

DATE: 20 February 2023
DESIGNER: Declan Doyle
PROJECT No: KE/RE/CBP/01
PROJECT NAME: Calmount business park access roads



Lighting to BS5489:1-2020
Main road lighting to P2 class, roundabouts to C3 class
4000k colour temperature, Dimming to U14 protocol
A) Cree Energy Uno TRSA-03-200 8L 6.09klm, 36w CLO
B) Cree Energy Uno TRSA-03-200 8L 8.64klm, 54w CLO
8m columns main roads/roundabouts

Outdoor Lighting Report

PMEP

Penston MEP Consulting

ENGINEERING CONSULTANT: PMEP
CONSULTANT REPRESENTATIVE: SA TALOTTI

CLIENT: BLACKWIN LIMITED

PREPARED BY: Declan Doyle
Lighting Design Manager

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Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Calmount site	-243.40	-11.79	415.62	352.55	1.66	1.49
2	Business park road 1	10.76	9.43	21.84	202.17	1.46	1.50
3	Business park road 2	-77.85	191.12	24.37	33.02	1.43	1.44
4	Business park roundabout	-99.07	217.58	47.59	36.00	1.90	1.44
5	Business park roundabout m...	32.36	159.92	23.64	24.73	1.69	1.45
6	Business park road 3	-24.91	132.26	63.60	23.19	1.48	1.45
7	Business park road 4	51.34	174.97	78.11	18.29	1.47	1.41
8	Business park road future	-215.95	172.36	124.88	56.95	1.49	1.50

Luminaires



Luminaire A Data

Supplier	Cree Lighting
Type	TRSA-02-200-8L40736W
Lamp(s)	16iu8L36W4K
Lamp Flux (klm)	6.09
File Name	TRSA-02-200-8L-407 36W-1408-QL20-S05 .IES
Maintenance Factor	0.84
Imax70,80,90(cd/klm)	462.5, 41.7, 0.0
No. in Project	39



Luminaire B Data

Supplier	Cree Lighting
Type	TRSA-02-200-8L40754W
Lamp(s)	16iu8L54W4K
Lamp Flux (klm)	8.64
File Name	TRSA-02-200-8L-407 54W-1408-QL20-S05 .IES
Maintenance Factor	0.84
Imax70,80,90(cd/klm)	462.5, 41.7, 0.0
No. in Project	4

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	-69.14	213.68	8.00	200.00	0.00	0.00	0.00			
2	A	45.33	173.38	8.00	161.00	0.00	0.00	0.00			
3	A	31.47	166.89	8.00	70.00	0.00	0.00	0.00			
4	A	-85.54	217.91	8.00	18.00	0.00	0.00	0.00			
5	A	43.02	187.47	8.00	252.00	0.00	0.00	0.00			
6	A	-13.33	159.62	8.00	299.00	0.00	0.00	0.00			
7	A	14.31	173.33	8.00	299.00	0.00	0.00	0.00			
8	A	4.43	157.93	8.00	115.00	0.00	0.00	0.00			
9	A	62.33	196.44	8.00	299.00	0.00	0.00	0.00			
10	A	82.94	209.93	8.00	299.00	0.00	0.00	0.00			
11	A	106.53	221.28	8.00	299.00	0.00	0.00	0.00			
12	A	82.27	194.55	8.00	112.00	0.00	0.00	0.00			
13	A	104.18	204.39	8.00	116.00	0.00	0.00	0.00			



