

**DATE:** 01 April 2022  
**DESIGNER:** M. Brennan  
**PROJECT No:** 545482.R3  
**PROJECT NAME:** Royal Oak Glasnevin

**TRTLIGHTING**  
ROAD & TUNNEL SYSTEMS

Public & Residential Amenity Terraces Scheme in 3K to Class P2  
Car Entrance Area & Open Carpark Section Below  
Constant Light Output (CLO) Enabled

Luminaire Type A/B:  
Via 1.1m 11W Asymmetric/Symmetrical Bollards to limit direct  
light beyond the boundaries and eliminate direct light onto windows.

Type C: Aspect 18W, Road 2 Optic on 5m column.

Type D: Realta 8W wide mounted 2.75 m on face of upper terrace.

LMF: 0.92  
LLMF (CLO):  $1 \times \text{LMF} = 0.92$

## Outdoor Lighting Report

**PREPARED BY:** TRT / Thorlux Lighting  
Unit G6  
Riverview Business Park  
Nangor Road  
Dublin 12  
Tel: +353 (0)1 4604608  
email: [thorlux@thorlux.ie](mailto:thorlux@thorlux.ie)  
Web: [www.trtlighting.co.uk](http://www.trtlighting.co.uk)  
Web: [www.thorlux.ie](http://www.thorlux.ie)

## Layout Report

### General Data

Dimensions in Metres Angles in Degrees  
Local Origin at 54.00m x 47.36m

### Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Amenity Terraces	0.00	0.00	166.89	92.60	1.11	1.10
2	Car Entrance Area	64.64	16.65	38.75	20.35	1.11	1.13

### Luminaires

#### Luminaire A Data



Supplier	TRT Lighting
Type	VIA ASY 360mA CLO 3000K LED
Lamp(s)	42 0011 0000 100
Lamp Flux (klm)	0.54
File Name	VIA_ASY_360mA_CLO_540LM_3K.ies
Maintenance Factor	0.92
Imax70,80,90(cd/klm)	615.1, 393.5, 54.6
No. in Project	29

#### Luminaire B Data



Supplier	TRT Lighting
Type	VIA SYM 630mA CLO 3000K LED
Lamp(s)	42 0018 0000 100
Lamp Flux (klm)	0.99
File Name	VIA_SYM_630mA_CLO_990LM_3K.ies
Maintenance Factor	0.92
Imax70,80,90(cd/klm)	299.3, 213.2, 38.2
No. in Project	1

#### Luminaire C Data



Supplier	TRT Lighting
Type	ASE12 LED 18W CLO GR2 3000K EXP
Lamp(s)	42 0018 0000 100
Lamp Flux (klm)	2.31
File Name	ASE12_LED_18W_CLO_GR2_3K_EXP.IES
Maintenance Factor	0.92
Imax70,80,90(cd/klm)	535.9, 110.8, 14.2
No. in Project	2

#### Luminaire D Data

Supplier	
Type	RL19069
Lamp(s)	8W LED
Lamp Flux (klm)	1.32
File Name	RL19069.ies
Maintenance Factor	0.92
Imax70,80,90(cd/klm)	723.1, 261.6, 49.9
No. in Project	3

