

DATE: 27 June 2022
DESIGNER: Alex Naper
PROJECT No: SES 09121 Rev D
PROJECT NAME: Barnhill Residential Development



Client: Alanna Homes Ltd & Alcove Ireland Four Ltd
Grids 1,2,5,8,9 & 10.
Residential area designed in accordance with EN13201-2:2015 Category P4.
Access roads designed in accordance with EN13201-2:2015 Category P3.
Rev A: Client name updated.
Rev B: Revised site layout
Rev C: Updated as per comments.
Rev D: Updated site layout.

Outdoor Lighting Report

PREPARED BY: Sabre Electrical Services Ltd.
Unit 11,
Bellview Industrial Estate,
Tolka Valley Road,
Dublin 11
Phone Number: 01 8110875
Contact: Graham Sheehan
eMail: graham@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	184403.83	1002576.87	235.30	298.00	1.50	1.50
2	Grid 2	184582.41	1002776.52	235.30	169.17	1.50	1.50
3	Grid 3	184478.63	1002918.51	364.38	332.64	182.19	166.32
4	Grid 4	184858.67	1002936.49	282.67	374.00	141.33	187.00
5	Grid 5	184575.81	1002705.94	309.86	298.00	1.50	1.50
6	Grid 6	184671.36	1003054.36	63.00	163.00	31.50	81.50
7	Grid 7	184867.94	1002809.80	165.00	298.00	82.50	149.00
8	Grid 8	184637.63	1002616.66	283.05	169.17	1.50	1.50
9	Grid 9	184307.09	1002755.37	141.00	190.00	1.50	1.50
10	Grid 10	184341.72	1003018.38	123.00	260.70	1.50	1.50
11	Grid 11	184181.78	1002792.73	135.00	375.26	1.50	1.50

Luminaires

Luminaire A Data

Supplier	C U Phosco
Type	E950-28-P4A-727-C550-14W
Lamp(s)	727N
Lamp Flux (klm)	2.03
File Name	E950-28-P4A-727-C0550-14W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	68



Luminaire B Data

Supplier	C U Phosco
Type	E950-28-P4A-727-C350-10W
Lamp(s)	727N
Lamp Flux (klm)	1.33
File Name	E950-28-P4A-727-C0350-10W.ies
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	31



Luminaire C Data

Supplier	C U Phosco
Type	P863-128-R2E-730-W3-375-49W
Lamp(s)	730SS
Lamp Flux (klm)	6.92
File Name	P863-128-R2E-730-W3-375-49W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	463.7, 84.3, 0.0
No. in Project	14

Luminaire D Data

Supplier	C U Phosco
Type	P863-128-P3-740-W5-350-46W
Lamp(s)	740SS
Lamp Flux (klm)	6.80
File Name	P863-128-P3-740-W5-350-46W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	343.1, 133.7, 0.7
No. in Project	1

Luminaires

Luminaire E Data

Supplier	C U Phosco
Type	E950-28-R3A-727-C350-10W
Lamp(s)	727N
Lamp Flux (klm)	1.36
File Name	E950-28-R3A-727-C0350-10W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	716.7, 30.5, 0.3
No. in Project	38

Luminaire G Data

Supplier	C U Phosco
Type	E950-28-F2A-727-C550-14W
Lamp(s)	727N
Lamp Flux (klm)	2.06
File Name	E950-28-F2A-727-C0550-14W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	623.6, 113.9, 0.3
No. in Project	11



Luminaire H Data

Supplier	C U Phosco
Type	P863-128-P3-740-W5-350-46W
Lamp(s)	740SS
Lamp Flux (klm)	6.80
File Name	P863-128-P3-740-W5-350-46W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	343.1, 133.7, 0.7
No. in Project	2

Luminaire I Data

Supplier	C U Phosco
Type	E950-28-R3A-727-C350-10W
Lamp(s)	727N
Lamp Flux (klm)	1.36
File Name	E950-28-R3A-727-C0350-10W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	716.7, 30.5, 0.3
No. in Project	4