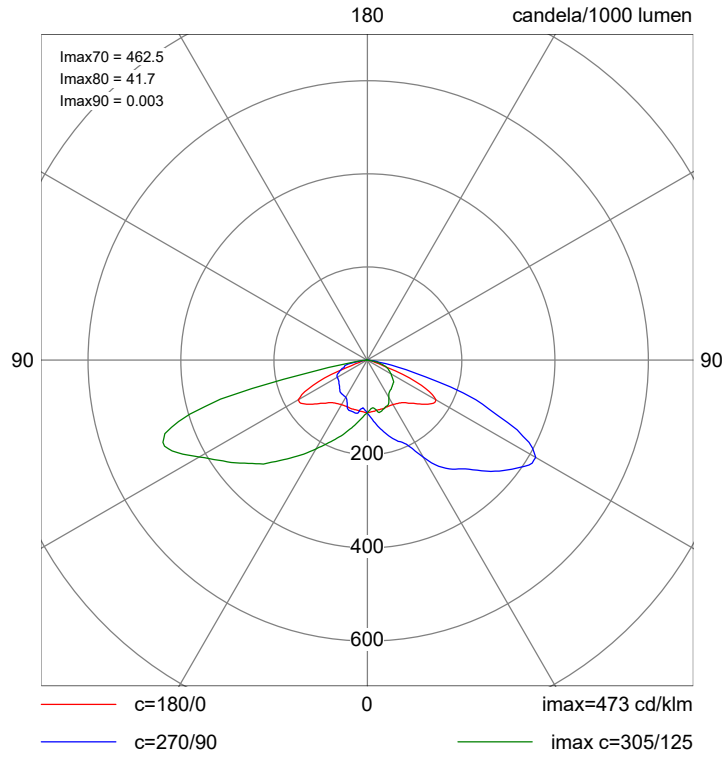
Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
14	B	-106.12	247.96	8.00	340.00	0.00	0.00	0.00			
15	B	-82.14	257.91	8.00	258.00	0.00	0.00	0.00			
16	B	-69.90	238.31	8.00	172.00	0.00	0.00	0.00			
17	B	-98.11	223.92	8.00	65.00	0.00	0.00	0.00			
18	A	-60.43	250.94	8.00	138.00	0.00	0.00	0.00			
19	A	-120.01	224.08	8.00	112.00	0.00	0.00	0.00			
20	A	-149.37	213.19	8.00	112.00	0.00	0.00	0.00			
21	A	-175.67	202.02	8.00	112.00	0.00	0.00	0.00			
22	A	-205.49	198.98	8.00	78.00	0.00	0.00	0.00			
23	A	-232.16	208.85	8.00	63.00	0.00	0.00	0.00			
24	A	-214.16	217.16	8.00	250.00	0.00	0.00	0.00			
25	A	-190.54	214.67	8.00	276.00	0.00	0.00	0.00			
26	A	-168.38	221.96	8.00	293.00	0.00	0.00	0.00			
27	A	-141.15	234.05	8.00	297.00	0.00	0.00	0.00			
28	A	-20.73	145.67	8.00	115.00	0.00	0.00	0.00			
29	A	-74.54	195.19	8.00	25.97	0.00	0.00	0.00			
30	A	-62.14	169.72	8.00	25.97	0.00	0.00	0.00			
31	A	-49.74	144.26	8.00	25.97	0.00	0.00	0.00			
32	A	-37.33	118.80	8.00	25.97	0.00	0.00	0.00			
33	A	-24.93	93.33	8.00	25.97	0.00	0.00	0.00			
34	A	-12.53	67.87	8.00	25.97	0.00	0.00	0.00			
35	A	-0.13	42.40	8.00	25.97	0.00	0.00	0.00			
36	A	12.28	16.94	8.00	25.97	0.00	0.00	0.00			
37	A	-56.70	186.34	8.00	206.01	0.00	0.00	0.00			
38	A	-44.32	160.96	8.00	206.01	0.00	0.00	0.00			
39	A	-30.46	135.09	8.00	206.01	0.00	0.00	0.00			
40	A	-19.55	110.20	8.00	206.01	0.00	0.00	0.00			
41	A	-7.16	84.81	8.00	206.01	0.00	0.00	0.00			
42	A	5.23	59.43	8.00	206.01	0.00	0.00	0.00			
43	A	17.43	33.94	8.00	206.01	0.00	0.00	0.00			

