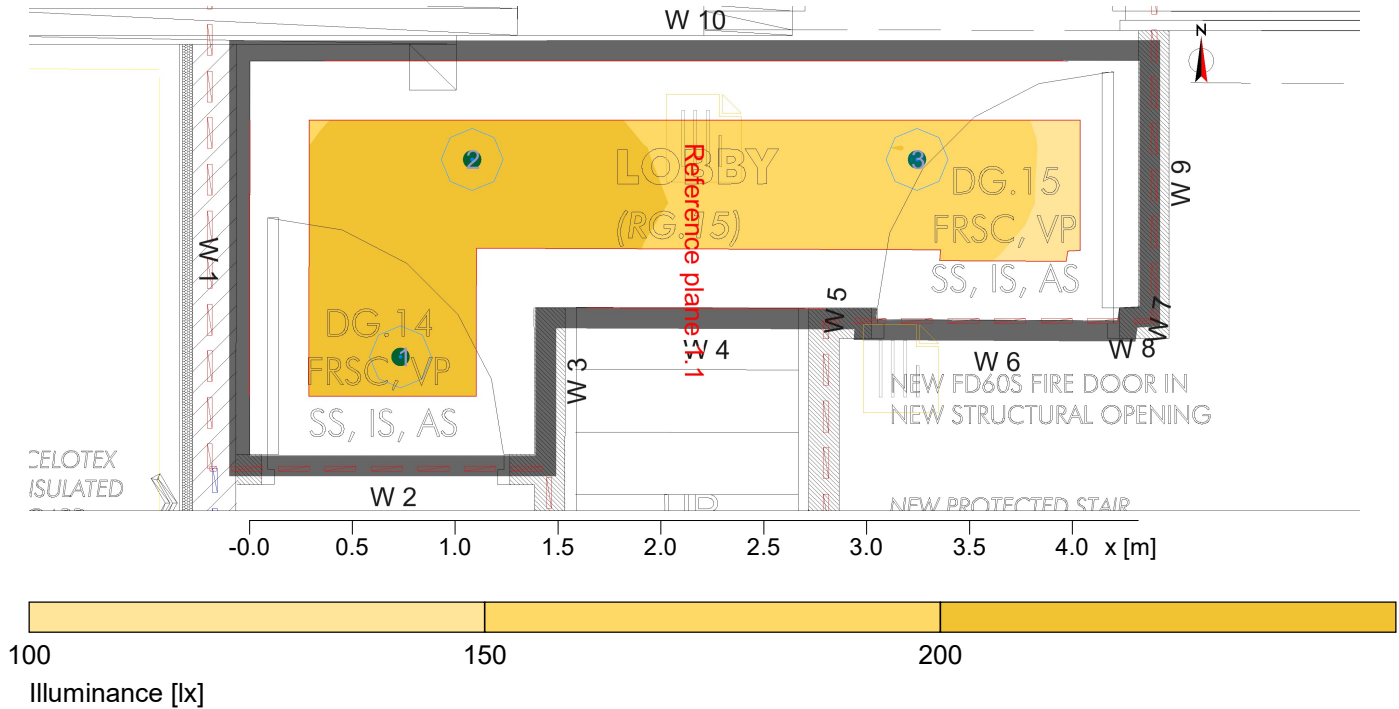
10.1.1 Floor plan

Wall	x	y	Length	Reflectance
1	-31.26 m	23.54 m	1.91 m	50.0 %
2	-29.87 m	23.54 m	1.39 m	50.0 %
3	-29.87 m	24.26 m	0.72 m	50.0 %
4	-28.21 m	24.25 m	1.66 m	50.0 %
5	-28.22 m	24.20 m	0.05 m	50.0 %
6	-27.04 m	24.20 m	1.17 m	50.0 %
7	-27.03 m	24.26 m	0.06 m	50.0 %
8	-26.94 m	24.26 m	0.10 m	50.0 %
9	-26.94 m	25.46 m	1.19 m	50.0 %
10	-31.25 m	25.46 m	4.32 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

10 Lobby Rear RG15

10.2 Summary, Lobby Rear RG15

10.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	2.40 m
Maintenance factor	0.80
Total luminous flux	3738.00 lm
Total power	36.0 W
Total power per area (6.25 m²)	5.76 W/m² (2.65 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	Horizontal	cylindrical
E_{min}	218 lx	96 lx
$E_{min}/\bar{E}_m (U_o)$	128 lx	68 lx
$E_{min}/E_{max} (U_d)$	0.59	0.71
E_z/E_h	0.44	
Position	0.75 m	0.32
$R_{UG} (1.7H \ 3.8H)$	≤ 19.9	1.20 m
Luminaire : (RadialLED IP65 4000K 12W Emergency + With RIM, IEDT007A6)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.452 (Ceiling)	88.4 lx	0.57
M 1.1 (Wall)	168 lx	0.58
M 1.450 (Wall)	104 lx	0.65
M 1.451 (Wall)	147 lx	0.39

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



10 Lobby Rear RG15

10.2 Summary, Lobby Rear RG15

10.2.1 Result overview, Evaluation area 1

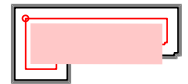
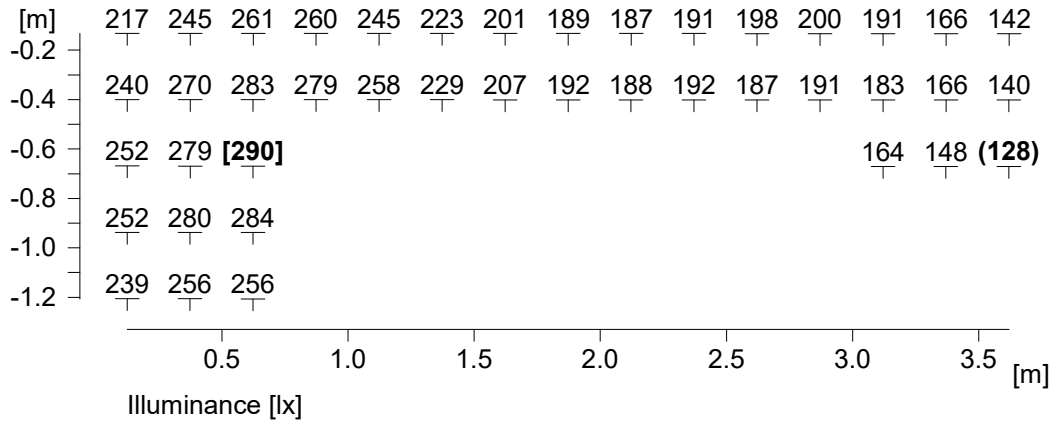
Type No.\Make

10	3 x	JCC	
		Order No.	: !EDT007A6
		Luminaire name	: RadiaLED IP65 4000K 12W Emergency + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm

10 Lobby Rear RG15

10.3 Calculation results, Lobby Rear RG15

10.3.1 Table, Reference plane 1.1 (E)

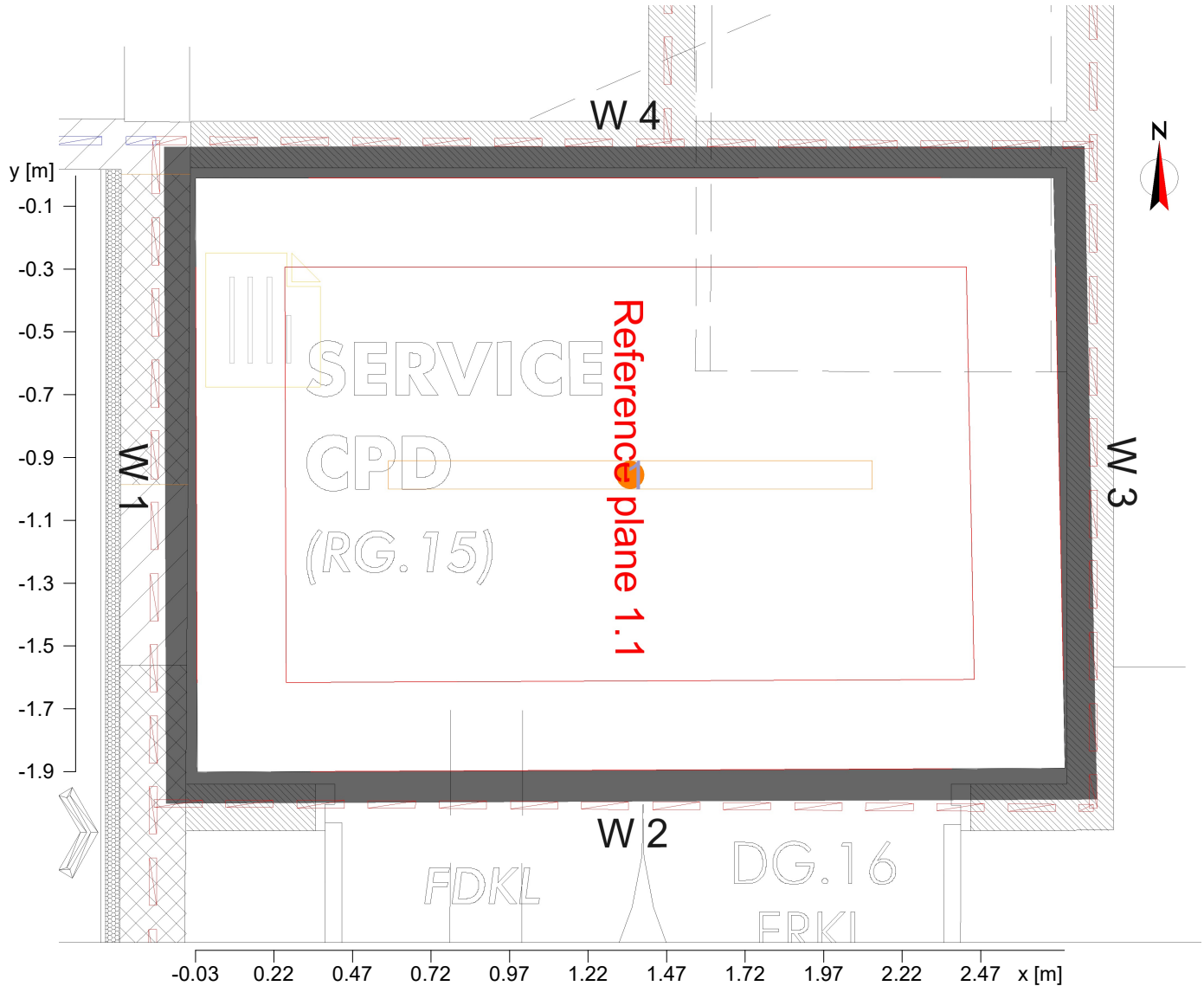


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 218 lx
Minimum illuminance	E_{min}	: 128 lx
Maximum illuminance	E_{max}	: 290 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.70 (0.59)

11 Service CPD RG15

11.1 Description, Service CPD RG15

11.1.1 Floor plan

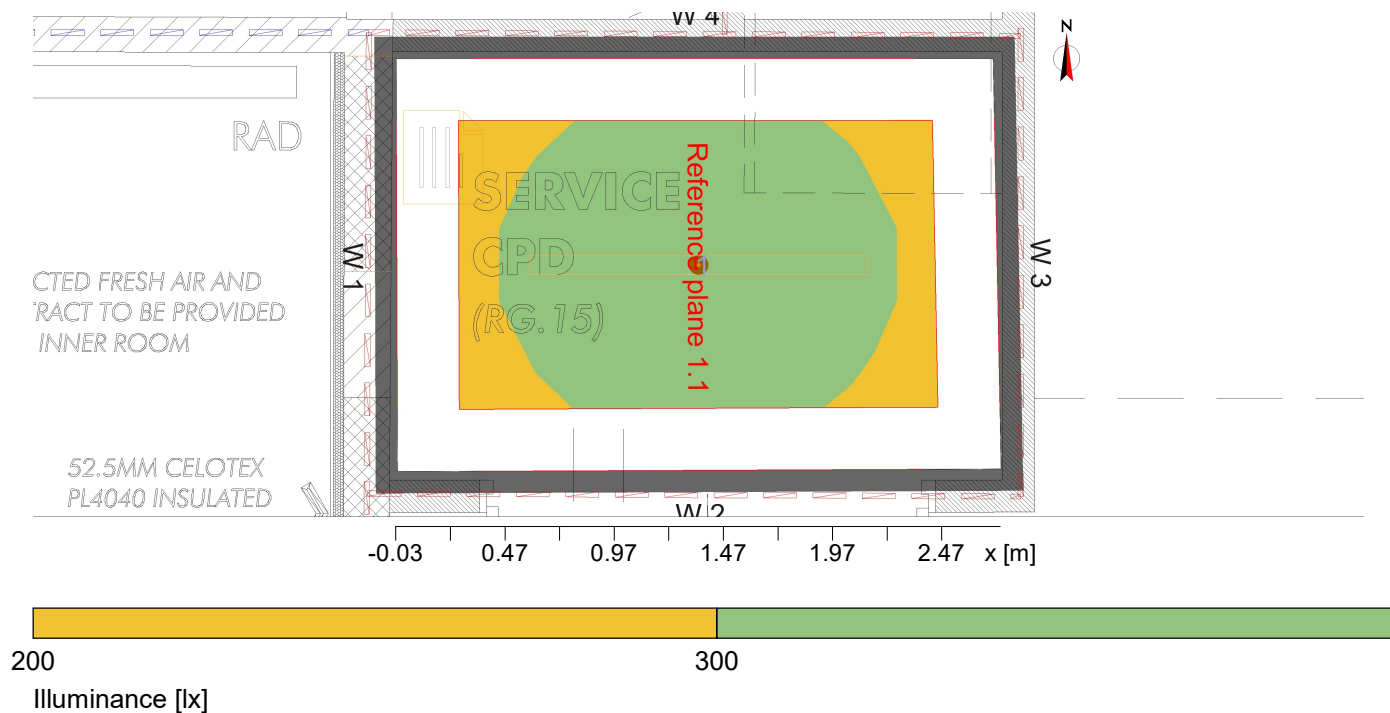


Wall	x	y	Length	Reflectance
1	-31.31 m	19.06 m	1.89 m	50.0 %
2	-28.55 m	19.08 m	2.76 m	50.0 %
3	-28.58 m	20.95 m	1.88 m	50.0 %
4	-31.31 m	20.95 m	2.73 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

11 Service CPD RG15

11.2 Summary, Service CPD RG15

11.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux
 Total power
 Total power per area (5.17 m²)

3900.00 lm
 33.0 W
 6.38 W/m² (1.86 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal	cylindrical
$\bar{E}_m$	343 lx	145 lx
E_{min}	270 lx	136 lx
$E_{min}/\bar{E}_m (U_o)$	0.79	0.94
$E_{min}/E_{max} (U_d)$	0.65	
E_z/E_h		0.31
Position	0.75 m	1.20 m
$R_{UG} (1.6H \ 2.4H)$	≤ 19.4	
Luminaire : (ToughLED™ Pro 1500mm 5ft Single IP66 4000K EM WOP , IEDT0042A)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.5 (Ceiling)	133 lx	0.66
M 1.1 (Wall)	187 lx	0.69
M 1.2 (Wall)	235 lx	0.57
M 1.3 (Wall)	189 lx	0.68
M 1.4 (Wall)	235 lx	0.57