Luminaire J Data

Supplier	C U Phosco
Type	E950-28-P4A-727-C550-14W
Lamp(s)	727N
Lamp Flux (klm)	2.03
File Name	E950-28-P4A-727-C0550-14W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	4

Luminaire K Data

Supplier	C U Phosco
Type	P863-128-R2E-730-W3-375-49W
Lamp(s)	730SS
Lamp Flux (klm)	6.92
File Name	P863-128-R2E-730-W3-375-49W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	463.7, 84.3, 0.0
No. in Project	8

Luminaire L Data

Supplier	C U Phosco
Type	E950-28-P4A-727-C350-10W
Lamp(s)	727N
Lamp Flux (klm)	1.33
File Name	E950-28-P4A-727-C0350-10W.ies
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	1

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	184571.05	1002741.91	6.00	101.00	0.00	0.00	0.40			
2	A	184538.77	1002736.22	6.00	101.00	0.00	0.00	0.40			
3	C	184586.33	1002733.42	8.00	11.00	0.00	0.00	0.40			
4	A	184505.02	1002729.51	6.00	102.00	0.00	0.00	0.40			
5	A	184468.55	1002726.45	6.00	87.00	0.00	0.00	0.40			
6	A	184435.37	1002733.01	6.00	287.00	0.00	0.00	0.40			
7	A	184452.43	1002721.08	6.00	96.00	0.00	0.00	0.40			
8	E	184545.93	1002705.47	5.00	269.00	0.00	0.00	0.40			
9	B	184418.94	1002731.23	5.00	325.00	0.00	0.00	0.40			
10	A	184400.54	1002712.68	6.00	306.00	0.00	0.00	0.40			
11	A	184430.26	1002715.51	6.00	115.00	0.00	0.00	0.40			
12	A	184408.55	1002684.20	6.00	54.00	0.00	0.00	0.40			
13	G	184419.31	1002703.46	6.00	237.00	0.00	0.00	0.40			
14	E	184431.67	1002685.74	5.00	278.00	0.00	0.00	0.40			
15	B	184431.17	1002749.33	5.00	330.00	0.00	0.00	0.40			
16	B	184444.59	1002774.44	5.00	325.00	0.00	0.00	0.40			
17	B	184456.42	1002798.51	5.00	329.00	0.00	0.00	0.40			
18	B	184465.86	1002824.07	5.00	332.00	0.00	0.00	0.40			
19	B	184472.80	1002851.14	5.00	335.00	0.00	0.00	0.40			
20	B	184481.78	1002878.38	5.00	335.00	0.00	0.00	0.40			
21	B	184489.02	1002906.43	5.00	345.00	0.00	0.00	0.40			
22	L	184490.82	1002933.41	5.00	350.00	0.00	0.00	0.40			
23	A	184492.53	1002838.15	6.00	112.00	0.00	0.00	0.40			
24	A	184548.17	1002721.83	6.00	3.00	0.00	0.00	0.40			
25	E	184459.19	1002689.18	5.00	278.00	0.00	0.00	0.40			
26	A	184564.94	1002718.48	6.00	189.00	0.00	0.00	0.40			
27	E	184485.57	1002695.88	5.00	288.00	0.00	0.00	0.40			
28	E	184505.30	1002700.56	5.00	270.00	0.00	0.00	0.40			
29	A	184565.89	1002777.37	6.00	284.00	0.00	0.00	0.40			
30	A	184537.59	1002771.97	6.00	284.00	0.00	0.00	0.40			
31	A	184500.13	1002765.06	6.00	268.00	0.00	0.00	0.40			
32	A	184468.65	1002767.93	6.00	262.00	0.00	0.00	0.40			
33	A	184525.34	1002758.49	6.00	103.00	0.00	0.00	0.40			
34	A	184517.56	1002773.62	6.00	19.00	0.00	0.00	0.40			
35	A	184519.36	1002803.21	6.00	194.00	0.00	0.00	0.40			
36	G	184526.59	1002820.00	6.00	105.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
37	G	184527.43	1002842.67	6.00	288.00	0.00	0.00	0.40			