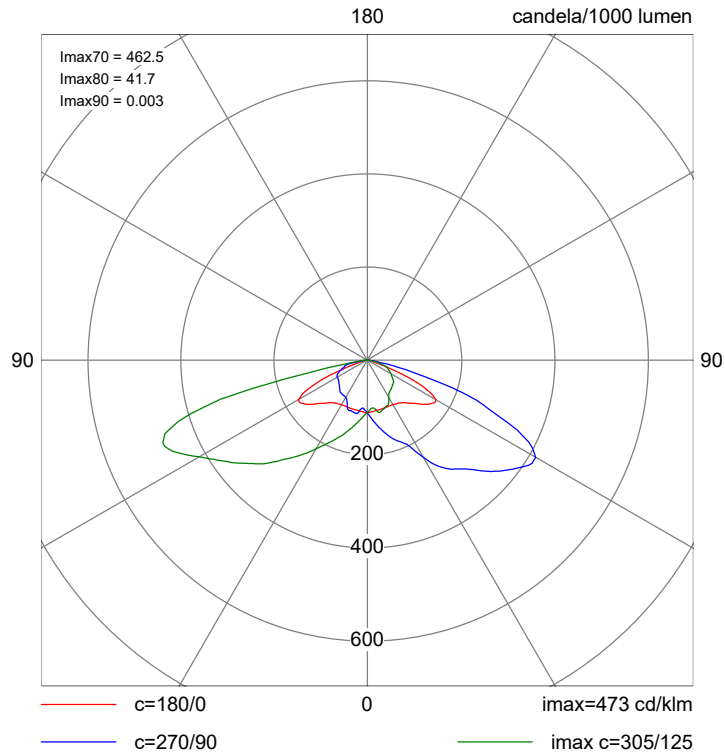


Polar Diagrams

Luminaire A TRSA-02-200-8L40736W



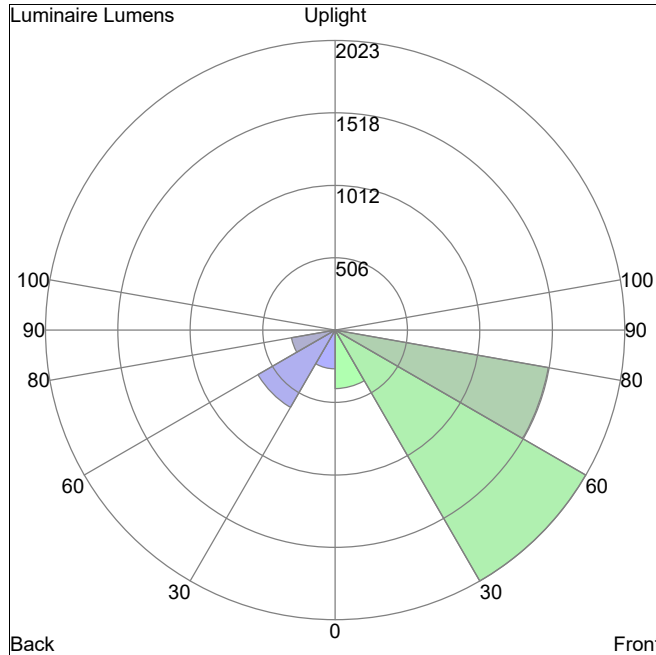
Luminaire B TRSA-02-200-8L40754W





Luminaire Classification System (LCS) Graphs

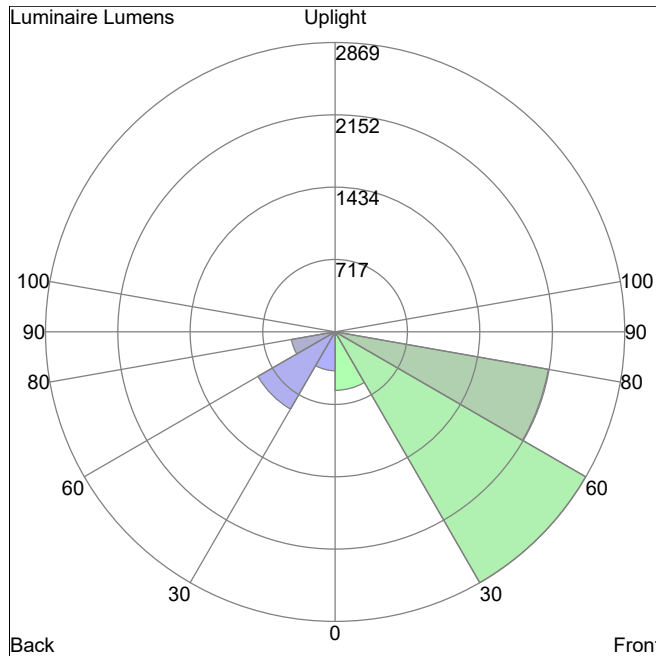
Luminaire A TRSA-02-200-8L40736W



LCS	Lumens	%Lamp	%Lum
FL	408.7	6.7	7.9
FM	2023.4	33.2	39.1
FH	1512.7	24.8	29.2
FVH	20.5	0.3	0.4
BL	271.9	4.5	5.3
BM	621.9	10.2	12.0
BH	308.7	5.1	6.0
BVH	9.3	0.2	0.2
UL	0.0	0.0	0.0
UH	0.0	0.0	0.0
Total	5177.5	85.0	100.0

