

DATE: 10 April 2026
DESIGNER: Alex Naper
PROJECT No: SES 11925 Rev C
PROJECT NAME: Naas Racecourse -Residential & Creche Area



Client: Ballymore Development Ltd

MF derived from: 0.92×0.90 or 0.97×0.99 (LMF (Low pollution environment & 72 month cleaning cycle) $\times$ LLMF $\times$ LSF)
LLMF & LSF values @ 100,000 hours & 25 degrees C Ta.

Residential area designed in accordance with EN13201-2:2015 Category P4.

Rev B: Revised site layout.

Rev C: Revised site Layout.

Outdoor Lighting Report

PREPARED BY: Sabre Electrical Services Ltd.
Unit 11,
Bellview Industrial Estate,
Tolka Valley Road,
Dublin 11
D11 VN59
Phone Number: 01 8110875
Contact: Alex Naper or Robbie Wilson
eMail: design@sabrelighting.ie or robbie@sabrelighting.ie

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	Grid 1	690073.74	719953.35	263.75	364.27	1.50	1.50
2	Grid 2	690246.73	719767.84	90.00	135.00	1.50	1.50
3	Grid 3	690207.72	720150.68	63.00	114.00	1.50	1.50
4	Grid 4	690227.56	719831.13	51.00	162.00	1.50	1.50

Luminaires

Luminaire A Data



Supplier	C U Phosco
Type	P863-128-R2-4x4-730-SD-0375-70W
Lamp(s)	730SA
Lamp Flux (klm)	10.77
File Name	P863-128-R2-4x4-730-SD-0375-70W.ies
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	338.1, 51.2, 0.0
No. in Project	19

Luminaire B Data



Supplier	C U Phosco
Type	E950-28-R3A-730-C250-7W
Lamp(s)	730N
Lamp Flux (klm)	1.00
File Name	E950-28-R3A-730-C0250-7W.ies
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	716.7, 30.5, 0.3
No. in Project	19

Luminaire C Data



Supplier	C U Phosco
Type	P863-128-R2E-730-W3-200-28W
Lamp(s)	730SS
Lamp Flux (klm)	3.74
File Name	P863-128-R2E-730-W3-200-28W.ies
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	463.7, 84.3, 0.0
No. in Project	1

Luminaire D Data



Supplier	C U Phosco
Type	E950-28-P4P-730-C650-16W
Lamp(s)	730N
Lamp Flux (klm)	2.24
File Name	E950-28-P4P-730-C0650-16W.ies
Maintenance Factor	0.82
Imax70,80,90(cd/klm)	792.6, 411.3, 0.6
No. in Project	46

Luminaire E Data



Supplier	C U Phosco
Type	E950-28-F2A-730-C650-16W
Lamp(s)	730N
Lamp Flux (klm)	2.45
File Name	E950-28-F2A-730-C0650-16W.ies
Maintenance Factor	0.82
Imax70,80,90(cd/klm)	623.6, 113.9, 0.3
No. in Project	15

Luminaire F Data



Supplier	Philips
Type	BGP291 DW50
Lamp(s)	LED-HB 5.2S 730
Lamp Flux (klm)	5.00
File Name	LumiStreet Gen2 Micro_BGP291_DW50_5000_20LED_5.2S_CLO_L90_730.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	609.4, 39.0, 0.0
No. in Project	3

Luminaires**Luminaire H Data**

Supplier	C U Phosco
Type	E950-28-R3A-730-C400-10W
Lamp(s)	730N
Lamp Flux (klm)	1.59
File Name	E950-28-R3A-730-C0400-10W.ies
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	716.7, 30.5, 0.3
No. in Project	3