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



11 Service CPD RG15

11.2 Summary, Service CPD RG15

11.2.1 Result overview, Evaluation area 1

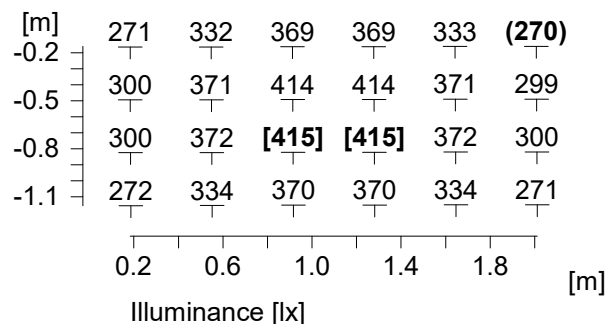
Type No.\Make

14	1 x	JCC	
		Order No.	: !EDT0042A
		Luminaire name	: ToughLED™ Pro 1500mm 5ft Single IP66 4000K EM WOP
		Equipment	: 1 x LED 33 W / 3900 lm

11 Service CPD RG15

11.3 Calculation results, Service CPD RG15

11.3.1 Table, Reference plane 1.1 (E)

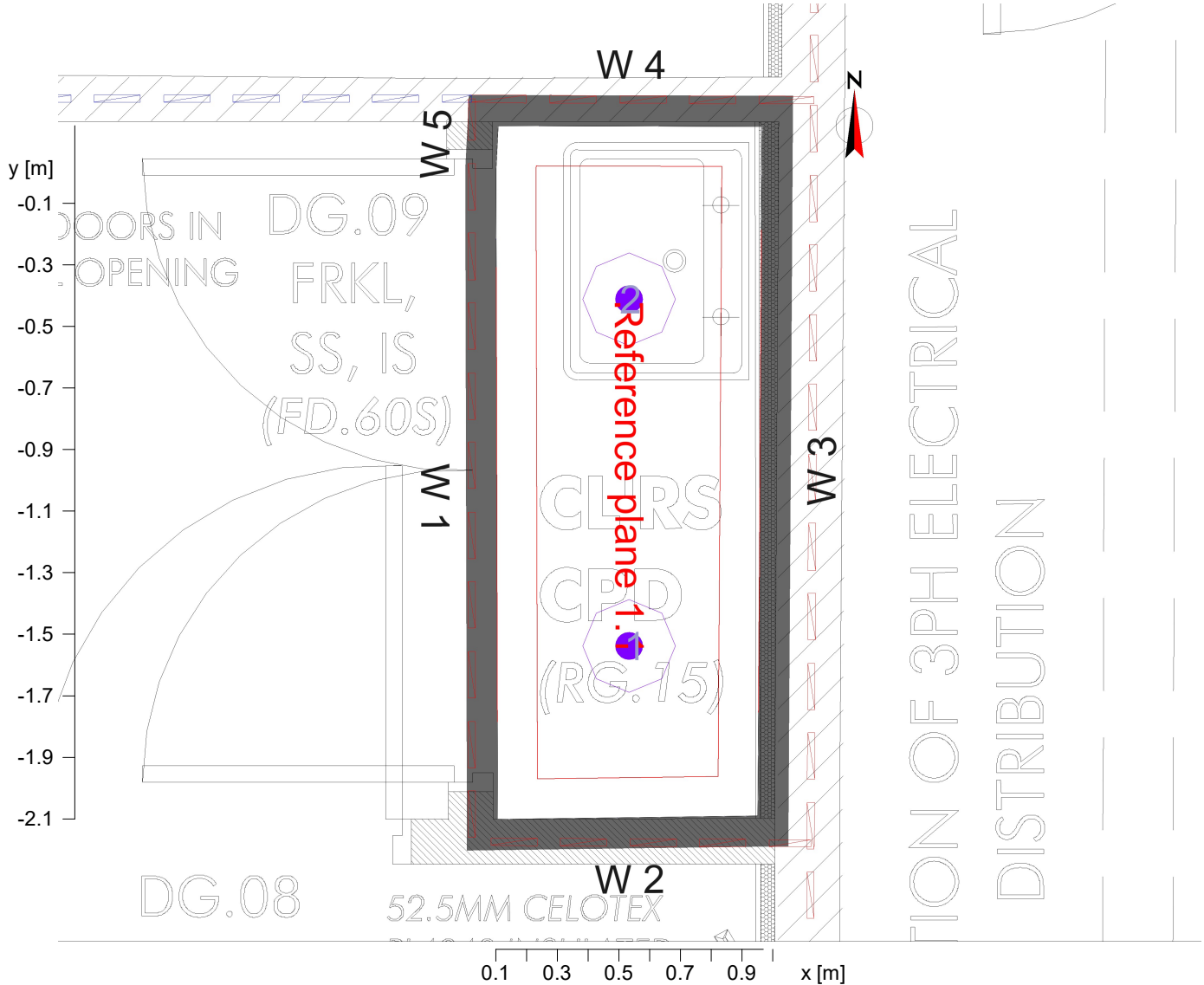


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 343 lx
Minimum illuminance	E_{min}	: 270 lx
Maximum illuminance	E_{max}	: 415 lx
Uniformity U_0	$E_{min}/\bar{E}_m$	: 1 : 1.27 (0.79)

12 Cleaners CPD RG15

12.1 Description, Cleaners CPD RG15

12.1.1 Floor plan

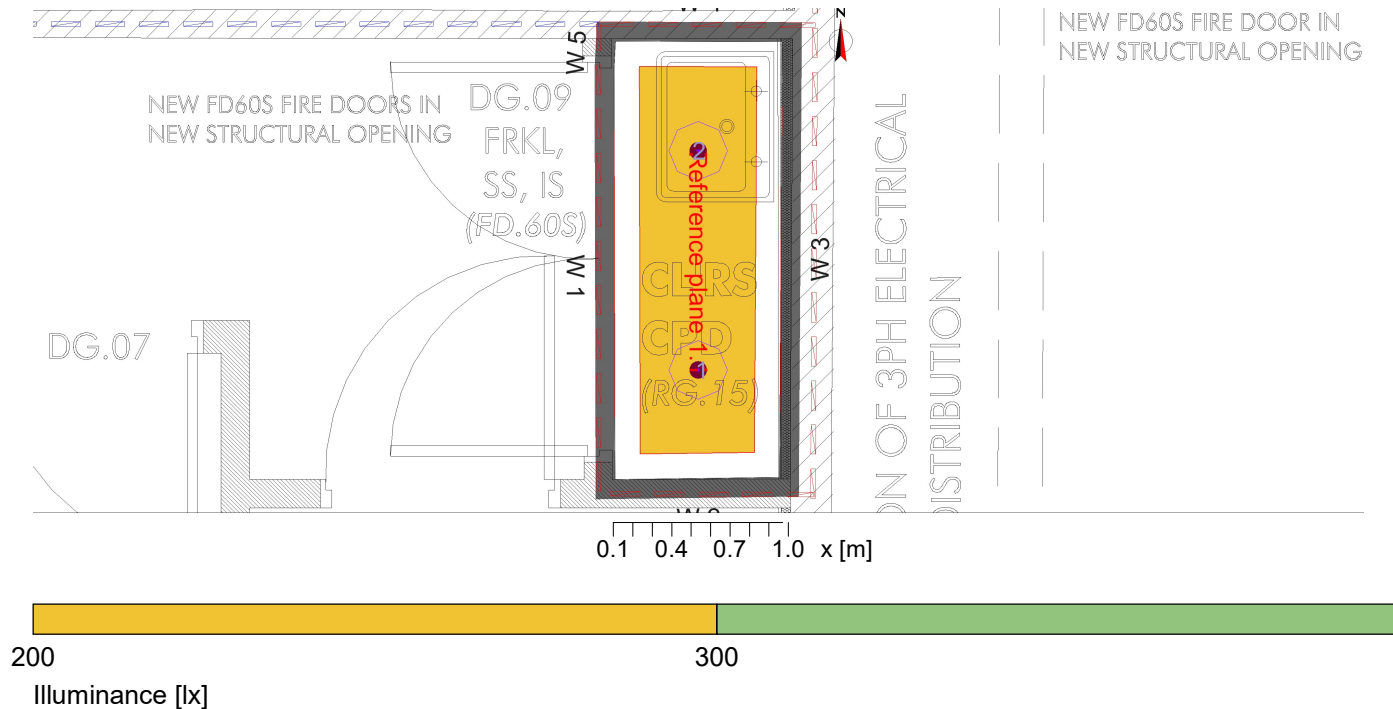


Wall	x	y	Length	Reflectance
1	-32.48 m	15.34 m	2.11 m	50.0 %
2	-31.64 m	15.35 m	0.85 m	50.0 %
3	-31.62 m	17.59 m	2.24 m	50.0 %
4	-32.48 m	17.59 m	0.86 m	50.0 %
5	-32.49 m	17.45 m	0.14 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

12 Cleaners CPD RG15

12.2 Summary, Cleaners CPD RG15

12.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux

2492.00 lm

Total power

24.0 W

Total power per area (1.92 m²)

12.52 W/m² (4.75 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal	cylindrical
$\bar{E}_m$	264 lx	121 lx
E_{min}	213 lx	109 lx
$E_{min}/\bar{E}_m (U_o)$	0.81	0.90
$E_{min}/E_{max} (U_d)$	0.73	
E_z/E_h		0.30
Position	0.75 m	1.20 m
$R_{UG} (0.8H \ 2.0H)$	10.0	

Luminaire :
 (RadiaLED IP65 4000K 12W + With RIM, IEDT007A5)

Hints:

- Encountered room dimensions less than 2H. RUG value has been set to 10 as lower limit.

Major surfaces

	$\bar{E}_m$	U_o
M 1.80 (Ceiling)	178 lx	0.81
M 1.1 (Wall)	225 lx	0.35
M 1.79 (Wall)	225 lx	0.35

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



12 Cleaners CPD RG15

12.2 Summary, Cleaners CPD RG15

12.2.1 Result overview, Evaluation area 1

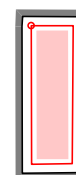
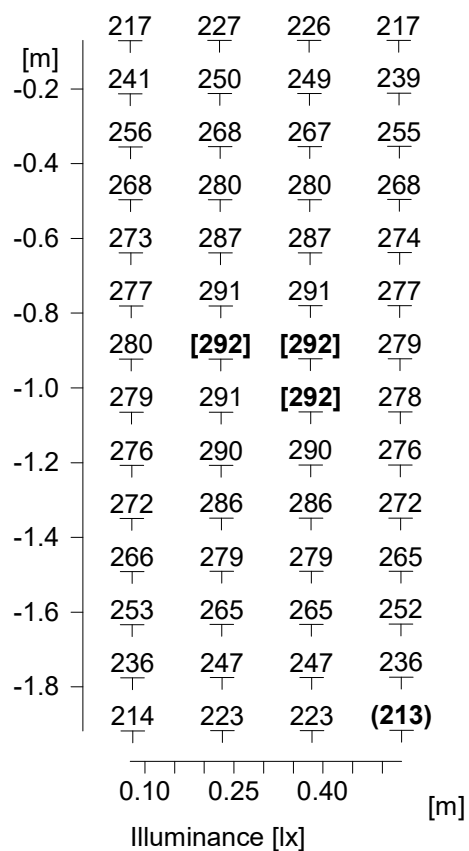
Type No.\Make

9	2 x	JCC	
		Order No.	: !EDT007A5
		Luminaire name	: RadiaLED IP65 4000K 12W + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm

12 Cleaners CPD RG15

12.3 Calculation results, Cleaners CPD RG15

12.3.1 Table, Reference plane 1.1 (E)

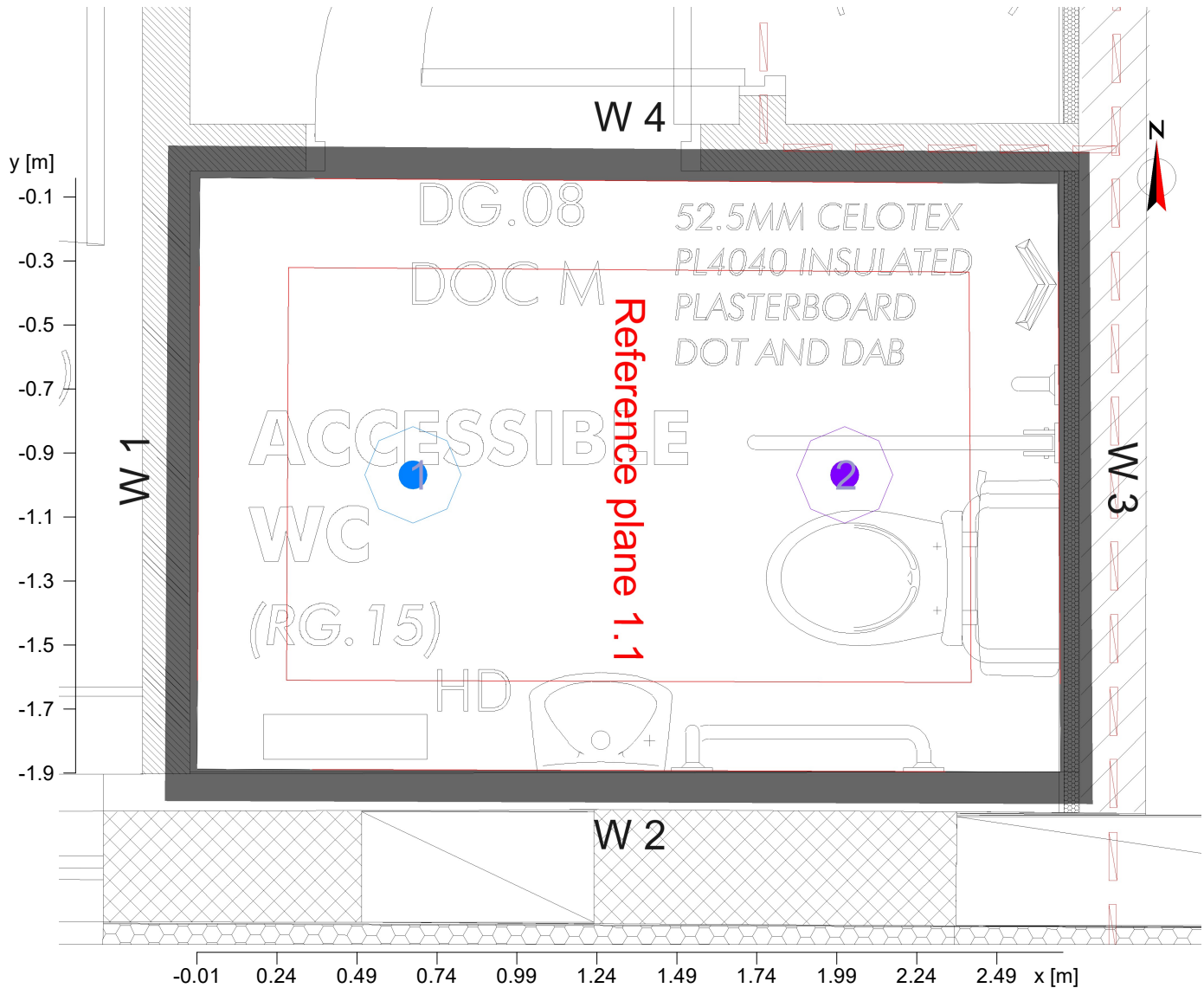


Height reference plane	: 0.75 m
Average illuminance	$\bar{E}_m$: 264 lx
Minimum illuminance	E_{min} : 213 lx
Maximum illuminance	E_{max} : 292 lx
Uniformity U_o	$E_{min}/\bar{E}_m$: 1 : 1.24 (0.81)