BUG rating=B2-U1-G1

Luminaire B TRSA-02-200-8L40754W

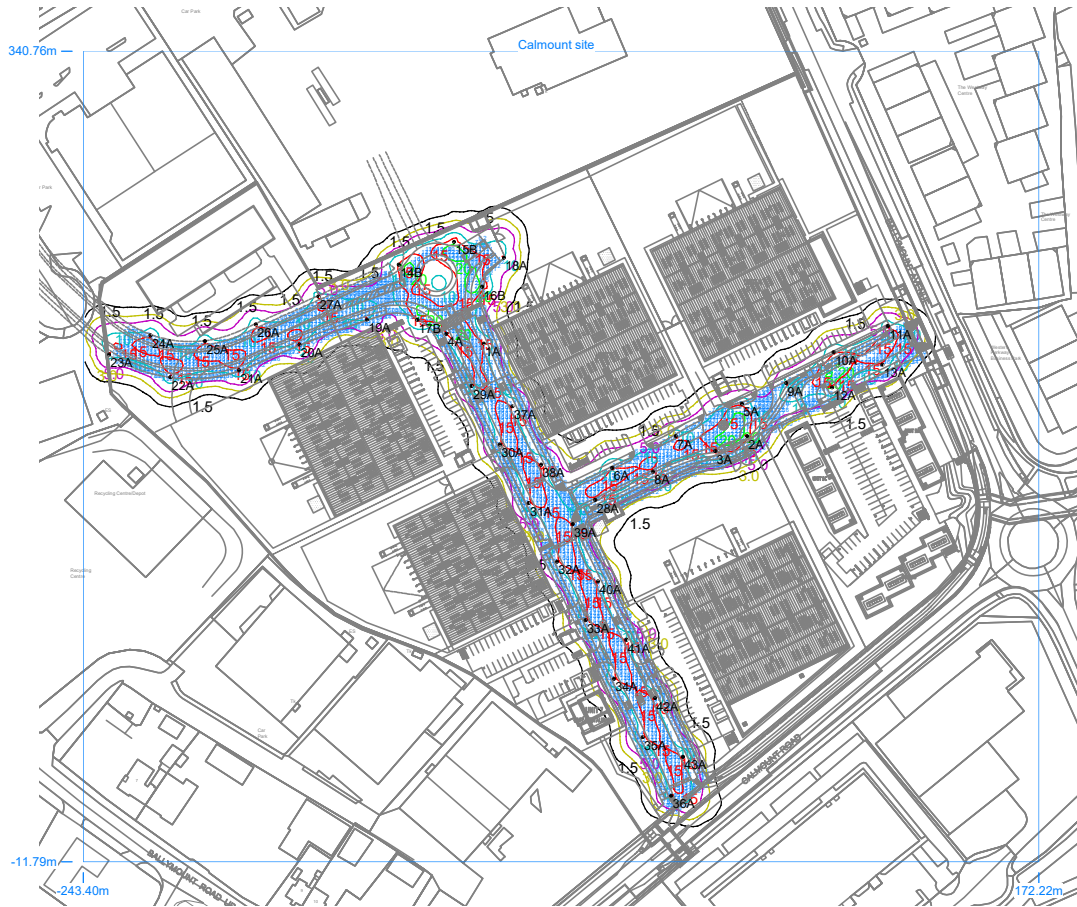


LCS	Lumens	%Lamp	%Lum
FL	579.5	6.7	7.9
FM	2868.8	33.2	39.1
FH	2144.6	24.8	29.2
FVH	29.1	0.3	0.4
BL	385.5	4.5	5.3
BM	881.8	10.2	12.0
BH	437.7	5.1	6.0
BVH	13.2	0.2	0.2
UL	0.0	0.0	0.0
UH	0.1	0.0	0.0
Total	7340.6	85.0	100.0

BUG rating=B2-U1-G2

Horizontal Illuminance (lux)

Calmount site



Results

Eav	12.02
Emin	2.62
Emax	23.45
Emin/Emax	0.11
Emin/Eav	0.22
Emax/Eav	1.95

Horizontal Illuminance (lux)

Business park road 1



Results

Eav	11.53
Emin	3.63
Emax	18.32
Emin/Emax	0.20
Emin/Eav	0.32
Emax/Eav	1.59



Horizontal Illuminance (lux)