38	A	184508.53	1002845.12	6.00	195.00	0.00	0.00	0.40			
39	A	184500.04	1002877.76	6.00	190.00	0.00	0.00	0.40			
40	A	184506.88	1002888.23	6.00	105.00	0.00	0.00	0.40			
41	E	184451.75	1002754.28	5.00	92.00	0.00	0.00	0.40			
42	A	184510.47	1002907.92	6.00	282.00	0.00	0.00	0.40			
43	A	184487.39	1002852.47	6.00	281.00	0.00	0.00	0.40			
44	E	184552.94	1002783.22	6.00	191.00	0.00	0.00	0.40			
45	E	184545.17	1002813.36	6.00	193.00	0.00	0.00	0.40			
46	E	184532.87	1002859.91	5.00	195.00	0.00	0.00	0.40			
47	E	184526.25	1002884.37	5.00	191.00	0.00	0.00	0.40			
48	A	184504.61	1002814.14	6.00	14.00	0.00	0.00	0.40			
49	C	184599.09	1002756.39	8.00	201.00	0.00	0.00	0.40			
50	C	184587.23	1002783.80	8.00	202.00	0.00	0.00	0.40			
51	C	184556.62	1002808.06	8.00	24.00	0.00	0.00	0.40			
52	C	184566.82	1002839.00	8.00	208.00	0.00	0.00	0.40			
53	A	184585.31	1002821.62	6.00	283.00	0.00	0.00	0.40			
54	C	184542.86	1002860.67	8.00	20.00	0.00	0.00	0.40			
55	C	184548.14	1002897.21	8.00	200.00	0.00	0.00	0.40			
56	C	184524.22	1002925.54	8.00	356.00	0.00	0.00	0.40			
57	C	184548.77	1002933.94	8.00	105.00	0.00	0.00	0.40			
58	K	184564.44	1002958.50	8.00	288.00	0.00	0.00	0.40			
59	C	184598.64	1002949.55	8.00	113.00	0.00	0.00	0.40			
60	J	184585.32	1002976.64	6.00	21.00	0.00	0.00	0.40			
61	K	184627.26	1002974.37	8.00	287.00	0.00	0.00	0.40			
62	C	184654.79	1002966.90	8.00	106.00	0.00	0.00	0.40			
63	C	184687.38	1002990.98	8.00	295.00	0.00	0.00	0.40			
64	C	184728.94	1002997.36	8.00	129.00	0.00	0.00	0.40			
65	K	184733.16	1003031.68	8.00	198.00	0.00	0.00	0.40			
66	K	184712.12	1003052.86	8.00	25.00	0.00	0.00	0.40			
67	D	184743.04	1003056.20	8.00	292.00	0.00	0.00	0.40			
68	H	184779.26	1003063.39	8.00	106.00	0.00	0.00	0.40			
69	H	184806.46	1003083.35	8.00	295.00	0.00	0.00	0.40			
70	A	184677.61	1002840.27	6.00	325.00	0.00	0.00	0.40			
71	J	184700.38	1003077.24	6.00	26.00	0.00	0.00	0.40			
72	C	184611.65	1002715.12	8.00	204.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
73	E	184614.39	1002814.75	5.00	90.00	0.00	0.00	0.40			
74	A	184633.28	1002826.14	6.00	257.00	0.00	0.00	0.40			
75	A	184613.90	1002838.05	6.00	169.00	0.00	0.00	0.40			
76	A	184607.16	1002858.36	6.00	338.00	0.00	0.00	0.40			
77	A	184621.82	1002877.13	6.00	173.00	0.00	0.00	0.40			
78	A	184609.97	1002889.12	6.00	354.00	0.00	0.00	0.40			
79	A	184620.60	1002904.54	6.00	191.00	0.00	0.00	0.40			
80	G	184603.58	1002935.30	6.00	283.00	0.00	0.00	0.40			
81	E	184573.90	1002844.80	5.00	108.00	0.00	0.00	0.40			
82	E	184598.94	1002852.51	5.00	108.00	0.00	0.00	0.40			
83	E	184599.61	1002942.02	5.00	20.00	0.00	0.00	0.40			
84	E	184588.01	1002808.63	5.00	106.00	0.00	0.00	0.40			
85	E	184640.89	1002809.41	5.00	88.00	0.00	0.00	0.40			
86	E	184672.18	1002814.42	5.00	118.00	0.00	0.00	0.40			
