

DATE: 19 November 2021
DESIGNER: Alex Naper
PROJECT No: SES 13021 Rev B
PROJECT NAME: Clonburris Phase 1A - Cairn



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

Step section designed in accordance with I.S.EN17210-2021 with illuminance levels as per the recommendations of BS8300-1:2018 Table 5 Stairways and ramps (open) in the external environment.

Rev A: Circuit Layout added & updated as per comments.
Rev B: 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	705685.69	732404.99	250.05	131.77	1.50	1.50
2	Grid 2	705548.00	732223.00	335.00	186.00	1.50	1.50
3	Grid 3	705882.91	732213.93	258.79	205.00	1.50	1.50
4	Grid 4	706078.50	732211.09	60.00	207.00	1.50	1.50
5	Grid 5	705553.57	732500.23	187.00	39.00	1.50	1.50
6	Grid 6	705740.05	732499.14	203.75	39.00	1.50	1.50
7	Grid 7 (Steps)	706062.55	732404.59	5.69	2.54	0.81	0.32

Luminaires

Luminaire A Data

Supplier	C U Phosco
Type	E950-28-P4A-727-C650-17W
Lamp(s)	727N
Lamp Flux (klm)	2.35
File Name	E950-28-P4A-727-C0650-17W.ies
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	87

Luminaire B Data

Supplier	C U Phosco
Type	E950-28-R3A-727-C200-7W
Lamp(s)	727N
Lamp Flux (klm)	0.77
File Name	E950-28-R3A-727-C0200-7W.ies
Maintenance Factor	0.89
Imax70,80,90(cd/klm)	716.7, 30.5, 0.3
No. in Project	54



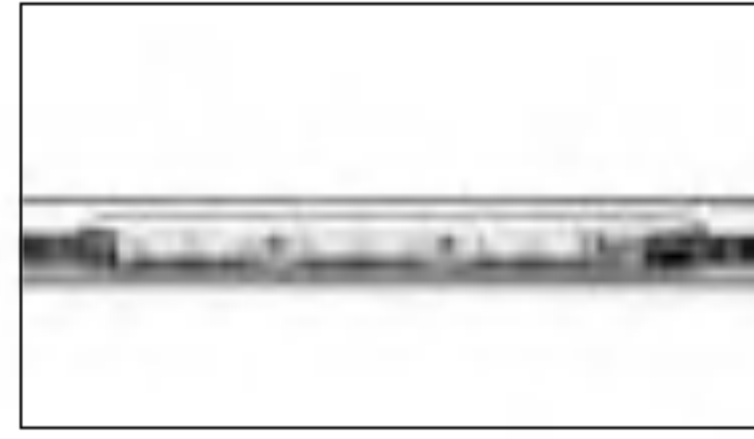
Luminaire C Data

Supplier	C U Phosco
Type	E950-28-F2A-727-C650-17W
Lamp(s)	727N
Lamp Flux (klm)	2.39
File Name	E950-28-F2A-727-C0650-17W.ies
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	623.6, 113.9, 0.3
No. in Project	8

Luminaire D Data

Supplier	Urbis Schreder
Type	AXIA 2.1 5165 Integrated lenses Rear louvers 8 OSLON SQUARE
Lamp(s)	8 OSLON SQUARE GIANT@500mA WW 7 27 230V 00-36-648
LampFlux(klm)/Colour	1.32 WW 2700K/70
File Name	AXIA 2.1 5165 8 OSLON SQUARE GIANT 500mA WW 727 14.2W 434262 Integrated L...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1690.7, 164.7, 3.2
No. in Project	7

Luminaires



Luminaire E Data

Supplier	Urbis Schreder
Type	ALINEA Handrail 5121 - 3 LED 350mA WW Profiled Poly Clear, Sm
Lamp(s)	3 LEDs WW
Lamp Flux (klm)	0.37
File Name	ALINEA Handrail 5121 3 LED 350mA WW Profiled Poly Clear Smooth WO7314.ltd
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	230.6, 22.2, 4.1
No. in Project	2



Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	705707.70	732426.84	6.00	6.00	0.00	0.00	0.40			
2	A	705722.07	732439.74	6.00	179.00	0.00	0.00	0.40			
3	A	705708.96	732466.48	6.00	0.00	0.00	0.00	0.40			
4	A	705723.19	732477.88	6.00	177.00	0.00	0.00	0.40			
5	A	705724.10	732514.02	6.00	181.00	0.00	0.00	0.40			
6	A	705710.41	732497.51	6.00	357.00	0.00	0.00	0.40			
7	A	705714.66	732531.25	6.00	269.00	0.00	0.00	0.40			
8	B	705736.10	732466.65	6.00	85.00	0.00	0.00	0.40			
9	B	705753.13	732479.10	6.00	0.00	0.00	0.00	0.40			
10	B	705754.27	732507.08	6.00	0.00	0.00	0.00	0.40			
11	B	705751.98	732450.06	6.00	357.00	0.00	0.00	0.40			
12	B	705753.20	732424.44	6.00	357.00	0.00	0.00	0.40			
13	B	705774.18	732436.47	6.00	95.00	0.00	0.00	0.40			
14	B	705801.98	732437.04	6.00	95.00	0.00	0.00	0.40			
15	B	705830.83	732438.39	6.00	95.00	0.00	0.00	0.40			
16	B	705791.74	732426.52	6.00	177.00	0.00	0.00	0.40			
17	A	705847.76	732430.83	6.00	7.00	0.00	0.00	0.40			
18	A	705847.62	732468.93	6.00	357.00	0.00	0.00	0.40			
19	A	705831.95	732457.65	6.00	269.00	0.00	0.00	0.40			
20	A	705794.12	732459.18	6.00	266.00	0.00	0.00	0.40			
21	A	705762.81	732451.67	6.00	68.00	0.00	0.00	0.40			
22	C	705864.77	732490.14	6.00	268.00	0.00	0.00	0.40			
23	A	705849.16	732503.88	6.00	358.00	0.00	0.00	0.40			
24	C	705898.27	732476.07	6.00	182.00	0.00	0.00	0.40			
25	C	705865.58	732440.08	6.00	95.00	0.00	0.00	0.40			
26	C	705888.74	732441.27	6.00	92.00	0.00	0.00	0.40			
27	C	705898.79	732452.61	6.00	181.00	0.00	0.00	0.40			
28	C	705886.75	732489.30	6.00	270.00	0.00	0.00	0.40			
29	B	705791.74	732444.74	6.00	2.00	0.00	0.00	0.40			
30	A	705711.12	732391.40	6.00	351.00	0.00	0.00	0.40			
31	A	705725.53	732379.40	6.00	178.00	0.00	0.00	0.40			
32	A	705709.78	732340.66	6.00	355.00	0.00	0.00	0.40			
33	A	705709.19	732306.67	6.00	358.00	0.00	0.00	0.40			
34	A	705705.23	732279.50	6.00	273.00	0.00	0.00	0.40			
35	A	705735.71	732280.14	6.00	276.00	0.00	0.00	0.40			
36	A	705671.38	732280.58	6.00	273.00	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	A	705640.41	732270.57	6.00	86.00	0.00	0.00	0.40			
38	A	705595.85	732282.13	6.00	266.00	0.00	0.00	0.40			
39	A	705637.53	732291.67	6.00	357.00	0.00	0.00	0.40			
40	A	705643.82	732324.88	6.00	353.00	0.00	0.00	0.40			
41	A	705642.87	732355.41	6.00	353.00	0.00	0.00	0.40			
42	B	705650.59	732288.29	6.00	175.00	0.00	0.00	0.40			
43	A	705717.00	732290.49	6.00	176.00	0.00	0.00	0.40			
44	A	705697.42	732363.10	6.00	89.00	0.00	0.00	0.40			
45	A	705695.90	732376.52	6.00	268.00	0.00	0.00	0.40			
46	A	705662.30	732364.17	6.00	86.00	0.00	0.00	0.40			
47	A	705665.87	732377.45	6.00	268.00	0.00	0.00	0.40			
48	B	705625.00	732363.40	6.00	87.00	0.00	0.00	0.40			
49	B	705602.31	732364.23	6.00	95.00	0.00	0.00	0.40			
50	B	705636.66	732370.85	6.00	354.00	0.00	0.00	0.40			
51	B	705645.65	732389.27	6.00	3.00	0.00	0.00	0.40			
52	B	705623.31	732381.06	6.00	268.00	0.00	0.00	0.40			
53	B	705609.66	732385.49	6.00	0.00	0.00	0.00	0.40			
54	A	705770.79	732273.13	6.00	103.00	0.00	0.00	0.40			