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	690434.68	720124.28	8.00	164.00	0.00	0.00	0.50			
2	F	690445.93	720157.21	6.00	163.00	0.00	0.00	0.40			
3	A	690404.21	720030.19	8.00	161.00	0.00	0.00	0.50			
4	A	690415.76	720061.09	8.00	161.00	0.00	0.00	0.50			
5	A	690425.80	720092.54	8.00	161.00	0.00	0.00	0.50			
6	A	690392.29	720000.35	8.00	161.00	0.00	0.00	0.50			
7	A	690377.00	719965.58	8.00	161.00	0.00	0.00	0.50			
8	A	690360.72	719934.15	8.00	155.00	0.00	0.00	0.50			
9	A	690342.41	719899.48	8.00	154.00	0.00	0.00	0.50			
10	A	690324.44	719866.73	8.00	154.00	0.00	0.00	0.50			
11	A	690309.71	719841.59	8.00	143.00	0.00	0.00	0.50			
12	A	690289.57	719818.78	8.00	137.00	0.00	0.00	0.50			
13	A	690266.28	719799.75	8.00	129.00	0.00	0.00	0.50			
14	A	690246.70	719776.76	8.00	150.00	0.00	0.00	0.50			
15	A	690232.52	719750.36	8.00	156.00	0.00	0.00	0.50			
16	A	690217.02	719716.07	8.00	159.00	0.00	0.00	0.50			
17	A	690201.47	719681.32	8.00	157.00	0.00	0.00	0.50			
18	A	690188.44	719646.10	8.00	167.00	0.00	0.00	0.50			
19	A	690181.18	719611.95	8.00	166.00	0.00	0.00	0.50			
20	A	690164.30	719587.94	8.00	338.00	0.00	0.00	0.50			
21	C	690178.64	719577.38	8.00	261.00	0.00	0.00	0.50			
22	F	690146.62	719566.75	8.00	83.00	5.00	0.00	0.90			
23	F	690198.74	719561.79	8.00	80.00	5.00	0.00	0.50			
24	D	690268.87	719785.98	6.00	250.00	0.00	0.00	0.40			
26	D	690395.66	720111.71	6.00	74.00	0.00	0.00	0.40			
27	D	690360.41	720131.13	6.00	61.00	0.00	0.00	0.40			
28	D	690343.74	720142.38	6.00	60.00	0.00	0.00	0.40			
29	D	690314.13	720157.95	6.00	64.00	0.00	0.00	0.40			
30	D	690296.53	720181.60	6.00	236.00	0.00	0.00	0.40			
31	D	690289.51	720198.82	6.00	336.00	0.00	0.00	0.40			
33	E	690259.64	720152.38	6.00	327.00	0.00	0.00	0.40			
34	D	690290.69	720133.30	6.00	215.00	0.00	0.00	0.40			
35	D	690264.86	720133.76	6.00	63.00	0.00	0.00	0.40			
36	D	690292.49	720115.46	6.00	67.00	0.00	0.00	0.40			
37	E	690271.84	720173.47	6.00	327.00	0.00	0.00	0.40			
38	E	690287.55	720062.94	6.00	148.00	0.00	0.00	0.40			