13 Accessable WC DG08

13.1 Description, Accessable WC DG08

13.1.1 Floor plan

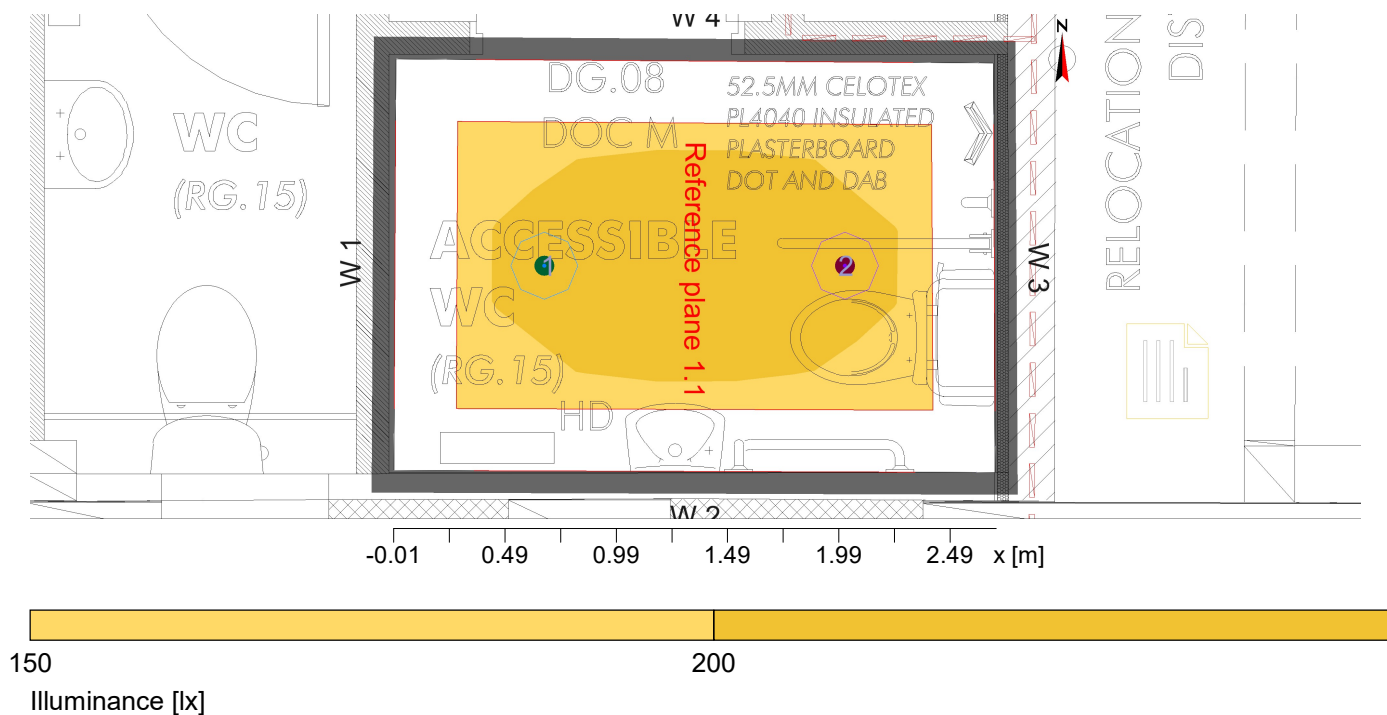


Wall	x	y	Length	Reflectance
1	-34.34 m	13.33 m	1.85 m	50.0 %
2	-31.64 m	13.32 m	2.70 m	50.0 %
3	-31.65 m	15.16 m	1.84 m	50.0 %
4	-34.33 m	15.18 m	2.68 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

13 Accessable WC DG08

13.2 Summary, Accessable WC DG08

13.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux
 Total power
 Total power per area (4.95 m²)

2492.00 lm
 24.0 W
 4.85 W/m² (2.36 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal	cylindrical
$\bar{E}_m$	206 lx	90 lx
E_{min}	181 lx	81 lx
$E_{min}/\bar{E}_m (U_o)$	0.88	0.90
$E_{min}/E_{max} (U_d)$	0.80	
E_z/E_h		0.32
Position	0.75 m	1.20 m
$R_{UG} (1.6H \ 2.3H)$	≤ 18.1	
Luminaire : (RadialLED IP65 4000K 12W Emergency + With RIM, IEDT007A6)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.5 (Ceiling)	70 lx	0.81
M 1.1 (Wall)	139 lx	0.55
M 1.2 (Wall)	131 lx	0.63
M 1.3 (Wall)	139 lx	0.54
M 1.4 (Wall)	131 lx	0.63

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



13 Accessable WC DG08

13.2 Summary, Accessable WC DG08

13.2.1 Result overview, Evaluation area 1

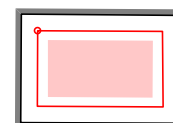
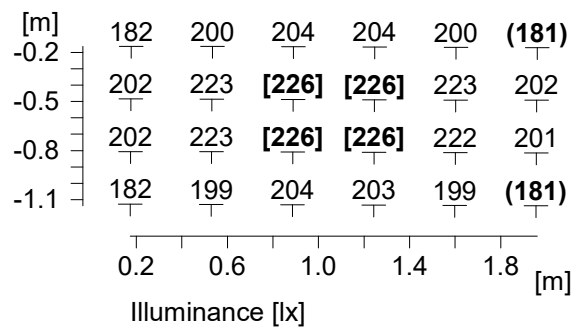
Type No.\Make

		JCC	
9	1 x	Order No.	: !EDT007A5
		Luminaire name	: RadiaLED IP65 4000K 12W + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm
10	1 x	Order No.	: !EDT007A6
		Luminaire name	: RadiaLED IP65 4000K 12W Emergency + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm

13 Accessable WC DG08

13.3 Calculation results, Accessable WC DG08

13.3.1 Table, Reference plane 1.1 (E)

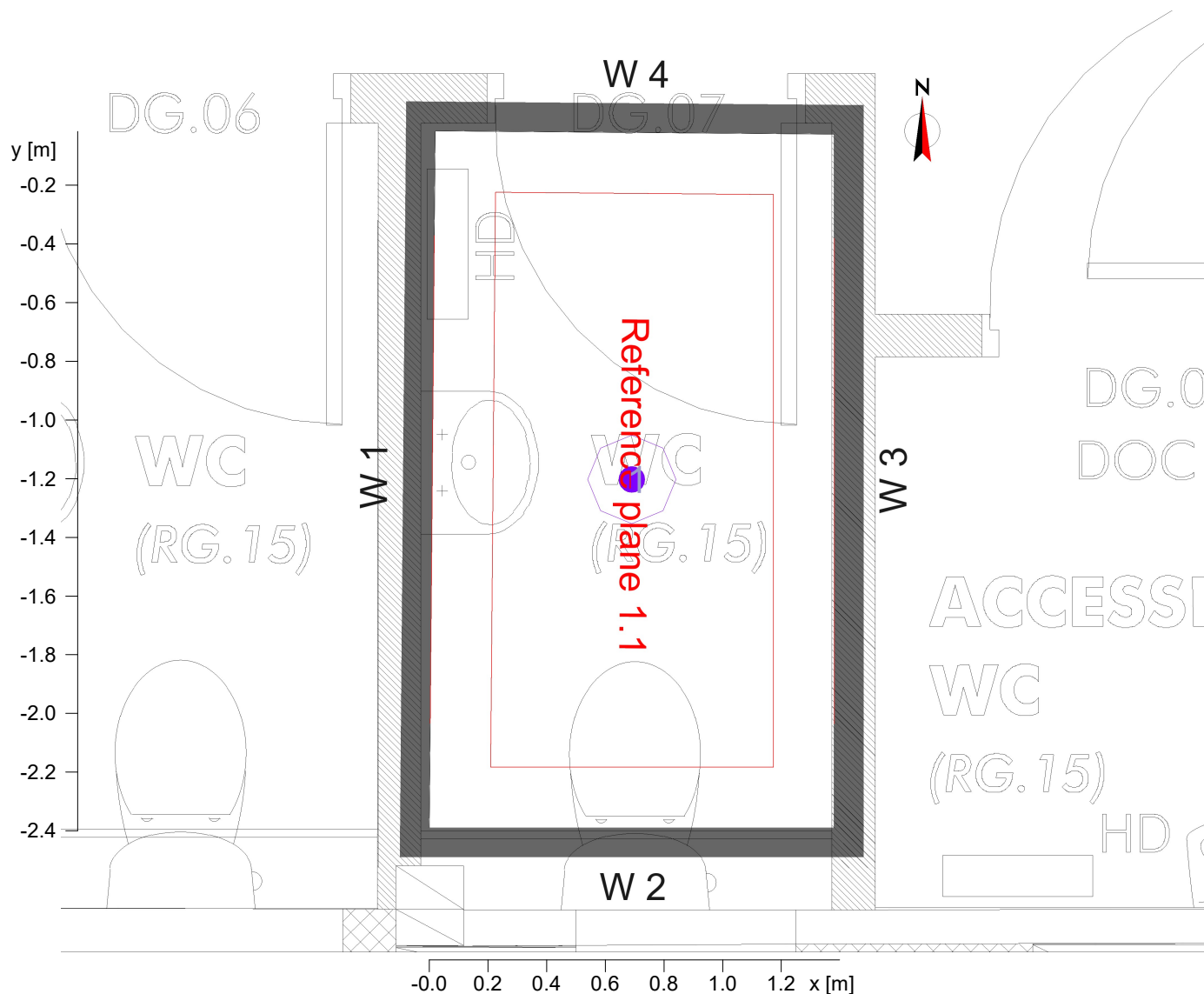


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 206 lx
Minimum illuminance	E_{min}	: 181 lx
Maximum illuminance	E_{max}	: 226 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.14 (0.88)

14 WC 1 RG15 DG07

14.1 Description, WC 1 RG15 DG07

14.1.1 Floor plan

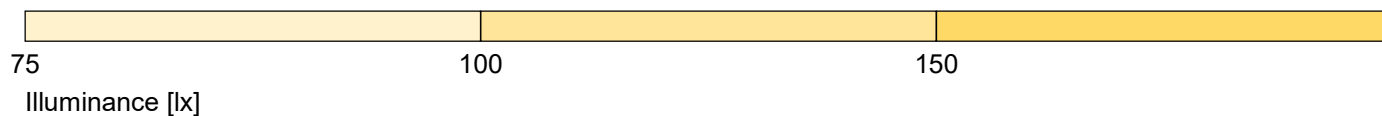
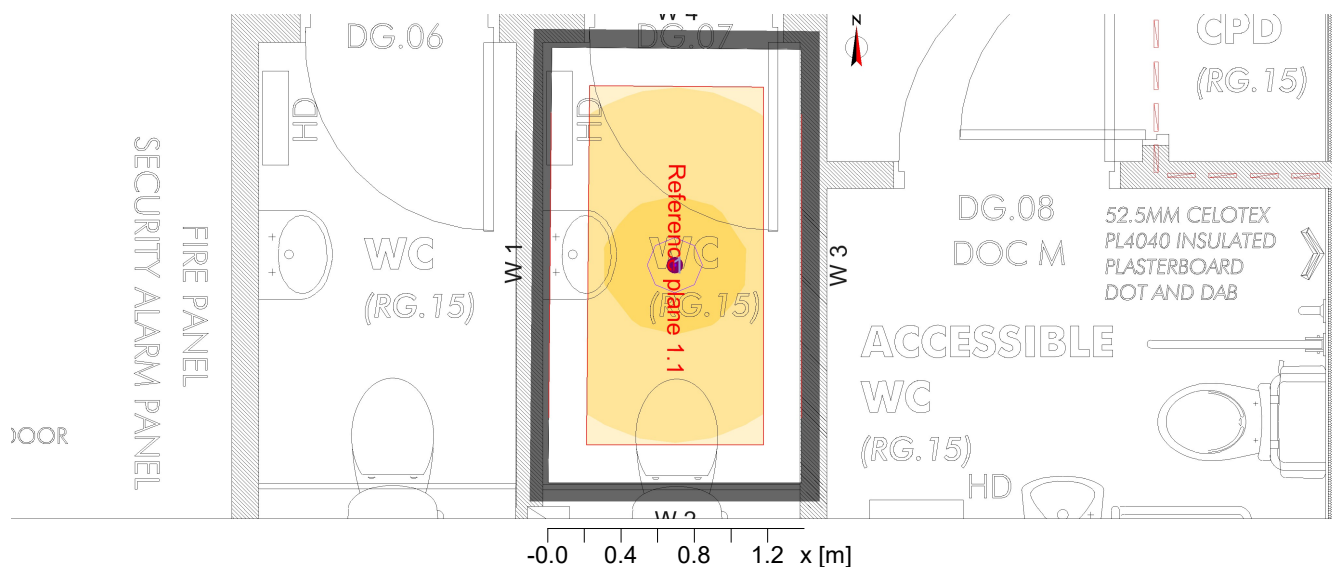


Wall	x	y	Length	Reflectance
1	-35.88 m	13.59 m	2.37 m	50.0 %
2	-34.50 m	13.59 m	1.38 m	50.0 %
3	-34.50 m	15.95 m	2.36 m	50.0 %
4	-35.86 m	15.97 m	1.36 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

14 WC 1 RG15 DG07

14.2 Summary, WC 1 RG15 DG07

14.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux
 Total power
 Total power per area (3.24 m²)

1246.00 lm
 12.0 W
 3.71 W/m² (2.78 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

Horizontal
 $\bar{E}_m$ 133 lx
 E_{min} 98 lx
 $E_{min}/\bar{E}_m (U_o)$ 0.74
 $E_{min}/E_{max} (U_d)$ 0.60
 E_z/E_h
 Position 0.75 m
 $R_{UG} (1.2H \ 2.1H)$ ≤ 17.6
 Luminaire :
 (RadialLED IP65 4000K 12W + With RIM, IEDT007A5)

cylindrical
 57 lx
 45 lx
 0.78
 0.30
 1.20 m

Major surfaces

$\bar{E}_m$
 M 1.5 (Ceiling) 52.5 lx
 M 1.1 (Wall) 101 lx
 M 1.3 (Wall) 101 lx

U_o
 0.64
 0.46
 0.46

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



14 WC 1 RG15 DG07

14.2 Summary, WC 1 RG15 DG07

14.2.1 Result overview, Evaluation area 1

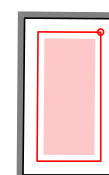
Type No.\Make

9	1 x	JCC	
		Order No.	: !EDT007A5
		Luminaire name	: RadiaLED IP65 4000K 12W + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm

14 WC 1 RG15 DG07

14.3 Calculation results, WC 1 RG15 DG07

14.3.1 Table, Reference plane 1.1 (E)

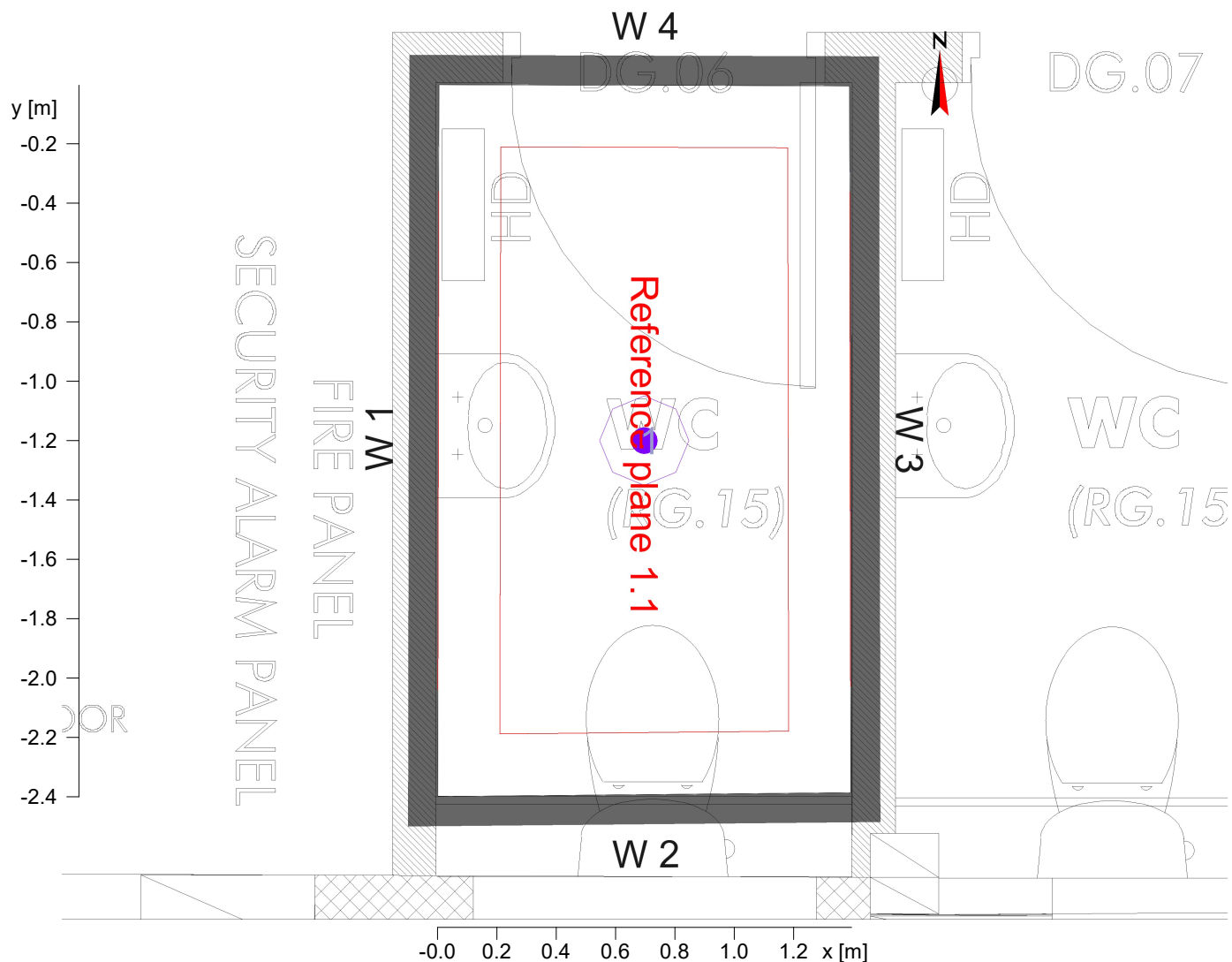


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 133 lx
Minimum illuminance	E_{min}	: 98 lx
Maximum illuminance	E_{max}	: 164 lx
Uniformity U_0	$E_{min}/\bar{E}_m$	: 1 : 1.35 (0.74)

15 WC 2 RG15 DG06

15.1 Description, WC 2 RG15 DG06

15.1.1 Floor plan

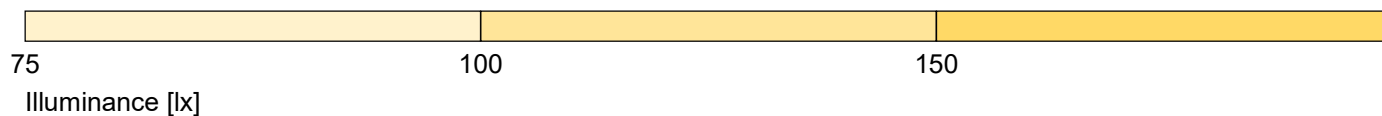
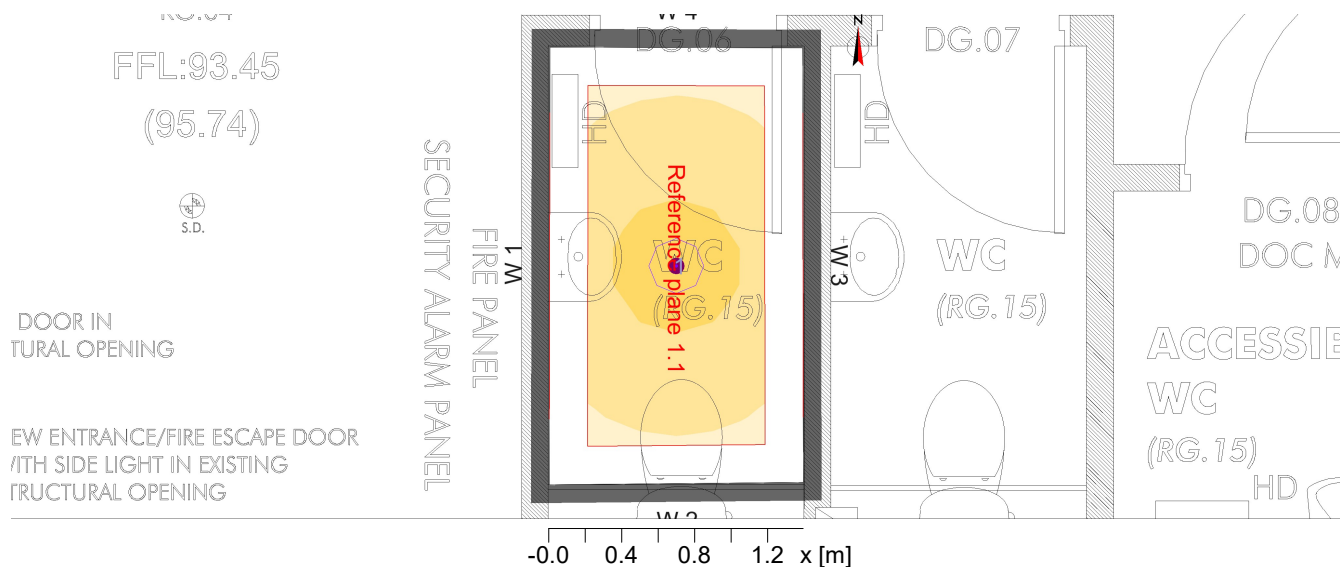


Wall	x	y	Length	Reflectance
1	-37.45 m	13.59 m	2.40 m	50.0 %
2	-36.06 m	13.60 m	1.39 m	50.0 %
3	-36.06 m	15.98 m	2.38 m	50.0 %
4	-37.44 m	15.98 m	1.38 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

15 WC 2 RG15 DG06

15.2 Summary, WC 2 RG15 DG06

15.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	2.40 m
Maintenance factor	0.80
Total luminous flux	1246.00 lm
Total power	12.0 W
Total power per area (3.31 m²)	3.63 W/m² (2.78 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	Horizontal	cylindrical
E_{min}	131 lx	56 lx
$E_{min}/\bar{E}_m (U_o)$	95 lx	44 lx
$E_{min}/E_{max} (U_d)$	0.73	0.78
E_z/E_h	0.58	0.29
Position	0.75 m	1.20 m
$R_{UG} (1.2H \ 2.1H)$	≤ 17.6	
Luminaire : (RadialLED IP65 4000K 12W + With RIM, IEDT007A5)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.5 (Ceiling)	51.7 lx	0.66
M 1.1 (Wall)	99.4 lx	0.46
M 1.3 (Wall)	99.7 lx	0.46

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



15 WC 2 RG15 DG06

15.2 Summary, WC 2 RG15 DG06

15.2.1 Result overview, Evaluation area 1

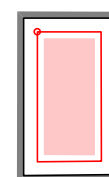
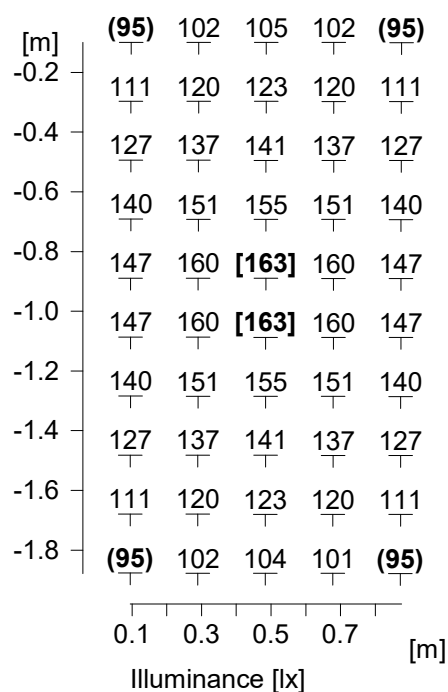
Type No.\Make

9	1 x	JCC	
		Order No.	: !EDT007A5
		Luminaire name	: RadiaLED IP65 4000K 12W + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm

15 WC 2 RG15 DG06

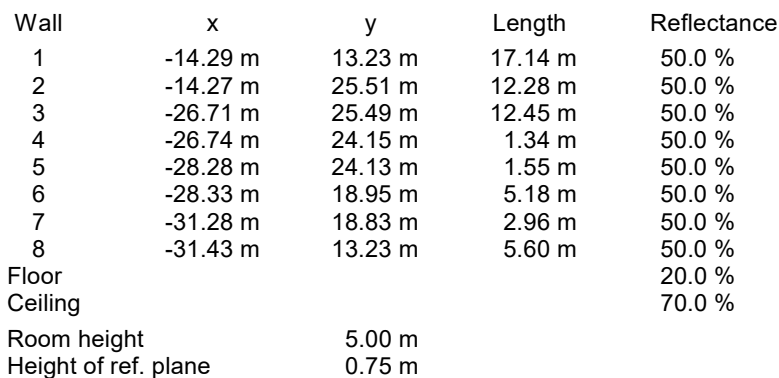
15.3 Calculation results, WC 2 RG15 DG06

15.3.1 Table, Reference plane 1.1 (E)



Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 131 lx
Minimum illuminance	E_{min}	: 95 lx
Maximum illuminance	E_{max}	: 163 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.37 (0.73)

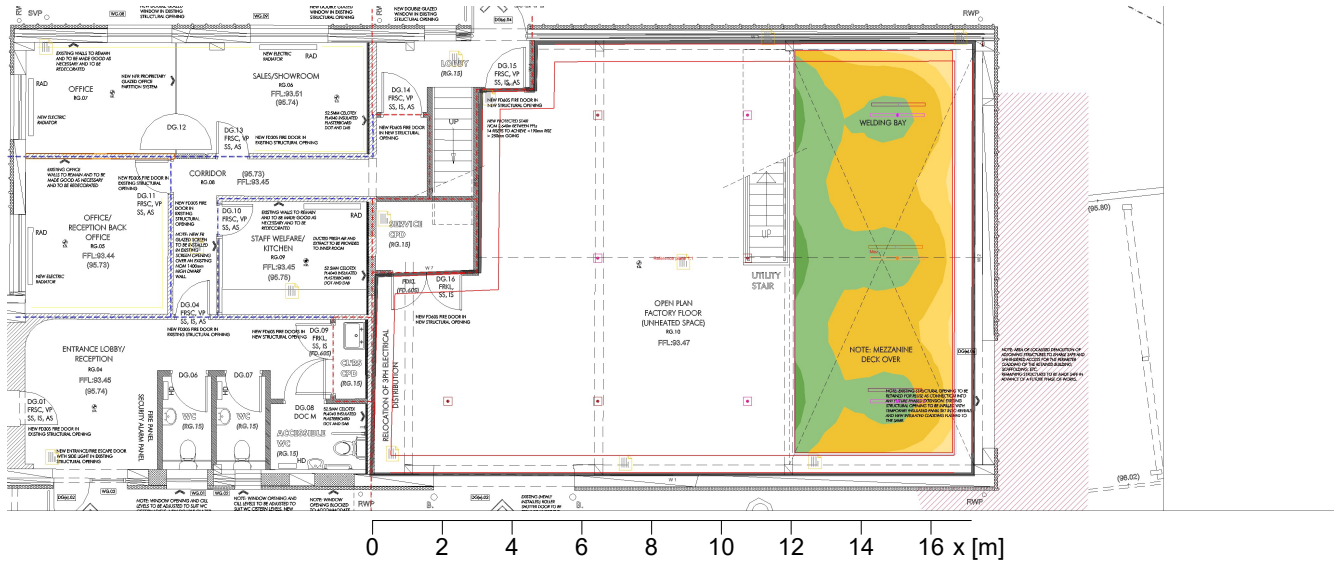
16.1.1 Floor plan



16 Open Plan Factory Floor / Mez RG10

16.2 Summary, Open Plan Factory Floor / Mez RG10

16.2.1 Result overview, Mez



Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	3.01 m
Maintenance factor	0.80

Total luminous flux	124900 lm
Total power	898 W
Total power per area (187.26 m ²)	4.80 W/m ²

Illuminance

Average illuminance	$\bar{E}_m$	285 lx
Minimum illuminance	E_{min}	120 lx
Maximum illuminance	E_{max}	531 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:2.39 (0.42)
Diversity U_d	E_{min}/E_{max}	1:4.44 (0.23)

Type No. Make

JCC		
13	4 x	Order No. : IEDT0041A
		Luminaire name : ToughLED™ Pro 1500mm 5ft Single IP66 4000K WOP
		Equipment : 1 x LED 29 W / 3900 lm
14	2 x	Order No. : IEDT0042A
		Luminaire name : ToughLED™ Pro 1500mm 5ft Single IP66 4000K EM WOP
		Equipment : 1 x LED 33 W / 3900 lm

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



16 Open Plan Factory Floor / Mez RG10

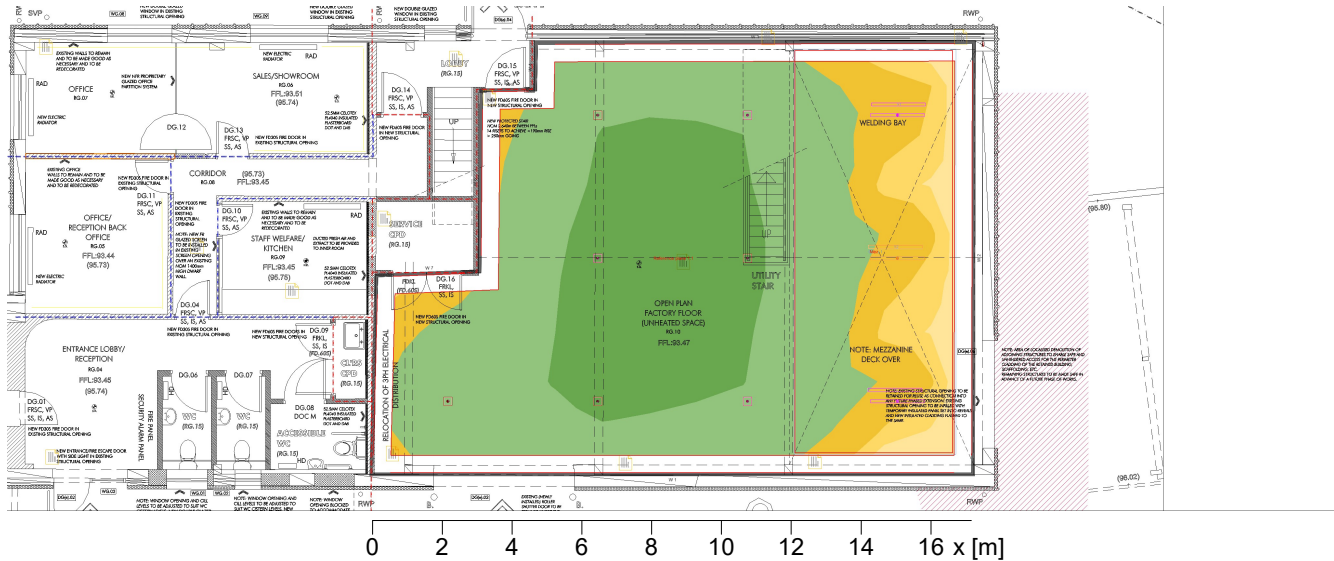
16.2 Summary, Open Plan Factory Floor / Mez RG10