### Layout

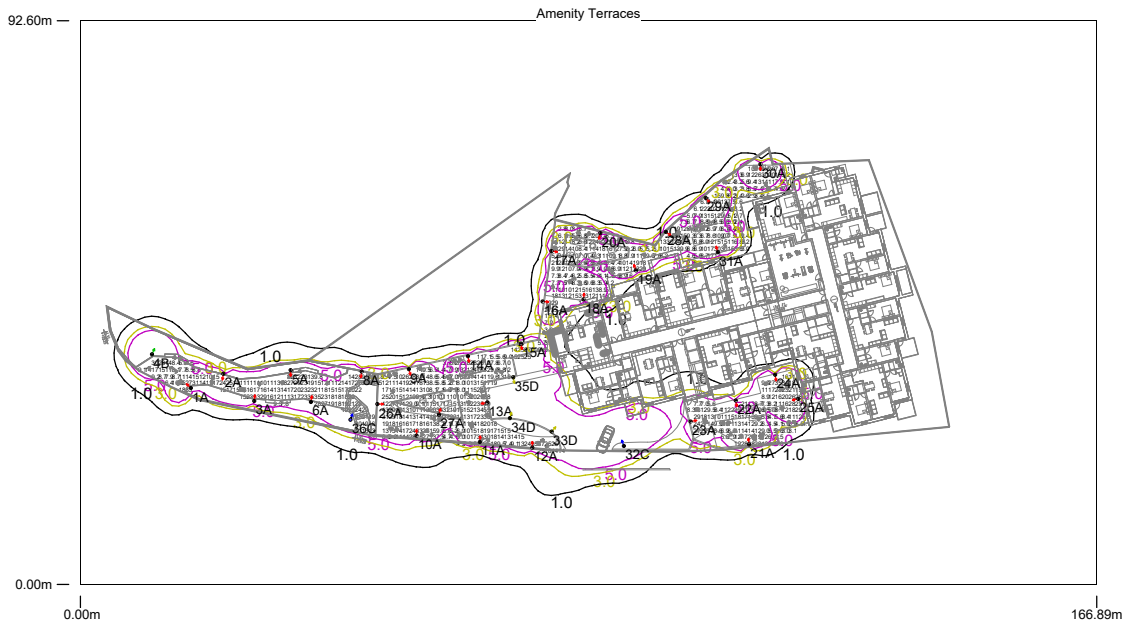
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	18.14	32.29	1.13	137.00	0.00	0.00	0.00			
2	A	23.48	34.62	1.30	260.00	0.00	0.00	0.00			
3	A	28.55	30.16	1.13	85.00	0.00	0.00	0.00			
4	B	11.74	37.83	1.13	65.00	0.00	0.00	0.00			
5	A	34.52	35.24	1.13	270.00	0.00	0.00	0.00			
6	A	37.84	30.00	1.13	80.00	0.00	0.00	0.00			
8	A	46.19	34.98	1.13	260.00	0.00	0.00	0.00			
9	A	53.93	35.40	1.13	285.00	0.00	0.00	0.00			
10	A	55.18	24.47	1.13	90.00	0.00	0.00	0.00			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
11	A	65.56	23.41	1.13	85.00	0.00	0.00	0.00			
12	A	74.20	22.50	1.13	90.00	0.00	0.00	0.00			
13	A	66.80	29.90	1.13	190.00	0.00	0.00	0.00			
14	A	63.64	37.52	1.13	280.00	0.00	0.00	0.00			
15	A	72.33	39.59	1.13	280.00	0.00	0.00	0.00			
16	A	75.88	46.51	1.13	355.00	0.00	0.00	0.00			
17	A	77.34	54.78	1.13	350.00	0.00	0.00	0.00			
18	A	82.61	46.84	1.13	85.00	0.00	0.00	0.00			
19	A	91.22	51.60	1.13	110.00	0.00	0.00	0.00			
20	A	85.37	57.71	1.13	255.00	0.00	0.00	0.00			
21	A	109.77	23.04	1.13	95.00	0.00	0.00	0.00			
22	A	107.59	30.23	1.13	280.00	0.00	0.00	0.00			
23	A	100.19	26.80	1.13	10.00	0.00	0.00	0.00			
24	A	114.05	34.45	1.13	280.00	0.00	0.00	0.00			
25	A	117.88	30.49	1.13	190.00	0.00	0.00	0.00			
26	A	48.75	29.64	1.13	0.00	0.00	0.00	0.00			
27	A	58.87	27.92	1.13	75.00	0.00	0.00	0.00			
28	A	96.11	57.92	1.13	325.00	0.00	0.00	0.00			
29	A	102.67	63.51	1.13	310.00	0.00	0.00	0.00			
30	A	111.64	69.06	1.13	270.00	0.00	0.00	0.00			
31	A	104.66	54.60	1.13	105.00	0.00	0.00	0.00			
32	C	89.22	22.78	5.00	110.00	0.00	0.00	0.00			
33	D	77.38	25.13	2.70	50.00	0.00	0.00	0.00			
34	D	70.51	27.33	2.70	75.00	0.00	0.00	0.00			
35	D	71.07	34.05	2.70	280.00	0.00	0.00	0.00			
36	C	44.34	27.07	5.00	70.00	0.00	0.00	0.35			

## Horizontal Illuminance (lux)

### Amenity Terraces

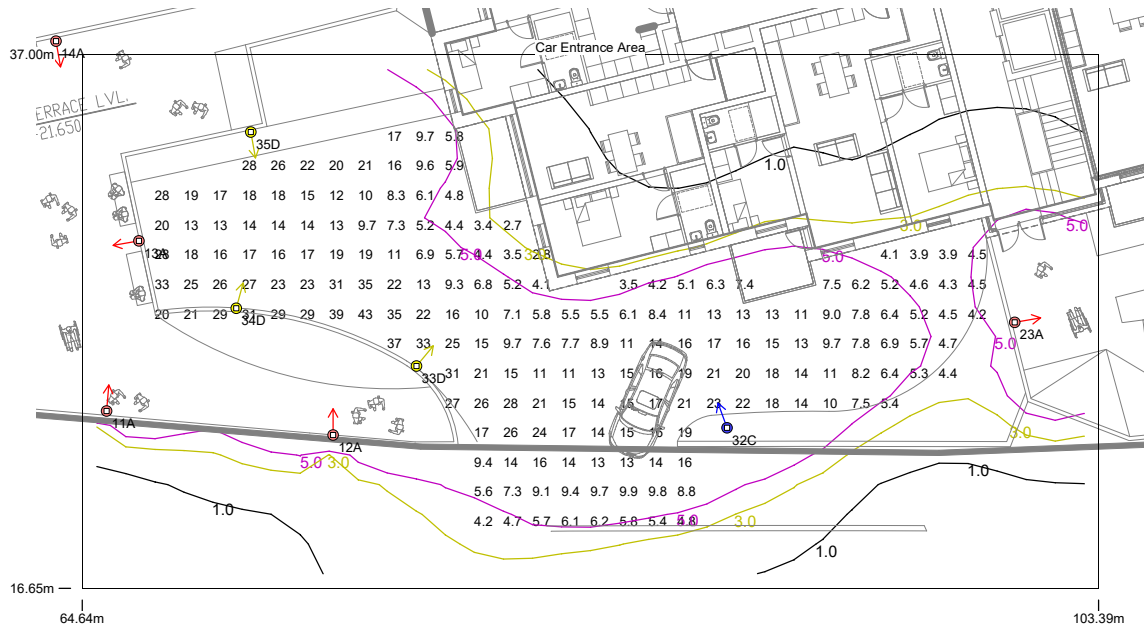


### Results

Eav	13.91
Emin	2.38
Emax	54.80
Emin/Emax	0.04
Emin/Eav	0.17

## Horizontal Illuminance (lux)

### Car Entrance Area



### Results

Eav	13.82
Emin	2.65
Emax	43.19
Emin/Emax	0.06
Emin/Eav	0.19