Layout Continued

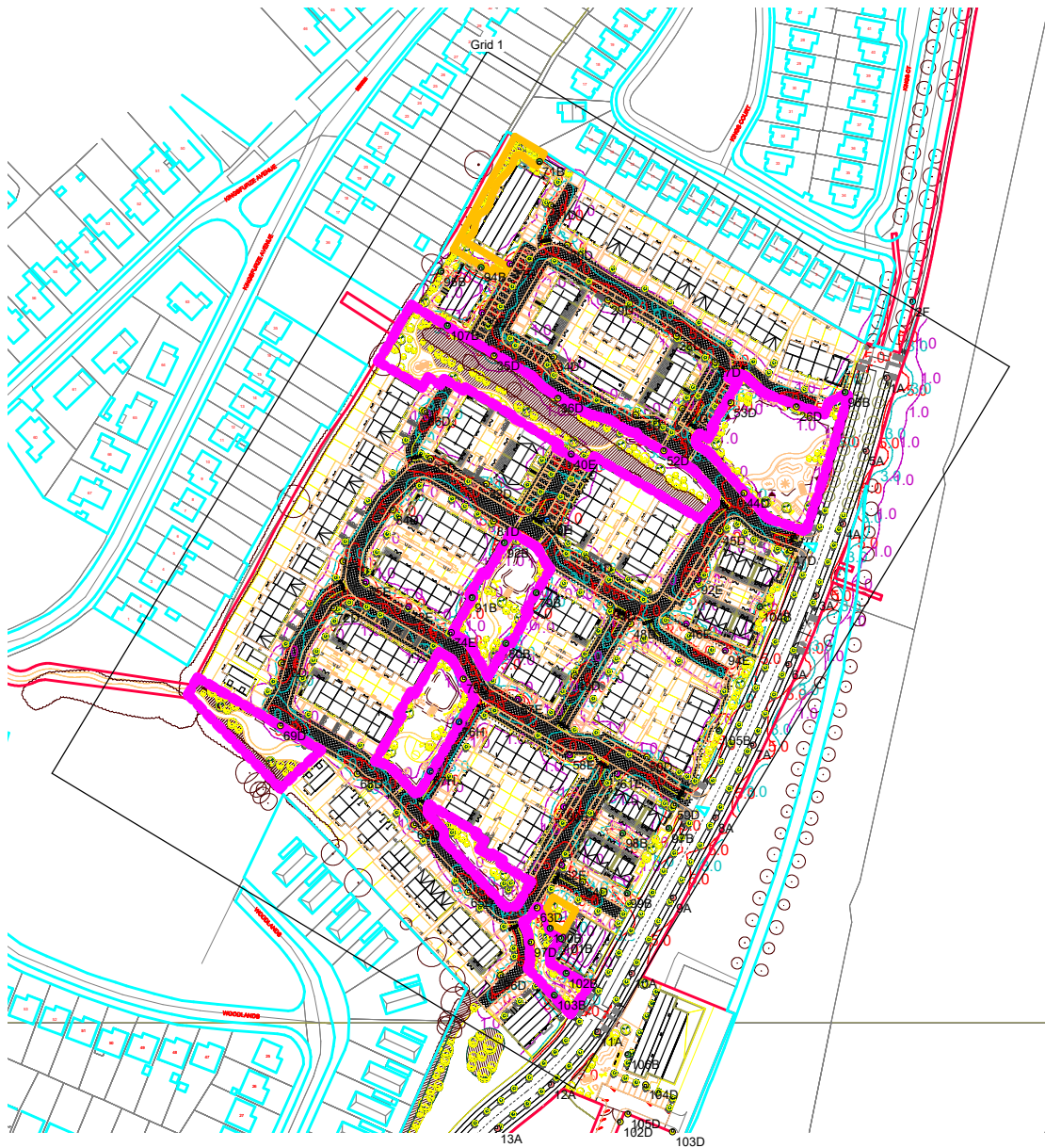
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
39	H	690287.91	720062.74	6.00	329.00	0.00	0.00	0.40			
40	E	690298.32	720091.25	6.00	243.00	0.00	0.00	0.40			
44	D	690372.90	720074.35	6.00	219.00	0.00	0.00	0.40			
45	D	690362.68	720057.99	6.00	153.00	0.00	0.00	0.40			
46	E	690348.10	720017.89	6.00	242.00	0.00	0.00	0.40			
47	D	690393.14	720049.78	6.00	69.00	0.00	0.00	0.40			
48	D	690323.88	720017.97	6.00	147.00	0.00	0.00	0.40			
49	D	690299.64	719995.51	6.00	327.00	0.00	0.00	0.40			
50	D	690331.00	719960.34	6.00	243.00	0.00	0.00	0.40			
51	D	690326.10	720108.26	6.00	242.00	0.00	0.00	0.40			
52	D	690338.21	720092.69	6.00	63.00	0.00	0.00	0.40			
53	D	690367.29	720113.49	6.00	155.00	0.00	0.00	0.40			
54	D	690304.86	720046.25	6.00	241.00	0.00	0.00	0.40			
55	E	690209.48	720036.07	6.00	234.00	0.00	0.00	0.40			
57	E	690275.23	719985.40	6.00	237.00	0.00	0.00	0.40			
58	E	690297.56	719961.25	6.00	82.00	0.00	0.00	0.40			
59	D	690342.74	719939.42	6.00	59.00	0.00	0.00	0.40			
60	E	690295.04	719938.89	6.00	329.00	0.00	0.00	0.40			
61	E	690318.17	719953.22	6.00	148.00	0.00	0.00	0.40			
62	E	690294.14	719913.62	6.00	146.00	0.00	0.00	0.40			
63	D	690283.48	719895.17	6.00	142.00	0.00	0.00	0.40			
64	D	690303.17	719906.45	6.00	239.00	0.00	0.00	0.40			
65	D	690253.60	719901.92	6.00	49.00	0.00	0.00	0.40			
66	D	690230.34	719931.08	6.00	40.00	0.00	0.00	0.40			
67	H	690237.27	719954.21	6.00	330.00	0.00	0.00	0.40			
68	D	690205.75	719953.06	6.00	59.00	0.00	0.00	0.40			
69	D	690172.56	719973.94	6.00	53.00	0.00	0.00	0.40			
70	D	690172.96	720001.04	6.00	342.00	0.00	0.00	0.40			
71	D	690199.64	720044.96	6.00	343.00	0.00	0.00	0.40			
72	D	690195.62	720024.67	6.00	142.00	0.00	0.00	0.40			
73	E	690227.92	720025.24	6.00	234.00	0.00	0.00	0.40			
74	E	690246.36	720014.18	6.00	244.00	0.00	0.00	0.40			
75	D	690251.58	719994.11	6.00	37.00	0.00	0.00	0.40			
76	H	690249.76	719975.53	6.00	329.00	0.00	0.00	0.40			