16.2.1 Result overview, Mez

15	3 x	Order No.	: !EDT0108A
		Luminaire name	: Toughbay 100W IP65 1-10V dimmable 120°
		Equipment	: 1 x LED 100 W / 14500 lm
16	4 x	Order No.	: !EDT0109
		Luminaire name	: Toughbay 104W IP65 1-10V dimmable 120° Emergency
		Equipment	: 1 x LED 104 W / 14500 lm

16.2 Summary, Open Plan Factory Floor / Mez RG10

16.2.2 Result overview, Evaluation area 1



General

Calculation algorithm used
 Maintenance factor

Average indirect fraction
 0.80

Total luminous flux
 Total power
 Total power per area (187.26 m²)

124900.00 lm
 898.0 W
 4.80 W/m² (1.18 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

Horizontal
 $\bar{E}_m$ 406 lx
 E_{min} 144 lx
 $E_{min}/\bar{E}_m (U_o)$ 0.35
 $E_{min}/E_{max} (U_d)$ 0.25
 E_z/E_h 0.41
 Position 0.75 m
 Rug (3.3H 4.6H) 30.0
 Luminaire :
 (Toughbay 104W IP65 1-10V dimmable 120° Emergency , !EDT0109)
 Hints:
 - The Rug value has been limited to the upper bound of 30.

cylindrical
 168 lx
 90 lx
 0.54
 0.41
 1.20 m

Major surfaces

Surface	$\bar{E}_m$	U_o
M 1.9 (Ceiling)	103 lx	0.70
M 1.1 (Wall)	245 lx	0.32
M 1.2 (Wall)	120 lx	0.66
M 1.3 (Wall)	236 lx	0.27

Object : Assentech - Trispen Project
 Installation : Trispen Project
 Project number : Assentech Rev2 Plans
 Date : 14.06.2024



16.2 Summary, Open Plan Factory Floor / Mez RG10

16.2.2 Result overview, Evaluation area 1

M 1.5 (Wall)	152 lx	0.38
M 1.6 (Wall)	210 lx	0.46
M 1.7 (Wall)	163 lx	0.50
M 1.8 (Wall)	229 lx	0.37

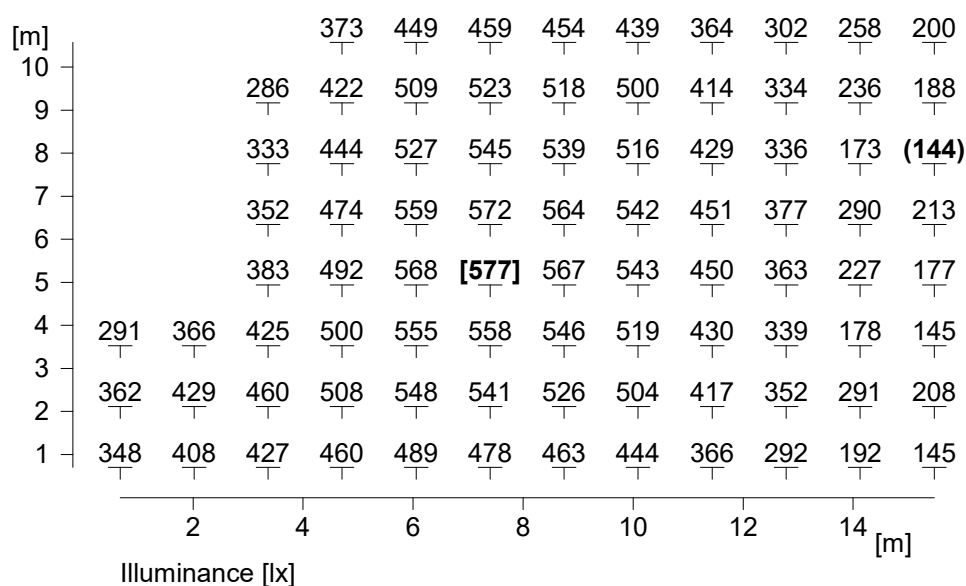
Type No. Make

JCC		
13	4 x	Order No. : IEDT0041A
		Luminaire name : ToughLED™ Pro 1500mm 5ft Single IP66 4000K WOP
		Equipment : 1 x LED 29 W / 3900 lm
14	2 x	Order No. : IEDT0042A
		Luminaire name : ToughLED™ Pro 1500mm 5ft Single IP66 4000K EM WOP
		Equipment : 1 x LED 33 W / 3900 lm
15	3 x	Order No. : IEDT0108A
		Luminaire name : Toughbay 100W IP65 1-10V dimmable 120°
		Equipment : 1 x LED 100 W / 14500 lm
16	4 x	Order No. : IEDT0109
		Luminaire name : Toughbay 104W IP65 1-10V dimmable 120° Emergency
		Equipment : 1 x LED 104 W / 14500 lm

16 Open Plan Factory Floor / Mez RG10

16.3 Calculation results, Open Plan Factory Floor / Mez RG10

16.3.1 Table, Reference plane 1.1 (E)



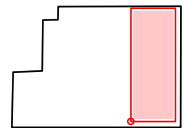
Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 406 lx
Minimum illuminance	E_{min}	: 144 lx
Maximum illuminance	E_{max}	: 577 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 2.82 (0.35)

16.3 Calculation results, Open Plan Factory Floor / Mez RG10

16.3.2 Table, Mez (E)

[m]	294	228	196	186	183	173	150	(120)
11	394	290	247	244	252	243	206	157
10	476	336	286	294	316	309	258	188
	503	354	301	312	338	331	275	200
9	469	343	293	292	304	293	248	187
	410	318	272	258	255	241	209	167
8	376	303	261	242	231	216	189	156
	391	312	269	251	242	226	198	162
7	448	340	292	283	286	272	234	183
	512	371	317	321	339	329	277	207
6	531	379	325	334	359	349	292	214
	493	362	311	310	322	311	264	200
5	426	331	284	271	269	254	220	176
	382	308	265	246	236	221	194	160
4	385	308	266	248	239	224	197	161
	433	330	284	274	277	265	228	178
3	491	355	303	308	328	320	270	200
	505	356	305	318	347	341	284	206
2	456	327	280	286	306	299	251	186
1	361	273	234	229	234	224	192	149
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0

Illuminance [lx]

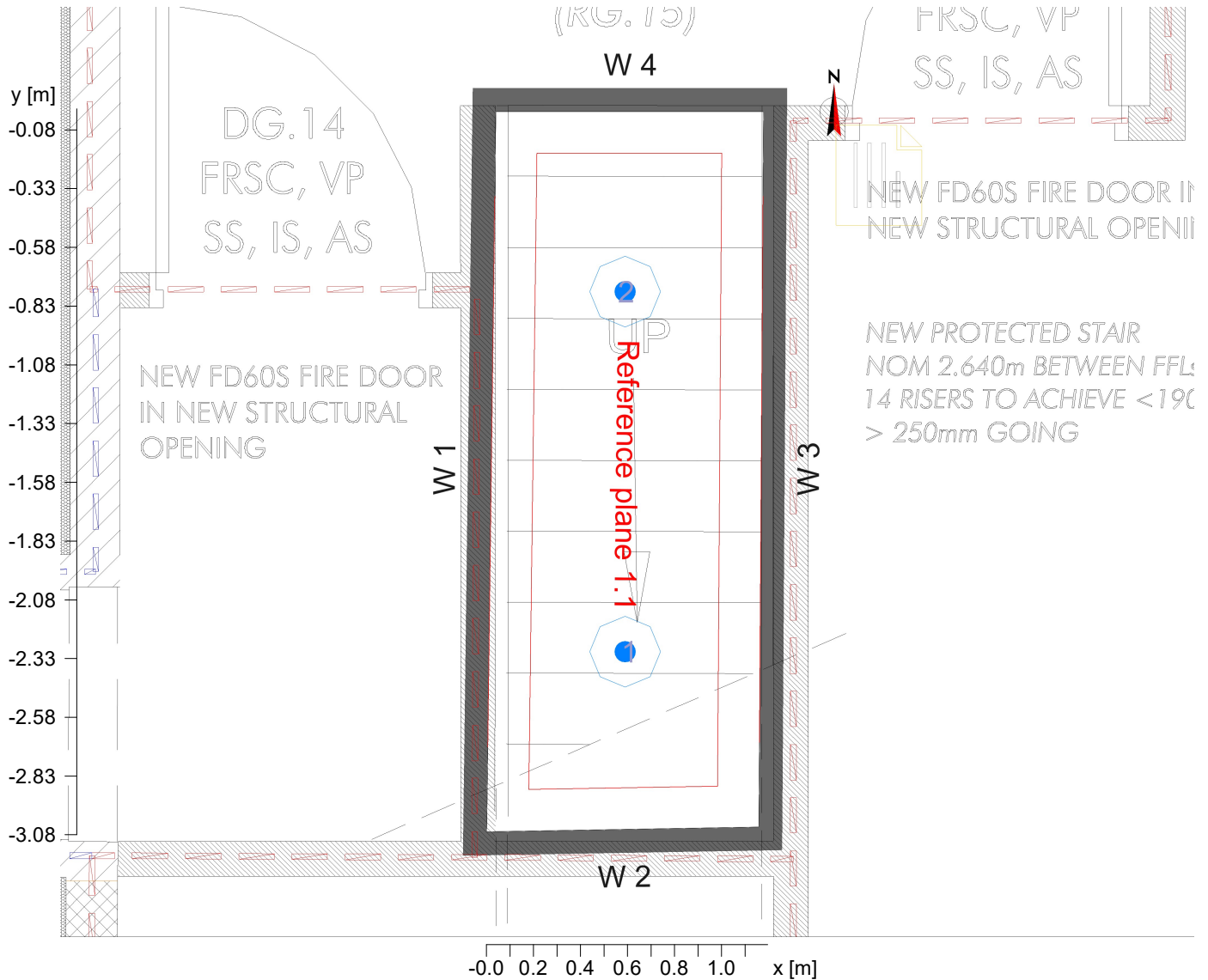


Height reference plane	: 3.01 m
Average illuminance	$\bar{E}_m$: 285 lx
Minimum illuminance	E_{min} : 120 lx
Maximum illuminance	E_{max} : 531 lx
Uniformity U_o	$E_{min}/\bar{E}_m$: 1 : 2.39 (0.42)

17 Stair to RG15 to FF

17.1 Description, Stair to RG15 to FF

17.1.1 Floor plan

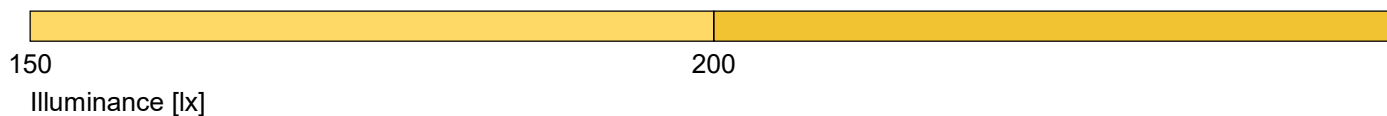
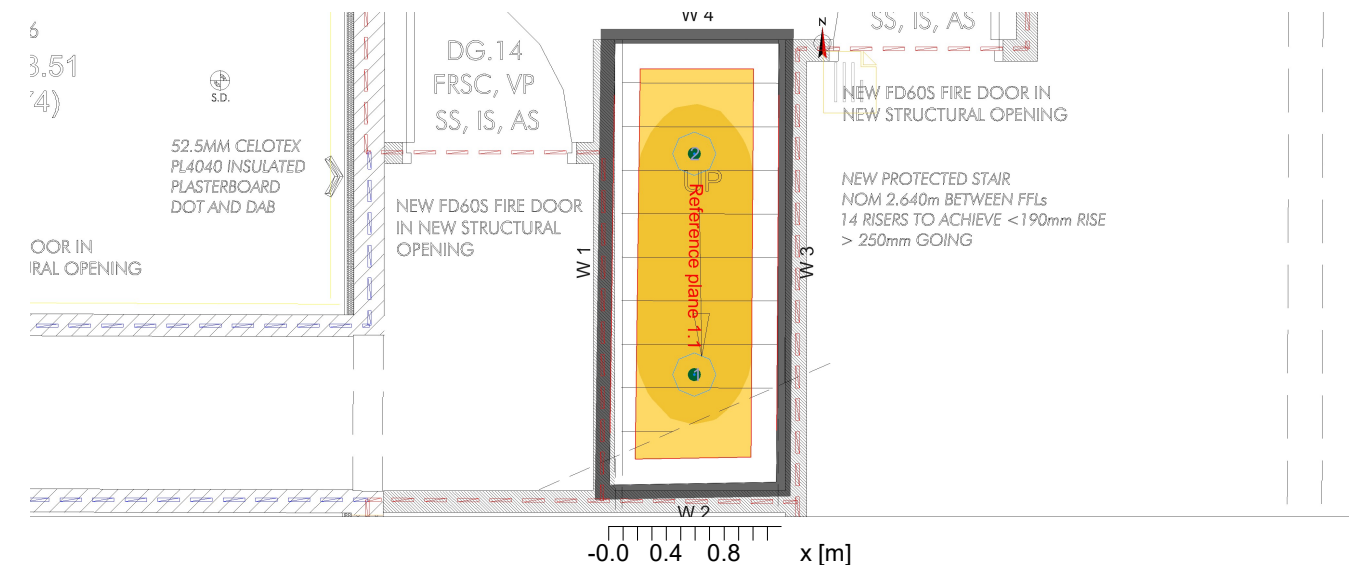


Wall	x	y	Length	Reflectance
1	-29.76 m	21.17 m	3.06 m	50.0 %
2	-28.60 m	21.19 m	1.16 m	50.0 %
3	-28.58 m	24.23 m	3.04 m	50.0 %
4	-29.72 m	24.23 m	1.14 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

17 Stair to RG15 to FF

17.2 Summary, Stair to RG15 to FF

17.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux
 Total power
 Total power per area (3.50 m²)

2492.00 lm
 24.0 W
 6.86 W/m² (3.25 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal	cylindrical
$\bar{E}_m$	211 lx	95 lx
E_{min}	165 lx	76 lx
$E_{min}/\bar{E}_m (U_o)$	0.78	0.80
$E_{min}/E_{max} (U_d)$	0.71	
E_z/E_h		0.32
Position	0.75 m	1.20 m
$R_{UG} (1.0H \ 2.7H)$	≤ 18.7	
Luminaire : (RadialLED IP65 4000K 12W Emergency + With RIM, IEDT007A6)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.5 (Ceiling)	98.9 lx	0.75
M 1.1 (Wall)	159 lx	0.47
M 1.3 (Wall)	159 lx	0.47