87	A	184660.05	1002824.49	6.00	276.00	0.00	0.00	0.40			
88	A	184682.20	1002869.85	6.00	347.00	0.00	0.00	0.40			
89	A	184682.11	1002903.15	6.00	1.00	0.00	0.00	0.40			
90	A	184676.49	1002935.79	6.00	19.00	0.00	0.00	0.40			
91	A	184668.79	1002960.13	6.00	22.00	0.00	0.00	0.40			
92	A	184600.12	1002921.82	6.00	18.00	0.00	0.00	0.40			
93	A	184587.56	1002897.75	6.00	290.00	0.00	0.00	0.40			
94	I	184505.41	1002940.82	5.00	288.00	0.00	0.00	0.40			
95	I	184504.29	1002958.00	5.00	26.00	0.00	0.00	0.40			
125	I	184520.28	1002960.48	5.00	201.00	0.00	0.00	0.40			
130	J	184654.32	1002994.38	6.00	20.00	0.00	0.00	0.40			
197	J	184785.69	1003143.05	6.00	300.00	0.00	0.00	0.40			
200	I	184791.11	1003130.50	6.00	111.00	0.00	0.00	0.40			
100	B	184322.51	1002849.45	5.00	141.00	0.00	0.00	0.40			
211	K	184887.76	1002910.29	8.00	138.00	0.00	0.00	0.40			
104	E	184709.34	1002882.17	5.00	138.00	0.00	0.00	0.40			
213	K	184850.29	1002890.81	8.00	327.00	0.00	0.00	0.40			
214	K	184854.16	1002853.38	8.00	41.00	0.00	0.00	0.40			
215	K	184870.41	1002867.02	8.00	230.00	0.00	0.00	0.40			
216	B	184617.46	1002754.77	5.00	258.00	0.00	0.00	0.40			
217	B	184645.55	1002757.00	5.00	301.00	0.00	0.00	0.40			
218	E	184526.25	1002700.79	5.00	283.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
219	A	184331.75	1002912.49	6.00	88.00	0.00	0.00	0.40			
220	A	184362.06	1002915.42	6.00	96.00	0.00	0.00	0.40			
221	A	184347.63	1002907.47	6.00	180.00	0.00	0.00	0.40			
222	A	184389.97	1002918.20	6.00	99.00	0.00	0.00	0.40			
223	A	184430.44	1002923.68	6.00	87.00	0.00	0.00	0.40			
224	A	184388.05	1002839.18	6.00	333.00	0.00	0.00	0.40			
225	G	184392.05	1002809.87	6.00	62.00	0.00	0.00	0.40			
226	G	184324.40	1002817.31	6.00	353.00	0.00	0.00	0.40			
227	A	184371.23	1002806.48	6.00	325.00	0.00	0.00	0.40			
228	A	184353.98	1002810.31	6.00	236.00	0.00	0.00	0.40			
229	E	184377.61	1002787.36	5.00	240.00	0.00	0.00	0.40			
232	A	184340.62	1002880.09	6.00	164.00	0.00	0.00	0.40			
233	G	184326.80	1002869.52	6.00	30.00	0.00	0.00	0.40			
234	B	184320.08	1002831.96	5.00	180.00	0.00	0.00	0.40			
235	E	184395.14	1002795.53	5.00	147.00	0.00	0.00	0.40			
236	G	184400.87	1002826.03	6.00	252.00	0.00	0.00	0.40			
237	E	184418.54	1002842.68	5.00	162.00	0.00	0.00	0.40			
238	E	184428.57	1002871.11	5.00	165.00	0.00	0.00	0.40			
239	E	184436.48	1002906.95	5.00	174.00	0.00	0.00	0.40			
240	A	184330.72	1003152.00	6.00	263.00	0.00	0.00	0.40			
241	A	184343.79	1003166.05	6.00	281.00	0.00	0.00	0.40			
242	A	184348.11	1003144.92	6.00	180.00	0.00	0.00	0.40			
244	A	184359.96	1003128.13	6.00	115.00	0.00	0.00	0.40			
245	A	184336.25	1003115.71	6.00	115.00	0.00	0.00	0.40			
246	A	184374.22	1003145.78	6.00	285.00	0.00	0.00	0.40			
247	E	184377.10	1003163.58	5.00	193.00	0.00	0.00	0.40			