71	B	690284.58	720217.64	5.00	243.00	0.00	0.00	0.40			
79	B	690283.12	720031.34	5.00	331.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
80	B	690269.95	720009.40	5.00	327.00	0.00	0.00	0.40			
81	D	690264.76	720062.34	6.00	65.00	0.00	0.00	0.40			
82	D	690261.49	720078.36	6.00	244.00	0.00	0.00	0.40			
84	D	690221.28	720067.22	6.00	140.00	0.00	0.00	0.40			
85	D	690237.39	720089.28	6.00	264.00	0.00	0.00	0.40			
86	D	690234.88	720109.83	6.00	331.00	0.00	0.00	0.40			
91	D	690346.31	720110.92	5.00	329.00	0.00	0.00	0.40			
92	E	690353.11	720036.84	6.00	153.00	0.00	0.00	0.40			
94	E	690364.89	720006.38	6.00	236.00	0.00	0.00	0.40			
95	D	690294.60	719773.94	6.00	243.00	0.00	0.00	0.40			
96	D	690267.76	719866.02	6.00	317.00	0.00	0.00	0.40			
97	D	690280.91	719880.37	6.00	192.00	0.00	0.00	0.40			
101	D	690310.23	719779.31	6.00	158.00	0.00	0.00	0.40			
102	D	690319.46	719802.62	6.00	149.00	0.00	0.00	0.40			
103	D	690342.01	719798.38	6.00	75.00	0.00	0.00	0.40			
104	D	690330.39	719818.68	6.00	252.00	0.00	0.00	0.40			
105	D	690322.71	719806.03	6.00	68.00	0.00	0.00	0.40			
106	B	690322.72	719831.77	5.00	157.00	0.00	0.00	0.40			
91	B	690255.43	720029.33	5.00	151.00	0.00	0.00	0.40			
92	B	690269.34	720052.99	5.00	155.00	0.00	0.00	0.40			
93	D	690315.02	720026.05	6.00	65.00	0.00	0.00	0.40			
94	B	690259.32	720171.97	5.00	243.00	0.00	0.00	0.40			
95	B	690242.01	720170.30	5.00	318.00	0.00	0.00	0.40			
96	B	690416.69	720118.01	5.00	156.00	0.00	0.00	0.40			
97	B	690340.48	719929.57	5.00	158.00	0.00	0.00	0.40			
98	B	690320.53	719927.39	5.00	243.00	0.00	0.00	0.40			
99	B	690322.49	719901.43	5.00	228.00	0.00	0.00	0.40			
100	B	690289.10	719886.29	5.00	55.00	0.00	0.00	0.40			
101	B	690293.86	719881.92	5.00	148.00	0.00	0.00	0.40			
102	B	690296.04	719866.94	5.00	50.00	0.00	0.00	0.40			
103	B	690290.96	719857.43	5.00	219.00	0.00	0.00	0.40			
104	B	690379.83	720025.19	5.00	333.00	0.00	0.00	0.40			
105	B	690362.22	719971.67	5.00	147.00	0.00	0.00	0.40			
107	B	690244.69	720146.79	5.00	65.00	0.00	0.00	0.40			