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



17 Stair to RG15 to FF

17.2 Summary, Stair to RG15 to FF

17.2.1 Result overview, Evaluation area 1

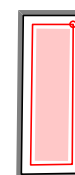
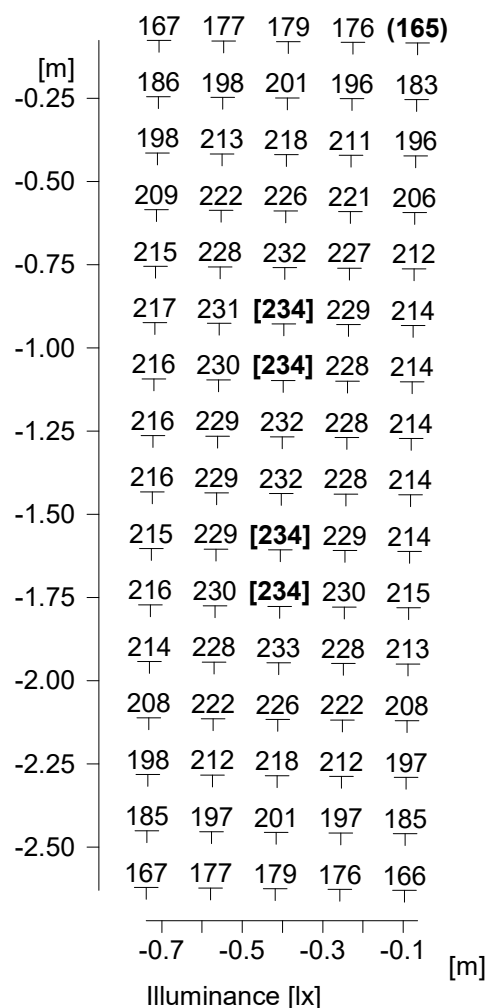
Type No.\Make

10	2 x	JCC	
		Order No.	: !EDT007A6
		Luminaire name	: RadiaLED IP65 4000K 12W Emergency + With RIM
		Equipment	: 1 x Bulkhead 12W 12 W / 1246 lm

17 Stair to RG15 to FF

17.3 Calculation results, Stair to RG15 to FF

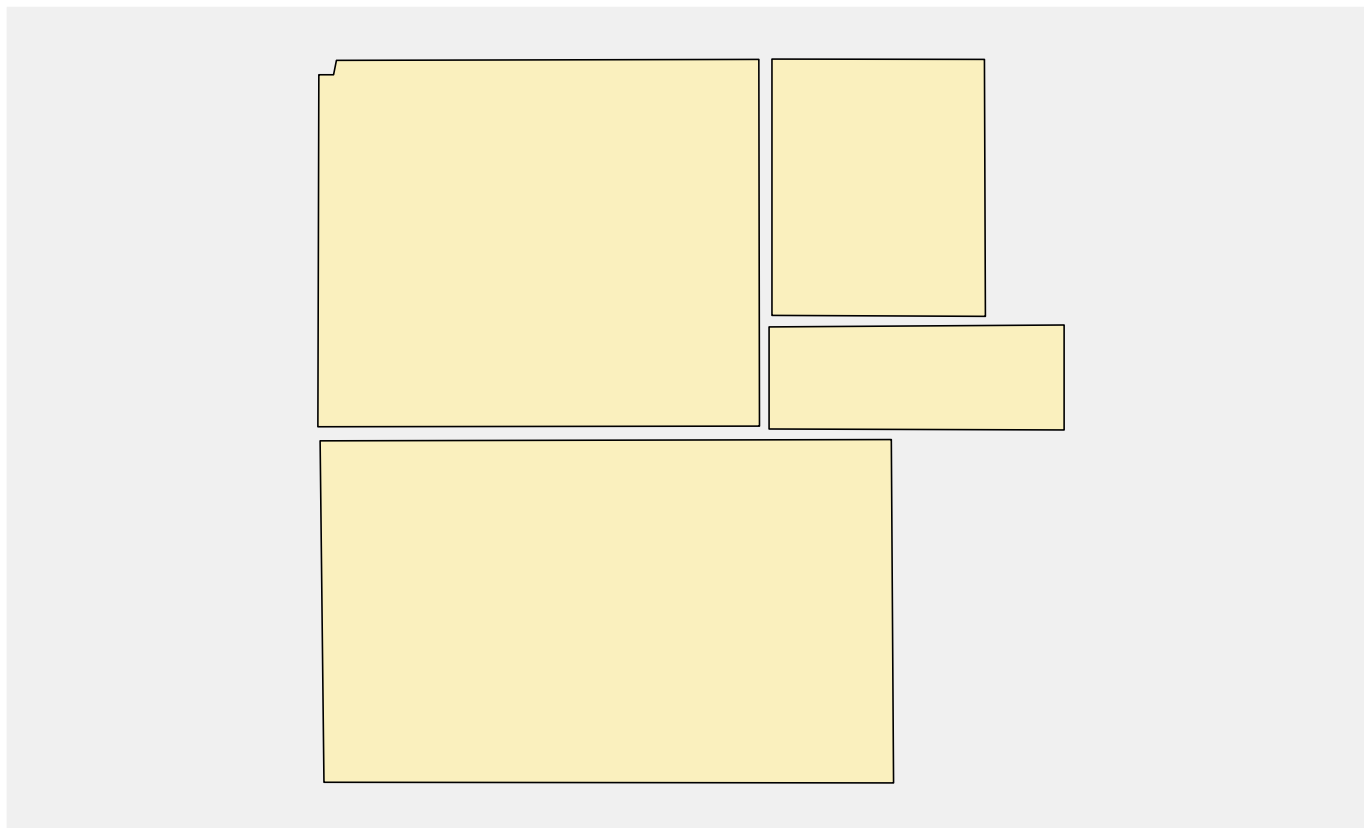
17.3.1 Table, Reference plane 1.1 (E)



Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 211 lx
Minimum illuminance	E_{min}	: 165 lx
Maximum illuminance	E_{max}	: 234 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.28 (0.78)

Summary, Floor 2

.1 Floor overview



Number of rooms	4	
Total area	73 m²	Calculated
Number of luminaires	13	
Total luminous flux	47340 lm	
Total power	370 W	
Total power per area	5.04 W/m²	

Parts list

Type No. Make

		JCC	
4	1 x	Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 22 W / 2780 lm
5	1 x	Order No.	: !EDT0032A
		Luminaire name	: Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM
		Equipment	: 1 x LED 24 W / 2860 lm
8	1 x	Order No.	: !EDT0002A
		Luminaire name	: LED 4' Single IP20 Emergency
		Equipment	: 1 x LED 22 W / 2700 lm

Object : Assentech - Trispen Project
 Installation : Trispen Project
 Project number : Assentech Rev2 Plans
 Date : 14.06.2024

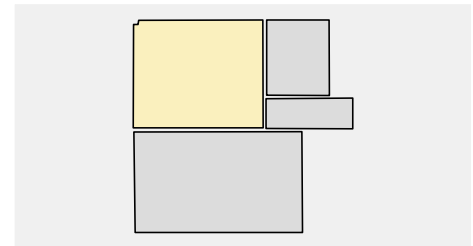
Summary, Floor 2

.1 Floor overview

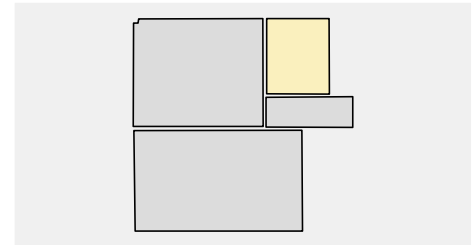
13	7 x	Order No.	: IEDT0041A
		Luminaire name	: ToughLED™ Pro 1500mm 5ft Single IP66 4000K WOP
		Equipment	: 1 x LED 29 W / 3900 lm
14	3 x	Order No.	: IEDT0042A
		Luminaire name	: ToughLED™ Pro 1500mm 5ft Single IP66 4000K EM WOP
		Equipment	: 1 x LED 33 W / 3900 lm

Rooms

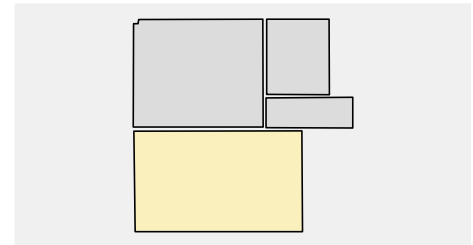
Store RF03	4 x Luminaires
Total luminous flux	15600 lm
Total power	120 W
Total power per area (27 m²)	4.48 W/m²
$\bar{E}_m$	392 lx
E_{min}	322 lx
$E_{min}/\bar{E}_m (U_o)$	0.82
RUG	≤ 23.1



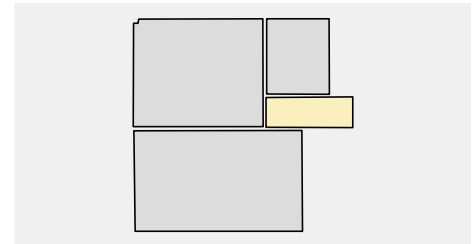
Engineers Office RF02	2 x Luminaires
Total luminous flux	5640 lm
Total power	46 W
Total power per area (9 m²)	5.08 W/m²
$\bar{E}_m$	424 lx
E_{min}	334 lx
$E_{min}/\bar{E}_m (U_o)$	0.79
RUG	≤ 16.4



Clean Room RF04	6 x Luminaires
Total luminous flux	23400 lm
Total power	182 W
Total power per area (32 m²)	5.61 W/m²
$\bar{E}_m$	484 lx
E_{min}	436 lx
$E_{min}/\bar{E}_m (U_o)$	0.90
RUG	≤ 23.7



Protected Corridor RF01	1 x Luminaires
Total luminous flux	2700 lm
Total power	22 W
Total power per area (5 m²)	4.34 W/m²
$\bar{E}_m$	210 lx
E_{min}	107 lx
$E_{min}/\bar{E}_m (U_o)$	0.51
RUG	≤ 18.3



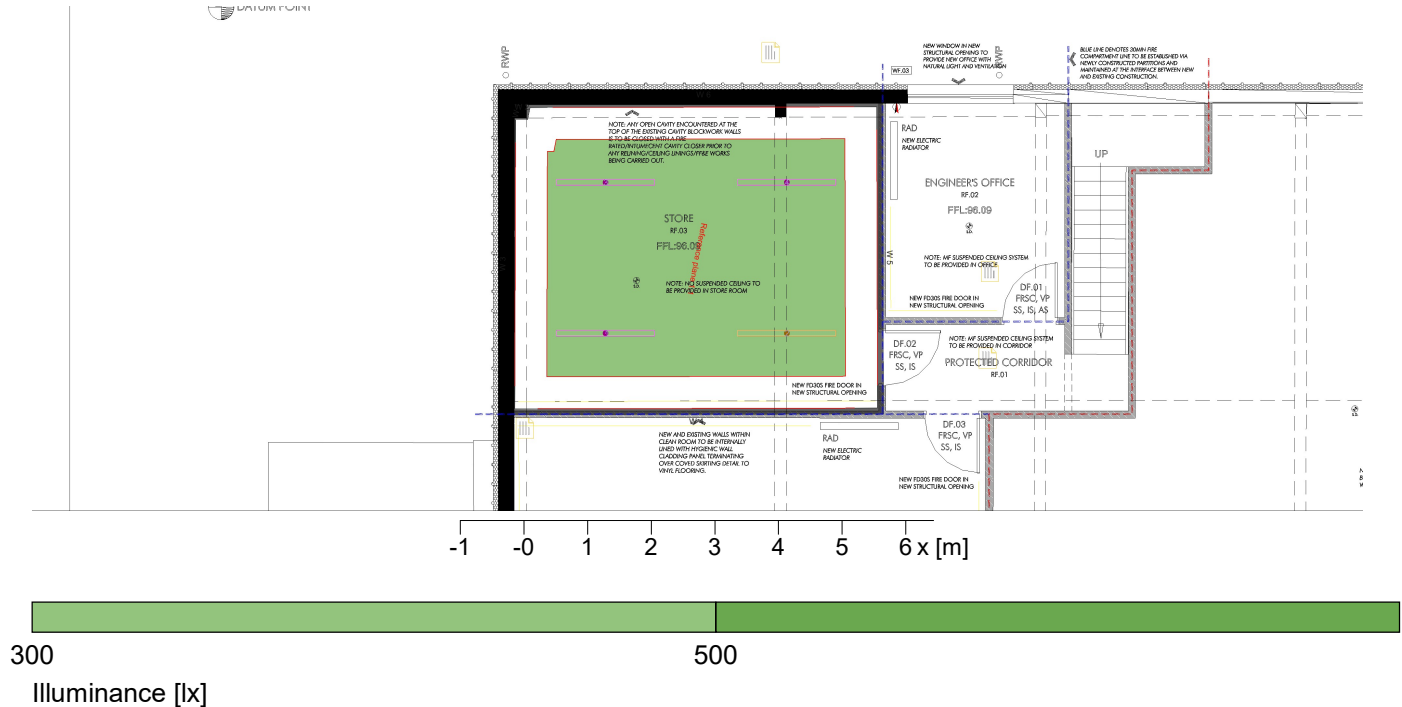
Object : Assentech - Trispen Project
 Installation : Trispen Project
 Project number : Assentech Rev2 Plans
 Date : 14.06.2024



1 Store RF03

1.2 Summary, Store RF03

1.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	2.40 m
Maintenance factor	0.80
Total luminous flux	15600.00 lm
Total power	120.0 W
Total power per area (26.80 m ²)	4.48 W/m ² (1.14 W/m ² /100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	Horizontal	cylindrical
E_{min}	392 lx	183 lx
$E_{min}/\bar{E}_m (U_o)$	322 lx	160 lx
$E_{min}/E_{max} (U_d)$	0.82	0.87
E_z/E_h	0.69	
Position		0.40
$R_{UG} (4.1H \ 4.9H)$	0.75 m	1.20 m
	≤ 23.1	
Luminaire : (ToughLED™ Pro 1500mm 5ft Single IP66 4000K WOP , IEDT0041A)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.7 (Ceiling)	111 lx	0.72
M 1.3 (Wall)	210 lx	0.77
M 1.4 (Wall)	240 lx	0.70
M 1.5 (Wall)	209 lx	0.78
M 1.6 (Wall)	243 lx	0.70

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



1 Store RF03

1.2 Summary, Store RF03

1.2.1 Result overview, Evaluation area 1

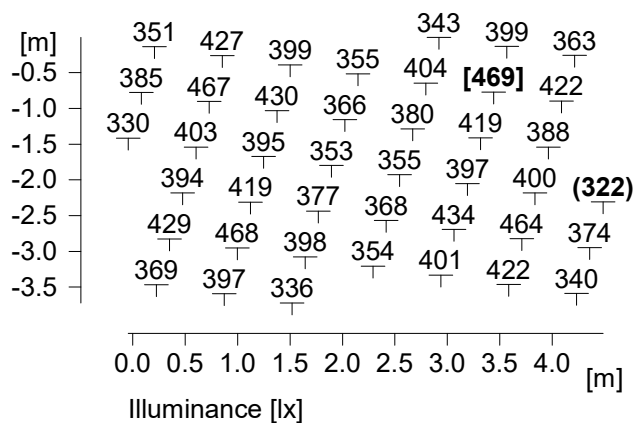
Type No.\Make

		JCC	
13	3 x	Order No.	: !EDT0041A
		Luminaire name	: ToughLED™ Pro 1500mm 5ft Single IP66 4000K WOP
		Equipment	: 1 x LED 29 W / 3900 lm
14	1 x	Order No.	: !EDT0042A
		Luminaire name	: ToughLED™ Pro 1500mm 5ft Single IP66 4000K EM WOP
		Equipment	: 1 x LED 33 W / 3900 lm