Business park road 2



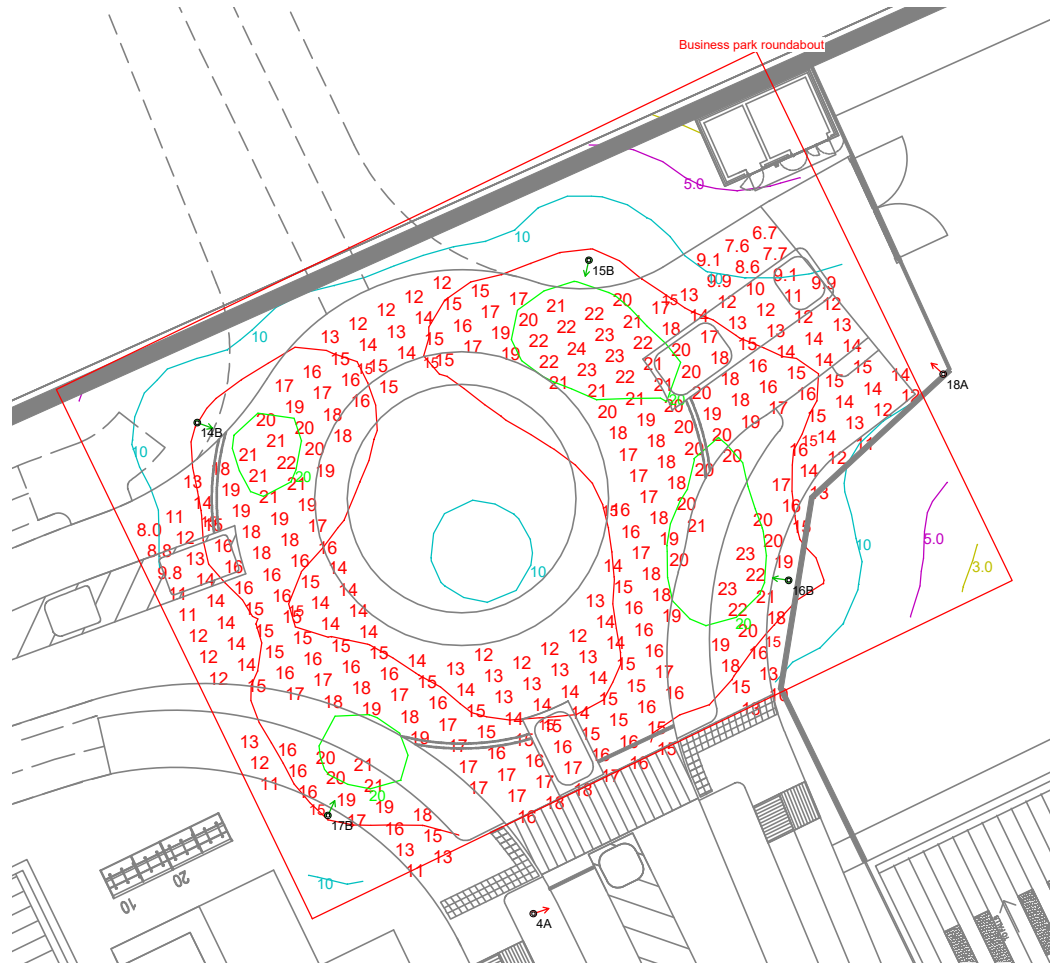
Results

Eav	12.76
Emin	4.41
Emax	19.76
Emin/Emax	0.22
Emin/Eav	0.35
Emax/Eav	1.55



Horizontal Illuminance (lux)