248	A	184364.41	1003174.02	6.00	7.00	0.00	0.00	0.40			
249	A	184358.30	1003204.21	6.00	12.00	0.00	0.00	0.40			
250	A	184363.60	1003227.98	6.00	199.00	0.00	0.00	0.40			
251	A	184326.12	1003219.18	6.00	106.00	0.00	0.00	0.40			
252	A	184345.22	1003222.98	6.00	106.00	0.00	0.00	0.40			
253	A	184358.12	1003254.70	6.00	192.00	0.00	0.00	0.40			
254	G	184335.52	1003268.96	6.00	8.00	0.00	0.00	0.40			
255	A	184359.07	1003274.76	6.00	187.00	0.00	0.00	0.40			
256	A	184387.44	1003121.57	6.00	23.00	0.00	0.00	0.40			
257	A	184401.86	1003093.16	6.00	34.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
258	A	184416.09	1003066.35	6.00	55.00	0.00	0.00	0.40			
268	A	184419.56	1002917.05	6.00	187.00	0.00	0.00	0.40			
269	A	184407.52	1002899.76	6.00	350.00	0.00	0.00	0.40			
270	G	184420.18	1002877.14	6.00	81.00	0.00	0.00	0.40			
271	G	184425.19	1002896.47	6.00	263.00	0.00	0.00	0.40			
272	A	184399.58	1002868.91	6.00	339.00	0.00	0.00	0.40			
273	E	184691.32	1002839.69	5.00	165.00	0.00	0.00	0.40			
274	E	184696.56	1002863.74	5.00	175.00	0.00	0.00	0.40			
275	E	184696.11	1002893.02	5.00	188.00	0.00	0.00	0.40			
276	E	184691.90	1002924.64	5.00	195.00	0.00	0.00	0.40			
277	E	184683.74	1002955.10	5.00	194.00	0.00	0.00	0.40			
278	B	184697.27	1002814.97	5.00	242.00	0.00	0.00	0.40			
279	E	184671.12	1002803.64	5.00	144.00	0.00	0.00	0.40			
280	E	184707.54	1002903.37	5.00	272.00	0.00	0.00	0.40			
281	E	184733.35	1002917.08	5.00	322.00	0.00	0.00	0.40			
282	B	184736.97	1002944.31	5.00	15.00	0.00	0.00	0.40			
291	B	184659.00	1002778.84	5.00	344.00	0.00	0.00	0.40			
292	B	184677.82	1002761.39	5.00	239.00	0.00	0.00	0.40			
293	B	184695.63	1002745.45	5.00	231.00	0.00	0.00	0.40			
294	B	184697.69	1002730.43	5.00	51.00	0.00	0.00	0.40			
295	B	184712.73	1002750.28	5.00	165.00	0.00	0.00	0.40			
296	B	184713.94	1002781.23	5.00	1.00	0.00	0.00	0.40			
297	B	184733.74	1002790.14	5.00	124.00	0.00	0.00	0.40			
298	B	184720.08	1002804.58	5.00	258.00	0.00	0.00	0.40			
300	B	184753.50	1002801.54	5.00	276.00	0.00	0.00	0.40			
301	B	184785.64	1002804.99	5.00	111.00	0.00	0.00	0.40			
302	B	184813.83	1002822.78	5.00	144.00	0.00	0.00	0.40			
303	B	184831.80	1002848.37	5.00	156.00	0.00	0.00	0.40			
305	E	184507.94	1002711.22	5.00	193.00	0.00	0.00	0.40			
306	E	184466.88	1002707.15	5.00	202.00	0.00	0.00	0.40			
197	E	184724.44	1002900.92	5.00	138.00	0.00	0.00	0.40			
198	E	184756.73	1002961.80	5.00	330.00	0.00	0.00	0.40			
199	E	184745.04	1002940.69	5.00	325.00	0.00	0.00	0.40			
200	B	184743.30	1002965.80	5.00	175.00	0.00	0.00	0.40			
201	B	184724.53	1002962.94	5.00	54.00	0.00	0.00	0.40			
202	B	184748.36	1002991.52	5.00	173.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
203	B	184697.30	1002976.43	5.00	269.00	0.00	0.00	0.40			
204	B	184724.38	1002981.26	5.00	287.00	0.00	0.00	0.40			