1 Store RF03

1.3 Calculation results, Store RF03

1.3.1 Table, Reference plane 1.1 (E)

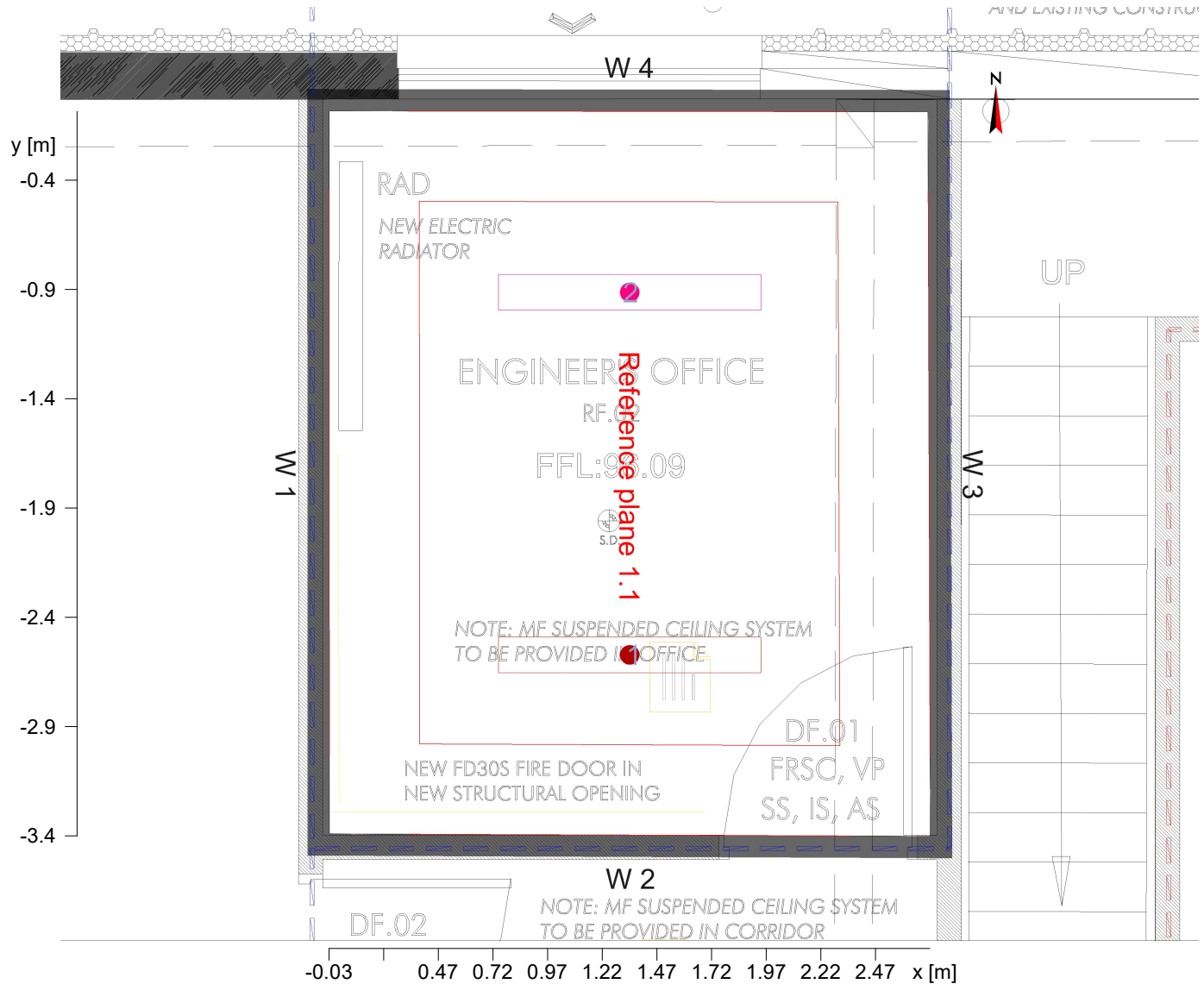


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 392 lx
Minimum illuminance	E_{min}	: 322 lx
Maximum illuminance	E_{max}	: 469 lx
Uniformity U_0	$E_{min}/\bar{E}_m$	: 1 : 1.22 (0.82)

2 Engineers Office RF02

2.1 Description, Engineers Office RF02

2.1.1 Floor plan

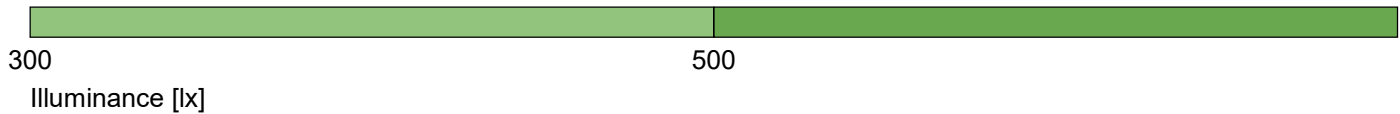
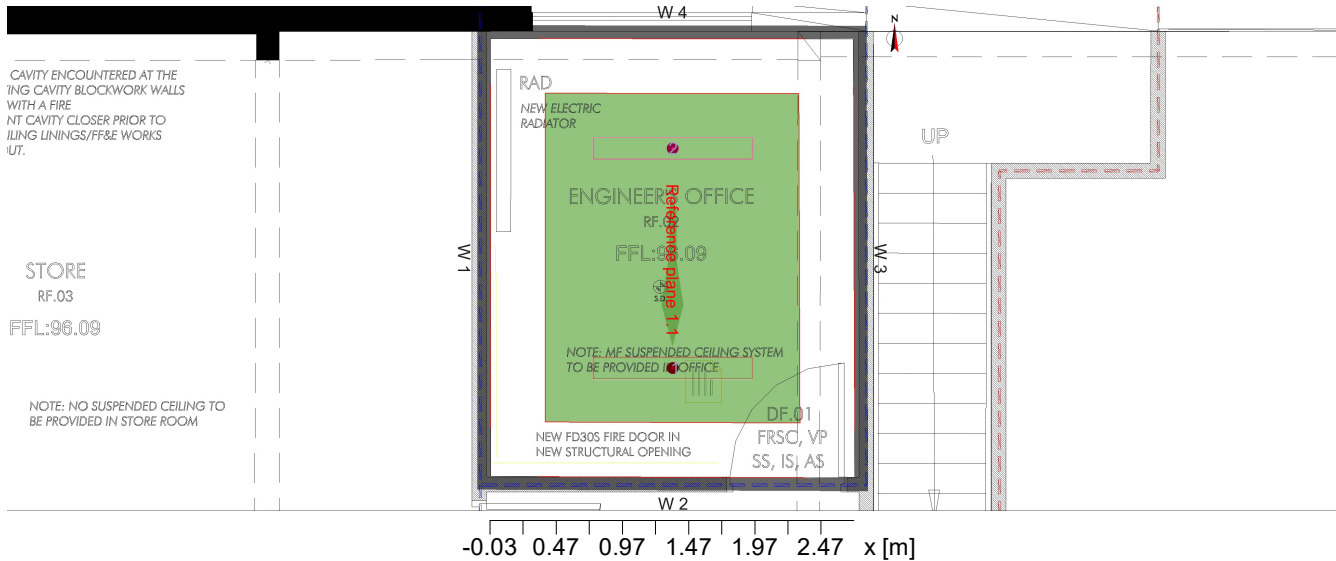


Wall	x	y	Length	Reflectance
1	-25.15 m	15.90 m	3.30 m	50.0 %
2	-22.40 m	15.89 m	2.75 m	50.0 %
3	-22.42 m	19.20 m	3.31 m	50.0 %
4	-25.15 m	19.20 m	2.74 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

2 Engineers Office RF02

2.2 Summary, Engineers Office RF02

2.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux 5640.00 lm
 Total power 46.0 W
 Total power per area (9.06 m²) 5.08 W/m² (1.20 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal	cylindrical
$\bar{E}_m$	424 lx	156 lx
E_{min}	334 lx	140 lx
$E_{min}/\bar{E}_m (U_o)$	0.79	0.90
$E_{min}/E_{max} (U_d)$	0.66	
E_z/E_h		0.29
Position	0.75 m	1.20 m
$R_{UG} (2.3H \ 2.8H)$	≤ 16.4	
Luminaire : (Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM, !EDT0032A)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.5 (Ceiling)	71 lx	0.91
M 1.1 (Wall)	167 lx	0.74
M 1.2 (Wall)	201 lx	0.65
M 1.3 (Wall)	167 lx	0.74
M 1.4 (Wall)	198 lx	0.65

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



2 Engineers Office RF02

2.2 Summary, Engineers Office RF02

2.2.1 Result overview, Evaluation area 1

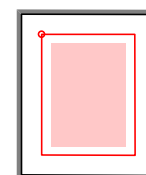
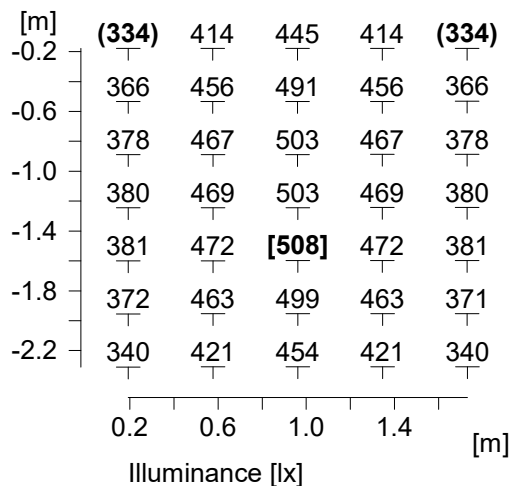
Type No.\Make

		JCC	
4	1 x	Order No.	: !EDT0031A
		Luminaire name	: Commercial Linear UGR 19 4FT
		Equipment	: 1 x LED 22 W / 2780 lm
5	1 x	Order No.	: !EDT0032A
		Luminaire name	: Commercial Linear UGR19 4FT 24W/27W/30W/33W 3CCTEM
		Equipment	: 1 x LED 24 W / 2860 lm

2 Engineers Office RF02

2.3 Calculation results, Engineers Office RF02

2.3.1 Table, Reference plane 1.1 (E)

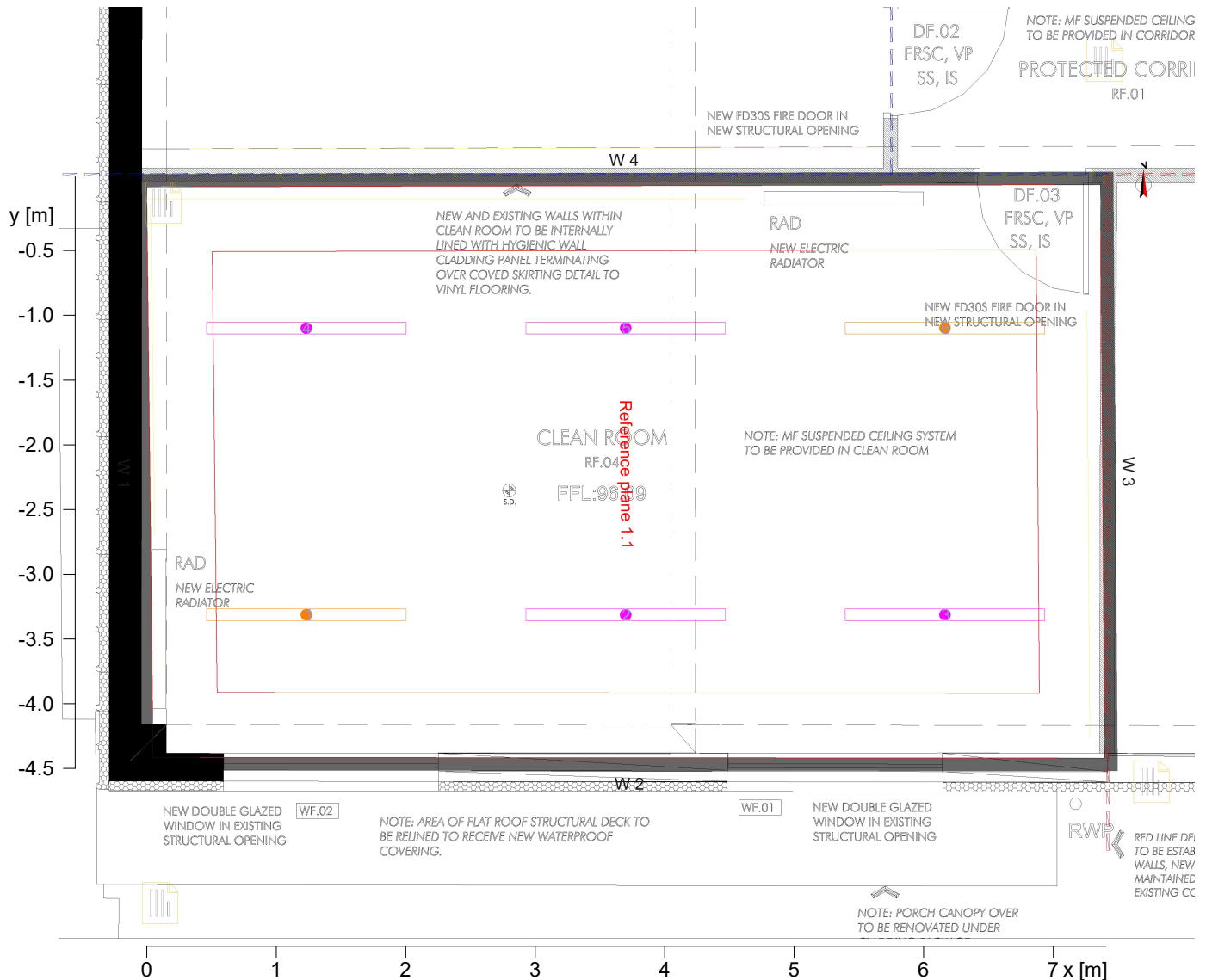


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 424 lx
Minimum illuminance	E_{min}	: 334 lx
Maximum illuminance	E_{max}	: 508 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.27 (0.79)

3 Clean Room RF04

3.1 Description, Clean Room RF04

3.1.1 Floor plan



Wall	x	y	Length	Reflectance
1	-30.93 m	9.88 m	4.40 m	50.0 %
2	-23.58 m	9.88 m	7.34 m	50.0 %
3	-23.62 m	14.30 m	4.42 m	50.0 %
4	-30.98 m	14.28 m	7.36 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

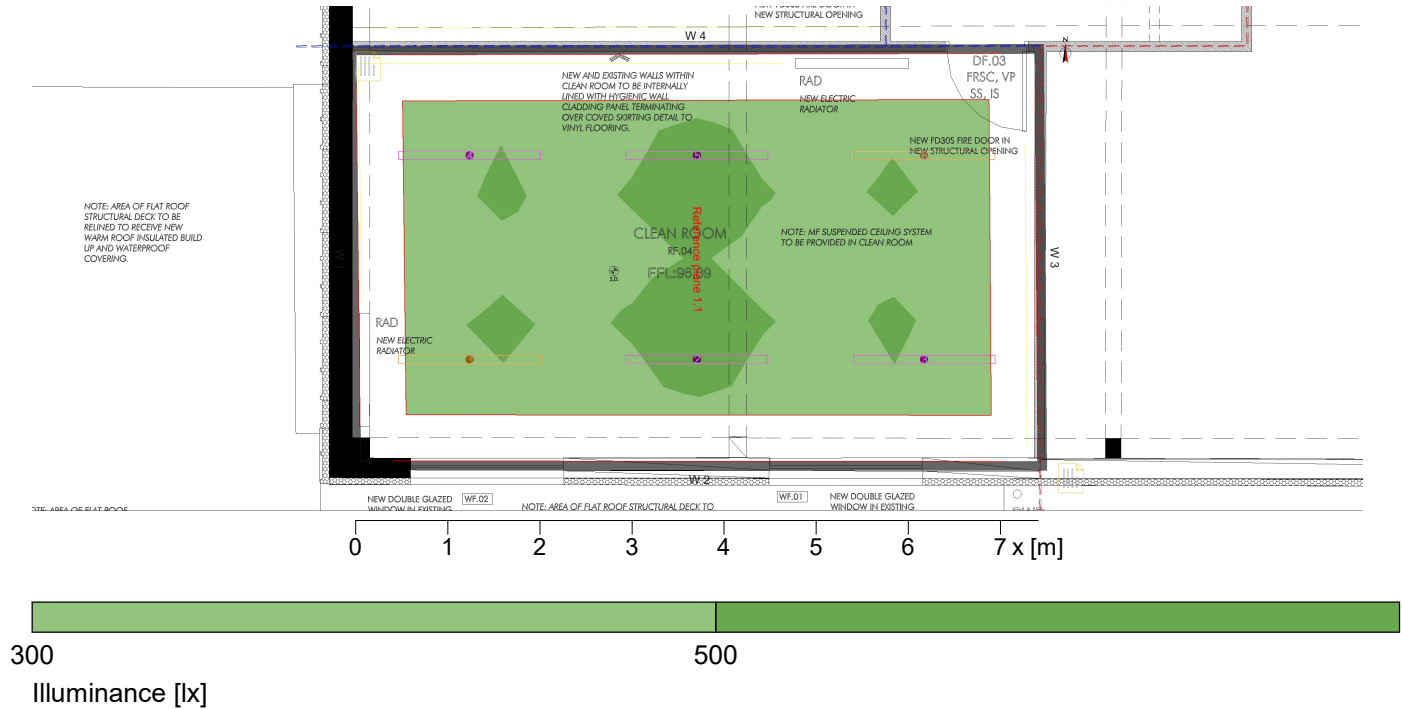
Object : Assentech - Trispen Project
 Installation : Trispen Project
 Project number : Assentech Rev2 Plans
 Date : 14.06.2024