Business park roundabout



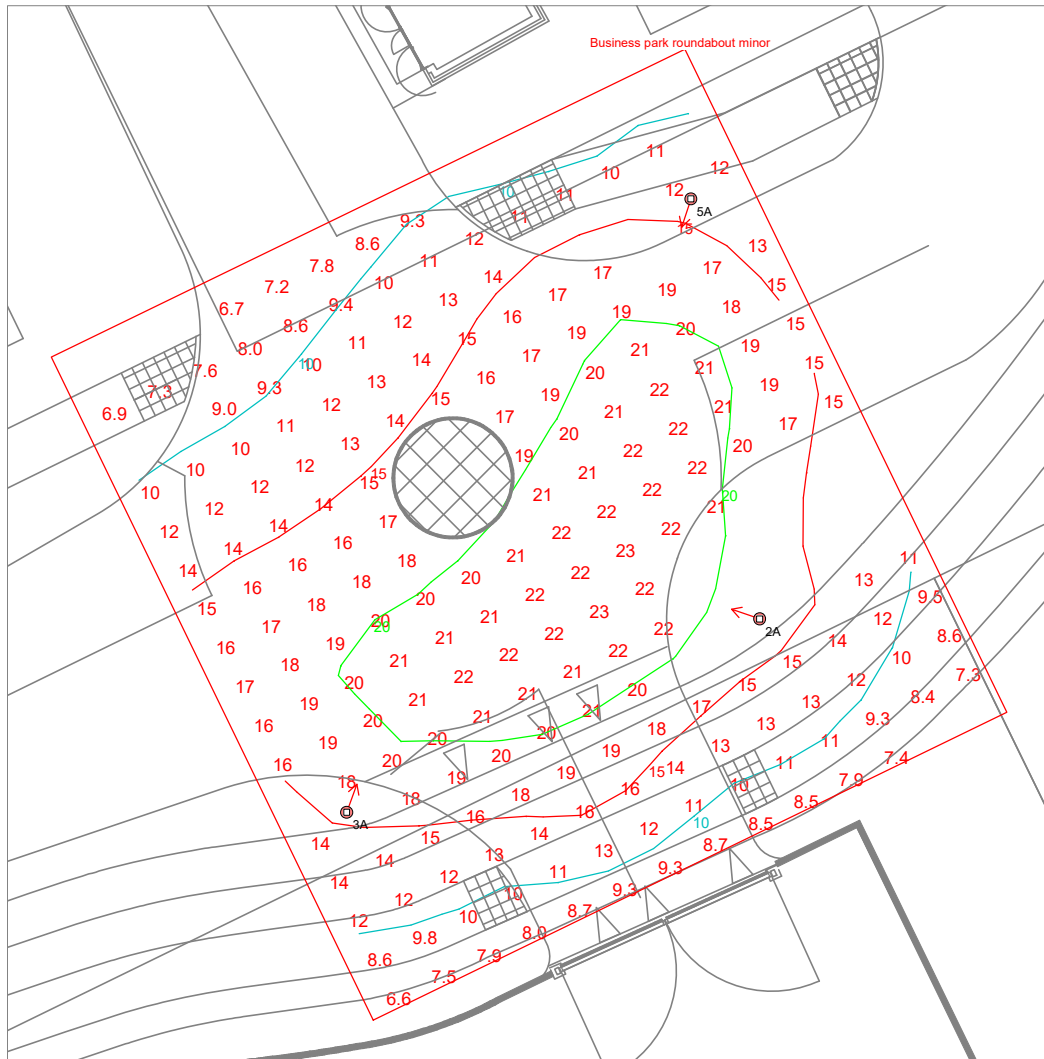
Results

Eav	16.01
Emin	6.67
Emax	23.58
Emin/Emax	0.28
Emin/Eav	0.42
Emax/Eav	1.47



Horizontal Illuminance (lux)