Horizontal Illuminance (lux)

Grid 1

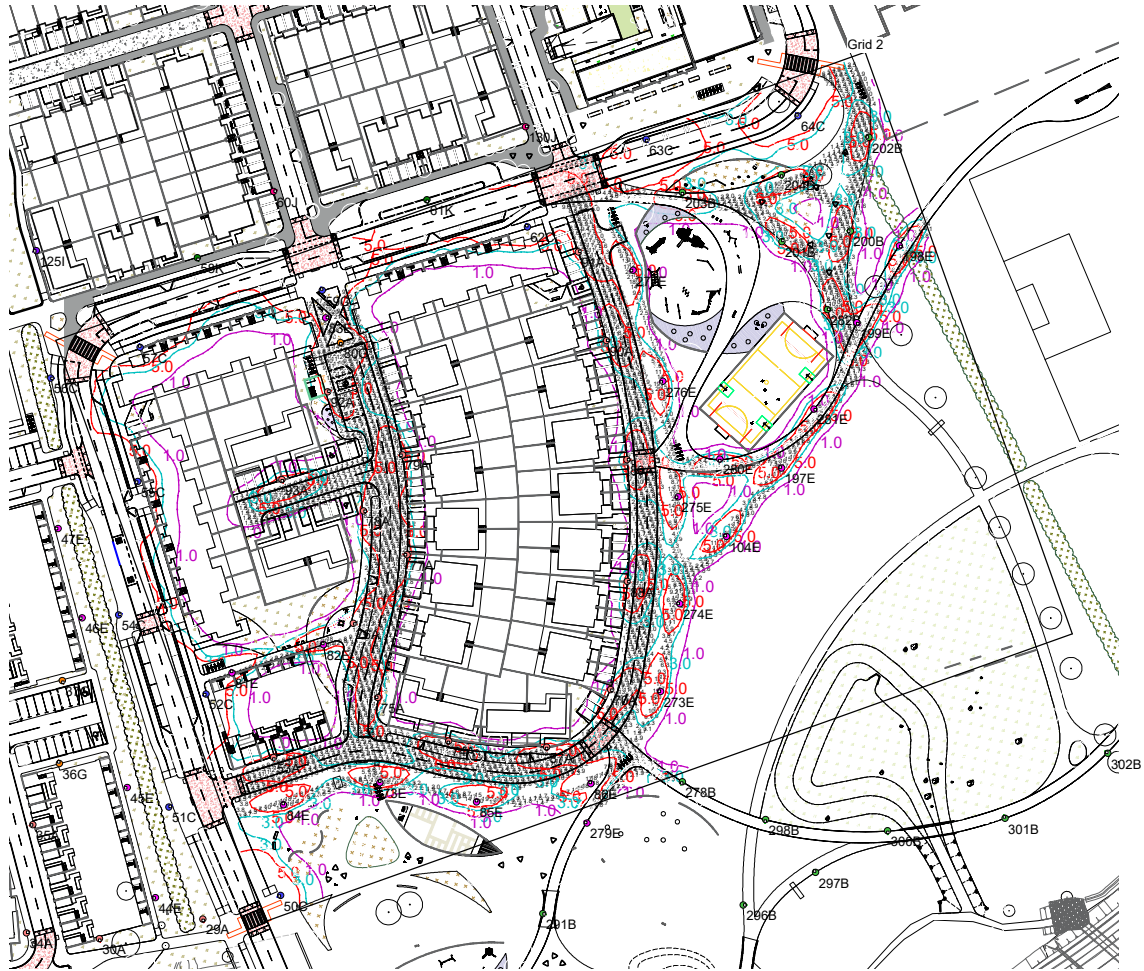


Results

Eav	5.32
Emin	1.09
Emax	20.15
Emin/Emax	0.05
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 2