Horizontal Illuminance (lux)

Grid 1

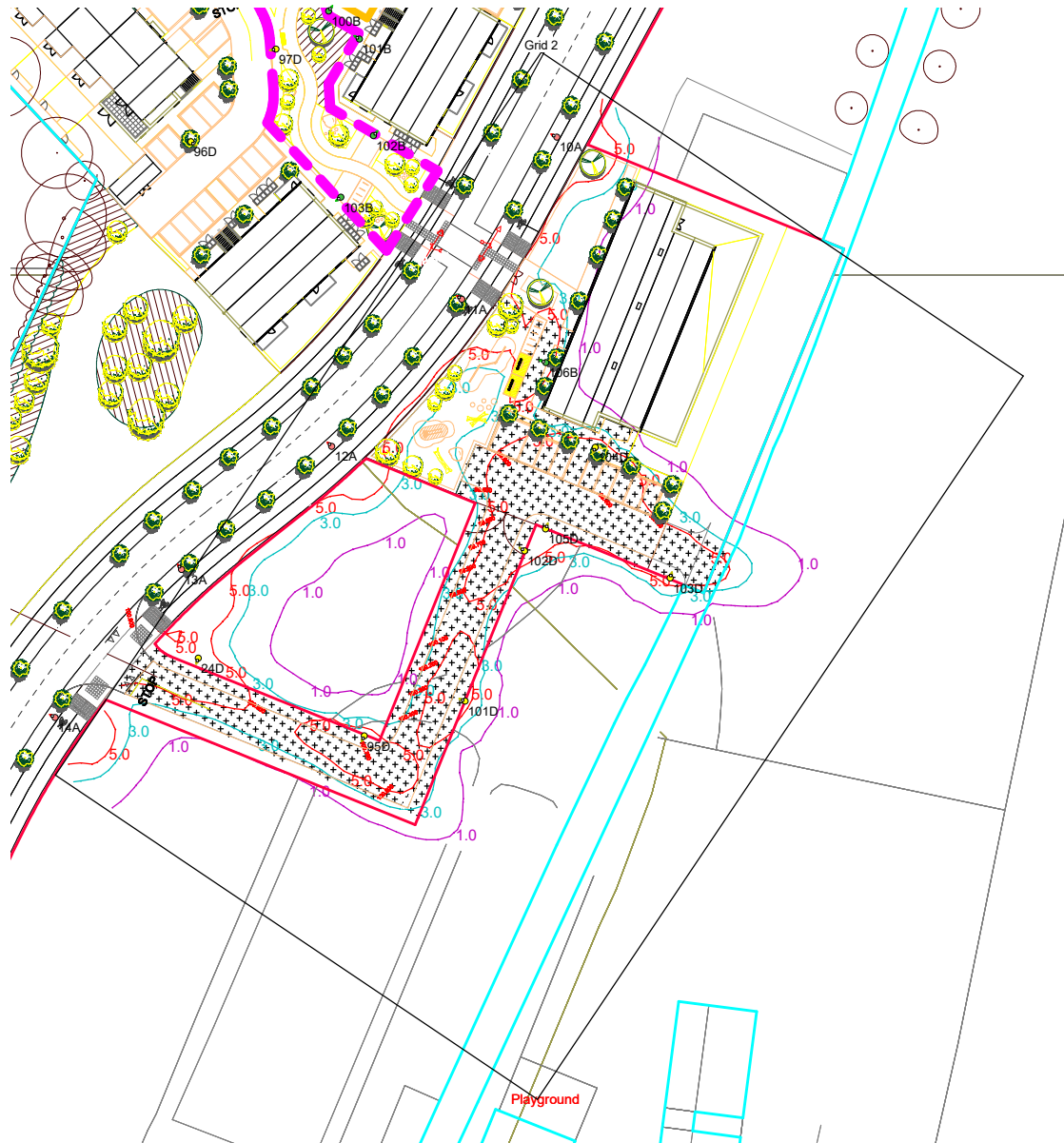


Results

Eav	5.15
Emin	1.01
Emax	22.06
Emin/Emax	0.05
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 2



Results

Eav	6.73
Emin	1.32
Emax	19.80
Emin/Emax	0.07
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 3



Results

Eav	5.00
Emin	0.71
Emax	14.93
Emin/Emax	0.05
Emin/Eav	0.14

Horizontal Illuminance (lux)

Grid 4



Results

Eav	5.99
Emin	0.31
Emax	20.45
Emin/Emax	0.02
Emin/Eav	0.05