Business park roundabout minor



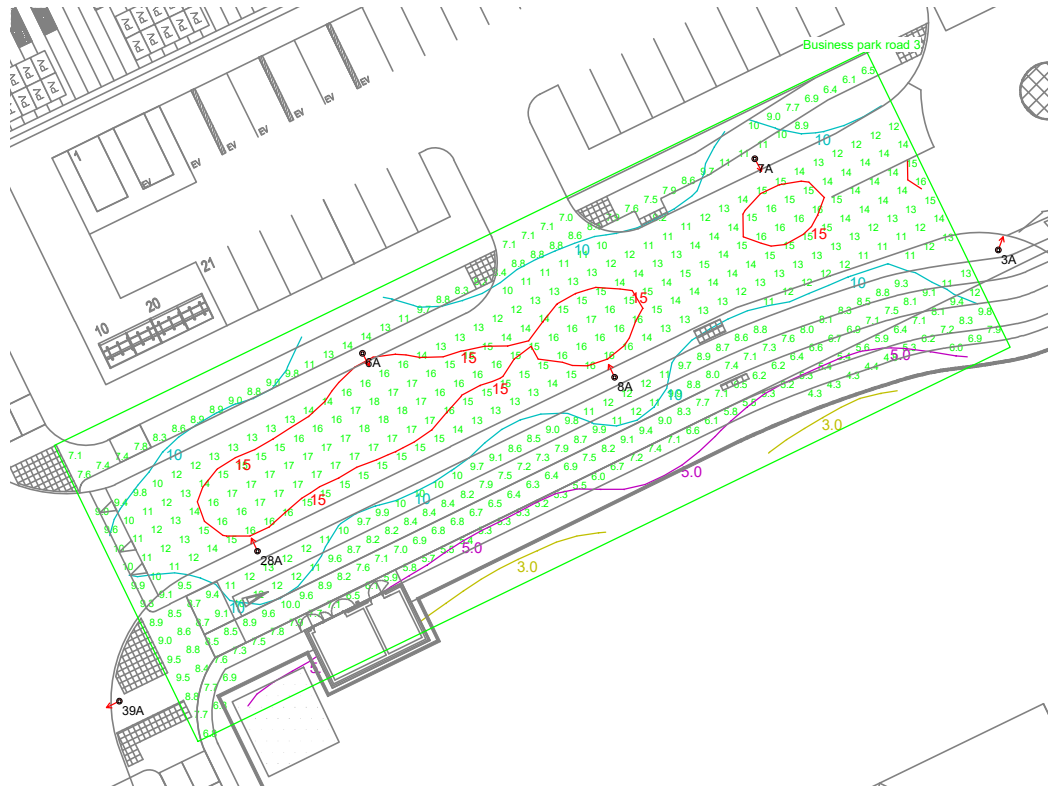
Results

Eav	15.10
Emin	6.56
Emax	23.19
Emin/Emax	0.28
Emin/Eav	0.43
Emax/Eav	1.54



Horizontal Illuminance (lux)