Results

Eav	5.80
Emin	1.15
E _{max}	20.73
E _{min} /E _{max}	0.06
E _{min} /E _{av}	0.20

Horizontal Illuminance (lux)

Grid 5

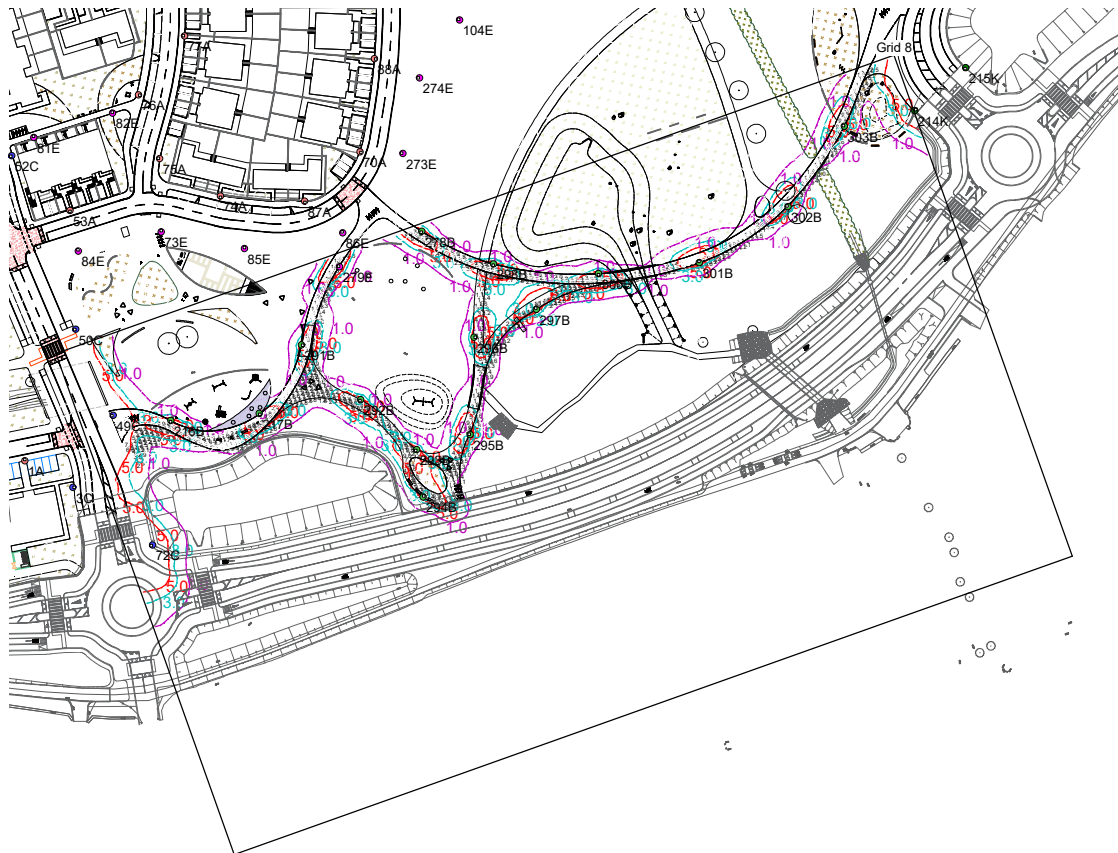


Results

Eav	8.92
Emin	1.77
E _{max}	28.63
E _{min} /E _{max}	0.06
E _{min} /E _{av}	0.20

Horizontal Illuminance (lux)