3 Clean Room RF04

3.2 Summary, Clean Room RF04

3.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux
 Total power
 Total power per area (32.44 m²)

23400.00 lm
 182.0 W
 5.61 W/m² (1.16 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal	cylindrical
$\bar{E}_m$	484 lx	230 lx
E_{min}	436 lx	196 lx
$E_{min}/\bar{E}_m (U_o)$	0.90	0.85
$E_{min}/E_{max} (U_d)$	0.80	
E_z/E_h		0.42
Position	0.75 m	1.20 m
$R_{UG} (3.8H \ 6.4H)$	≤ 23.7	
Luminaire : (ToughLED™ Pro 1500mm 5ft Single IP66 4000K EM WOP , IEDT0042A)		

Major surfaces

	$\bar{E}_m$	U_o
M 1.5 (Ceiling)	127 lx	0.80
M 1.1 (Wall)	271 lx	0.74
M 1.2 (Wall)	302 lx	0.69
M 1.3 (Wall)	267 lx	0.75
M 1.4 (Wall)	302 lx	0.69

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



3 Clean Room RF04

3.2 Summary, Clean Room RF04

3.2.1 Result overview, Evaluation area 1

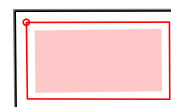
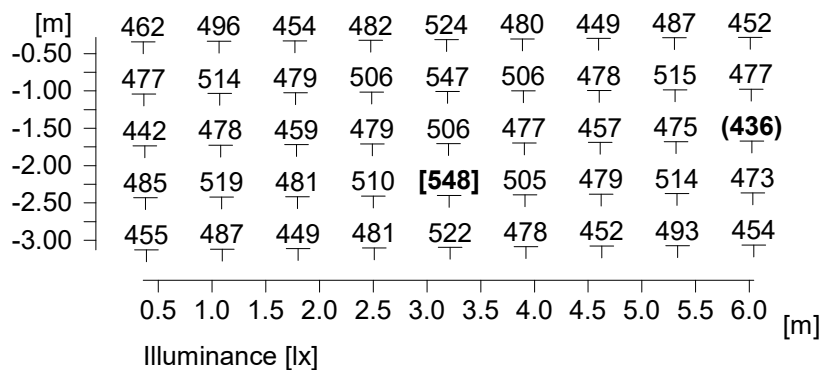
Type No.\Make

		JCC	
13	4 x	Order No.	: !EDT0041A
		Luminaire name	: ToughLED™ Pro 1500mm 5ft Single IP66 4000K WOP
		Equipment	: 1 x LED 29 W / 3900 lm
14	2 x	Order No.	: !EDT0042A
		Luminaire name	: ToughLED™ Pro 1500mm 5ft Single IP66 4000K EM WOP
		Equipment	: 1 x LED 33 W / 3900 lm

3 Clean Room RF04

3.3 Calculation results, Clean Room RF04

3.3.1 Table, Reference plane 1.1 (E)

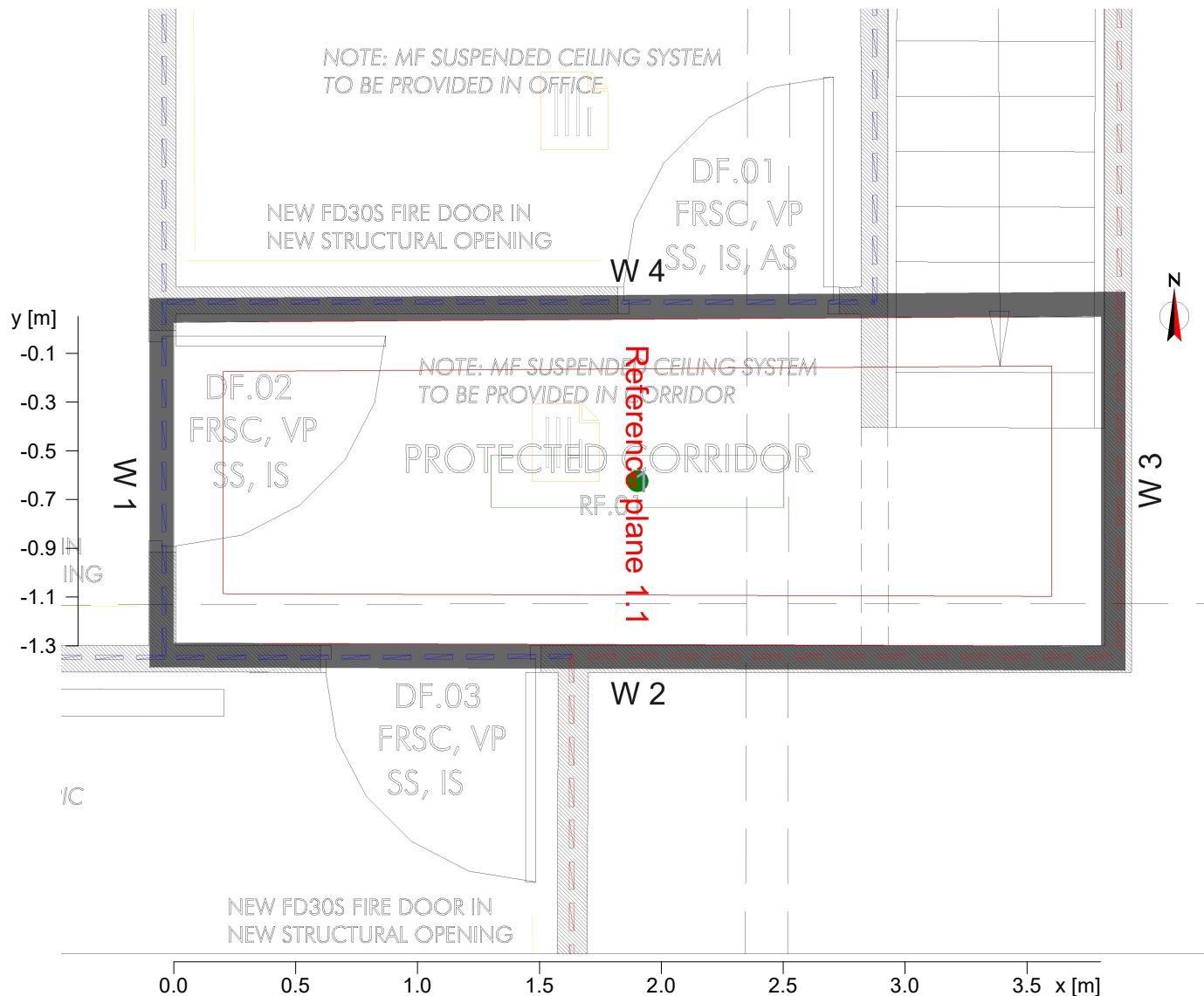


Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 484 lx
Minimum illuminance	E_{min}	: 436 lx
Maximum illuminance	E_{max}	: 548 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.11 (0.90)

4 Protected Corridor RF01

4.1 Description, Protected Corridor RF01

4.1.1 Floor plan

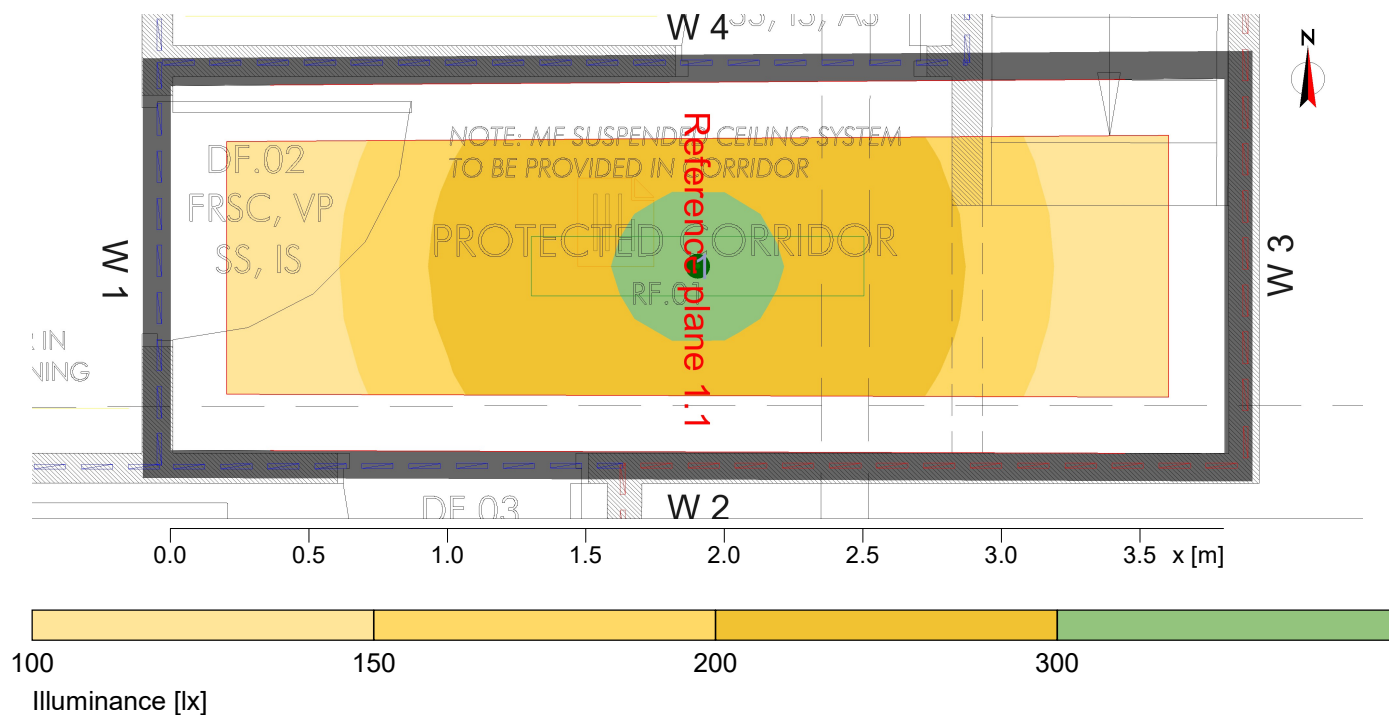


Wall	x	y	Length	Reflectance
1	-25.19 m	14.44 m	1.31 m	50.0 %
2	-21.39 m	14.42 m	3.80 m	50.0 %
3	-21.39 m	15.78 m	1.35 m	50.0 %
4	-25.19 m	15.75 m	3.80 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		2.40 m		
Height of ref. plane		0.75 m		

4 Protected Corridor RF01

4.2 Summary, Protected Corridor RF01

4.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used
 Height of luminaire plane
 Maintenance factor

Average indirect fraction
 2.40 m
 0.80

Total luminous flux
 Total power
 Total power per area (5.07 m²)

2700.00 lm
 22.0 W
 4.34 W/m² (2.07 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

Horizontal
 $\bar{E}_m$ 210 lx
 E_{min} 107 lx
 $E_{min}/\bar{E}_m (U_o)$ 0.51
 $E_{min}/E_{max} (U_d)$ 0.34
 E_z/E_h
 Position 0.75 m
 $R_{UG} (1.2H \ 3.3H)$ ≤ 18.3
 Luminaire :
 (LED 4' Single IP20 Emergency, IEDT0002A)

cylindrical
 92 lx
 64 lx
 0.70
 0.33
 1.20 m

Major surfaces

$\bar{E}_m$
 M 1.5 (Ceiling) 85.4 lx
 M 1.2 (Wall) 155 lx
 M 1.4 (Wall) 155 lx

U_o
 0.42
 0.43
 0.43

Object : Assentech - Trispen Project
Installation : Trispen Project
Project number : Assentech Rev2 Plans
Date : 14.06.2024



4 Protected Corridor RF01

4.2 Summary, Protected Corridor RF01

4.2.1 Result overview, Evaluation area 1

Type No.\Make

8	1 x	JCC	
		Order No.	: !EDT0002A
		Luminaire name	: LED 4' Single IP20 Emergency
		Equipment	: 1 x LED 22 W / 2700 lm

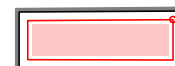
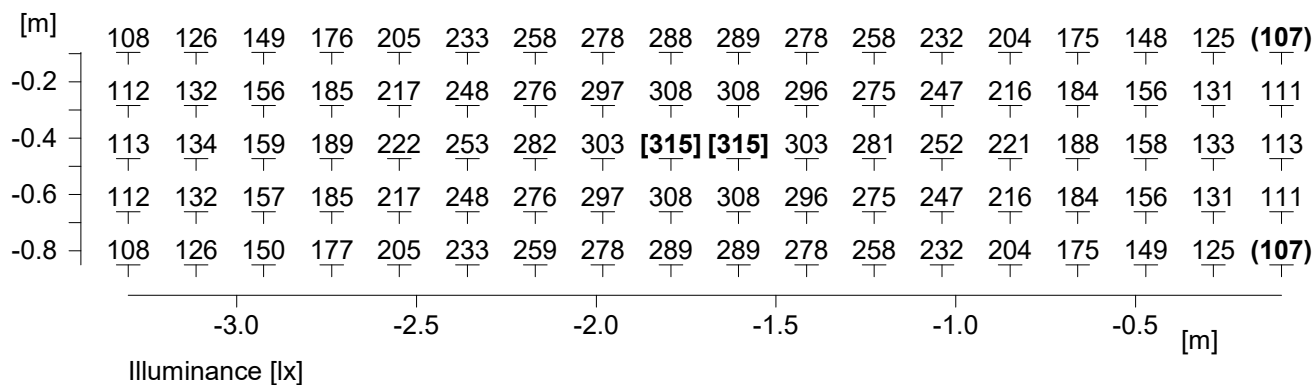
Object : Assentech - Trispen Project
 Installation : Trispen Project
 Project number : Assentech Rev2 Plans
 Date : 14.06.2024



4 Protected Corridor RF01

4.3 Calculation results, Protected Corridor RF01

4.3.1 Table, Reference plane 1.1 (E)



Height reference plane		: 0.75 m
Average illuminance	$\bar{E}_m$	: 210 lx
Minimum illuminance	E_{min}	: 107 lx
Maximum illuminance	E_{max}	: 315 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 1.96 (0.51)