Business park road 3



Results

Eav	11.17
Emin	4.27
Emax	17.80
Emin/Emax	0.24
Emin/Eav	0.38
Emax/Eav	1.59



Horizontal Illuminance (lux)

Business park road 4



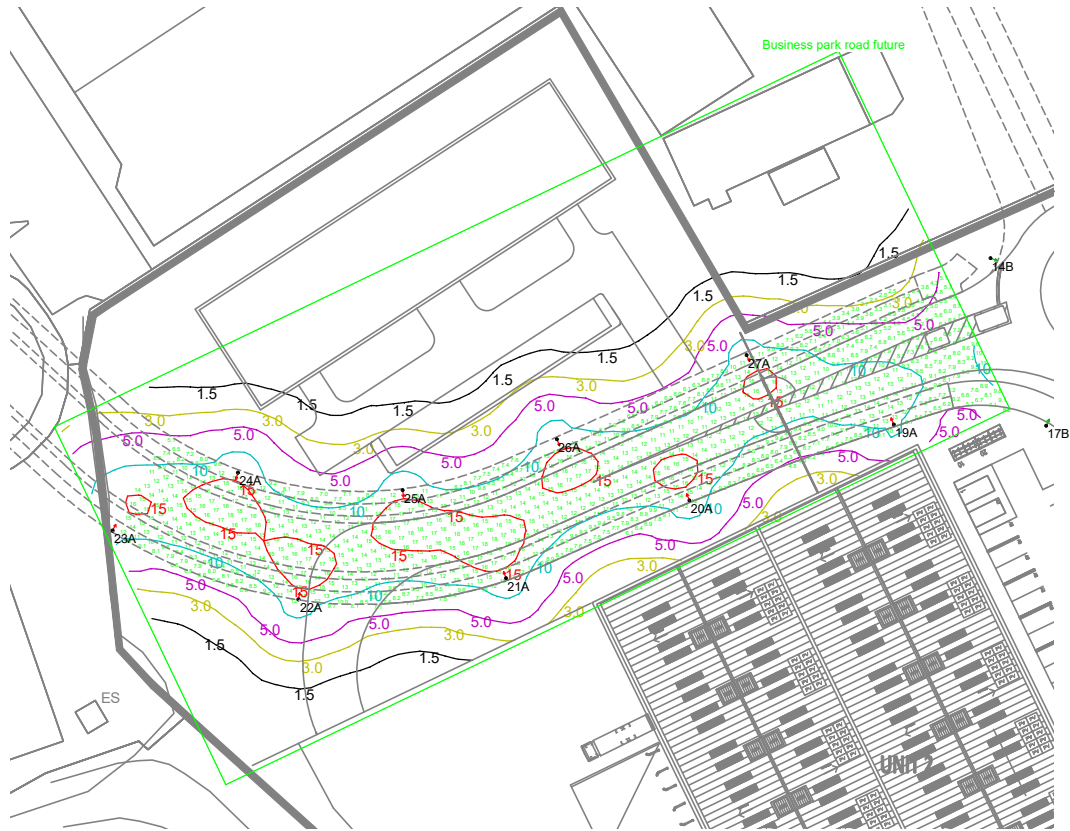
Results

Eav	11.28
Emin	2.59
Emax	20.54
Emin/Emax	0.13
Emin/Eav	0.23
Emax/Eav	1.82



Horizontal Illuminance (lux)

Business park road future



Results

Eav	11.51
Emin	2.46
Emax	18.19
Emin/Emax	0.14
Emin/Eav	0.21
Emax/Eav	1.58