Grid 8

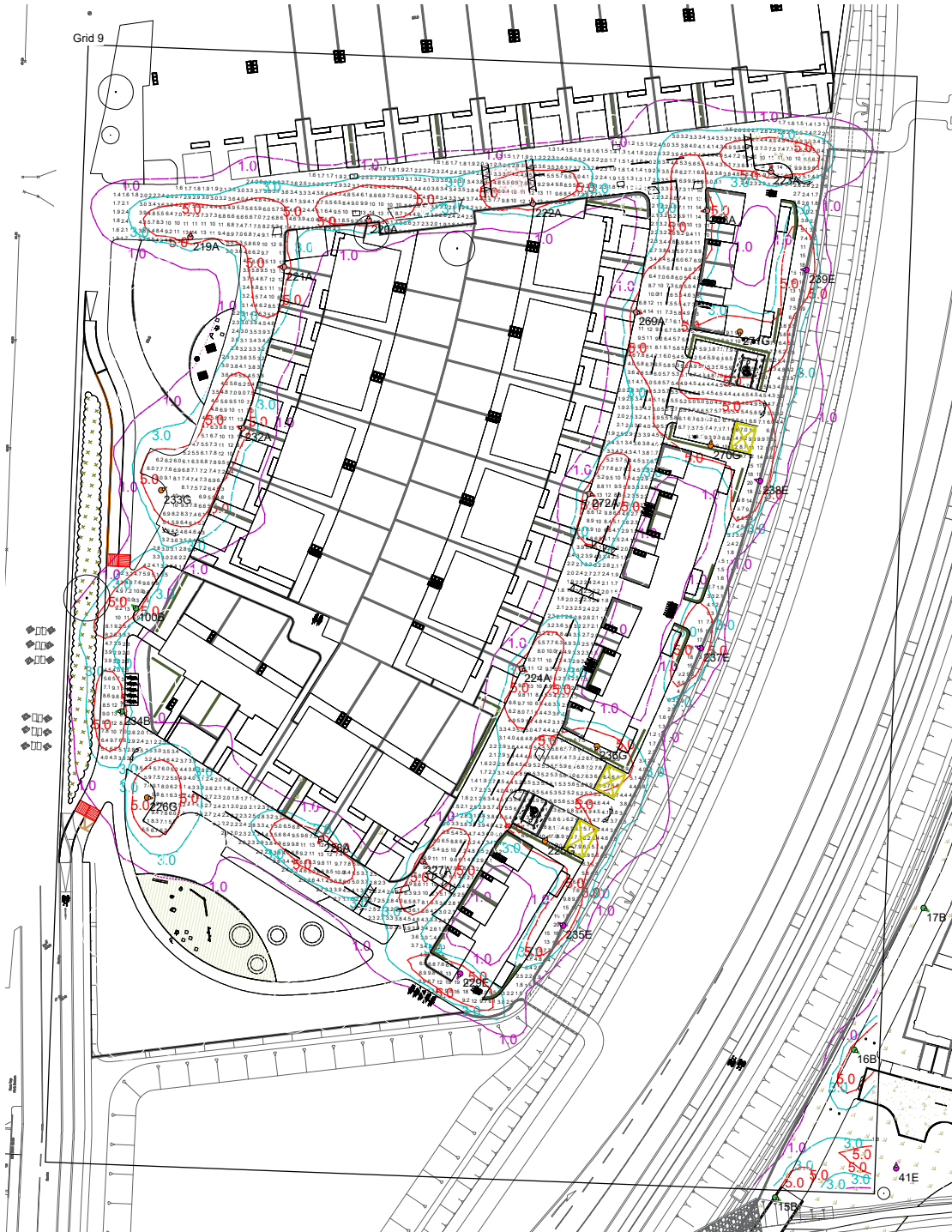


Results

Eav	5.00
Emin	1.04
Emax	19.31
Emin/Emax	0.05
Emin/Eav	0.21

Horizontal Illuminance (lux)

Grid 9



Results

Eav	5.46
Emin	1.09
Emax	19.75
Emin/Emax	0.06
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 10



Results

Eav	5.37
Emin	1.11
E _{max}	20.70
E _{min} /E _{max}	0.05
E _{min} /E _{av}	0.21