55	B	705778.51	732294.63	6.00	7.00	0.00	0.00	0.40			
56	B	705794.27	732299.44	6.00	178.00	0.00	0.00	0.40			
57	A	705839.12	732279.26	6.00	267.00	0.00	0.00	0.40			
58	A	705802.29	732280.57	6.00	262.00	0.00	0.00	0.40			
59	A	705877.84	732276.69	6.00	259.00	0.00	0.00	0.40			
60	A	705843.40	732381.42	6.00	4.00	0.00	0.00	0.40			
61	B	705869.57	732362.54	6.00	92.00	0.00	0.00	0.40			
62	A	705860.15	732382.54	6.00	183.00	0.00	0.00	0.40			
63	C	705587.55	732391.54	6.00	175.00	0.00	0.00	0.40			
64	A	705857.44	732341.42	6.00	178.00	0.00	0.00	0.40			
65	A	705856.51	732309.65	6.00	178.00	0.00	0.00	0.40			
66	A	705855.63	732282.56	6.00	178.00	0.00	0.00	0.40			
67	A	705785.55	732388.42	6.00	178.00	0.00	0.00	0.40			
68	A	705804.76	732374.14	6.00	274.00	0.00	0.00	0.40			
69	A	705798.23	732360.32	6.00	92.00	0.00	0.00	0.40			
70	B	705832.33	732360.32	6.00	95.00	0.00	0.00	0.40			
71	B	705820.18	732385.99	6.00	5.00	0.00	0.00	0.40			
72	B	705760.11	732358.12	6.00	85.00	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	B	705732.69	732359.18	6.00	85.00	0.00	0.00	0.40			
74	B	705770.13	732367.91	6.00	1.00	0.00	0.00	0.40			
75	B	705757.53	732375.81	6.00	267.00	0.00	0.00	0.40			
76	A	705778.34	732349.38	6.00	3.00	0.00	0.00	0.40			
77	A	705780.01	732319.01	6.00	3.00	0.00	0.00	0.40			
78	C	705586.54	732368.59	6.00	183.00	0.00	0.00	0.40			
79	A	705583.80	732349.97	6.00	178.00	0.00	0.00	0.40			
80	A	705582.71	732316.62	6.00	179.00	0.00	0.00	0.40			
81	B	705914.36	732473.33	6.00	83.00	0.00	0.00	0.40			
82	A	705582.06	732293.29	6.00	176.00	0.00	0.00	0.40			
83	A	705629.33	732281.12	6.00	268.00	0.00	0.00	0.40			
85	B	705901.87	732364.49	6.00	94.00	0.00	0.00	0.40			
86	A	705985.48	732400.50	6.00	354.00	0.00	0.00	0.40			
87	A	706000.54	732390.10	6.00	176.00	0.00	0.00	0.40			
88	A	705984.29	732362.11	6.00	352.00	0.00	0.00	0.40			
89	A	705999.30	732356.54	6.00	180.00	0.00	0.00	0.40			
90	B	705966.63	732362.96	6.00	92.00	0.00	0.00	0.40			
91	B	705935.84	732364.24	6.00	89.00	0.00	0.00	0.40			
92	A	705968.21	732380.30	6.00	270.00	0.00	0.00	0.40			
93	B	705969.60	732385.10	6.00	273.00	0.00	0.00	0.40			
94	A	705933.68	732381.32	6.00	270.00	0.00	0.00	0.40			
95	B	705881.61	732375.33	6.00	2.00	0.00	0.00	0.40			
96	B	705880.49	732396.46	6.00	2.00	0.00	0.00	0.40			
97	B	705917.01	732391.83	6.00	2.00	0.00	0.00	0.40			
98	B	705951.29	732393.36	6.00	2.00	0.00	0.00	0.40			
99	B	705899.92	732381.39	6.00	270.00	0.00	0.00	0.40			
100	B	705911.20	732371.24	6.00	2.00	0.00	0.00	0.40			
101	A	705916.89	732356.11	6.00	359.00	0.00	0.00	0.40			
102	A	705915.72	732321.85	6.00	359.00	0.00	0.00	0.40			
103	A	705925.89	732289.26	6.00	207.00	0.00	0.00	0.40			
104	A	705914.80	732271.49	6.00	268.00	0.00	0.00	0.40			
105	A	705947.74	732270.28	6.00	268.00	0.00	0.00	0.40			
106	A	705975.21	732268.01	6.00	268.00	0.00	0.00	0.40			
107	A	705999.13	732276.54	6.00	182.00	0.00	0.00	0.40			
108	A	705997.72	732312.68	6.00	176.00	0.00	0.00	0.40			
109	A	705982.35	732302.77	6.00	2.00	0.00	0.00	0.40			



Layout Continued

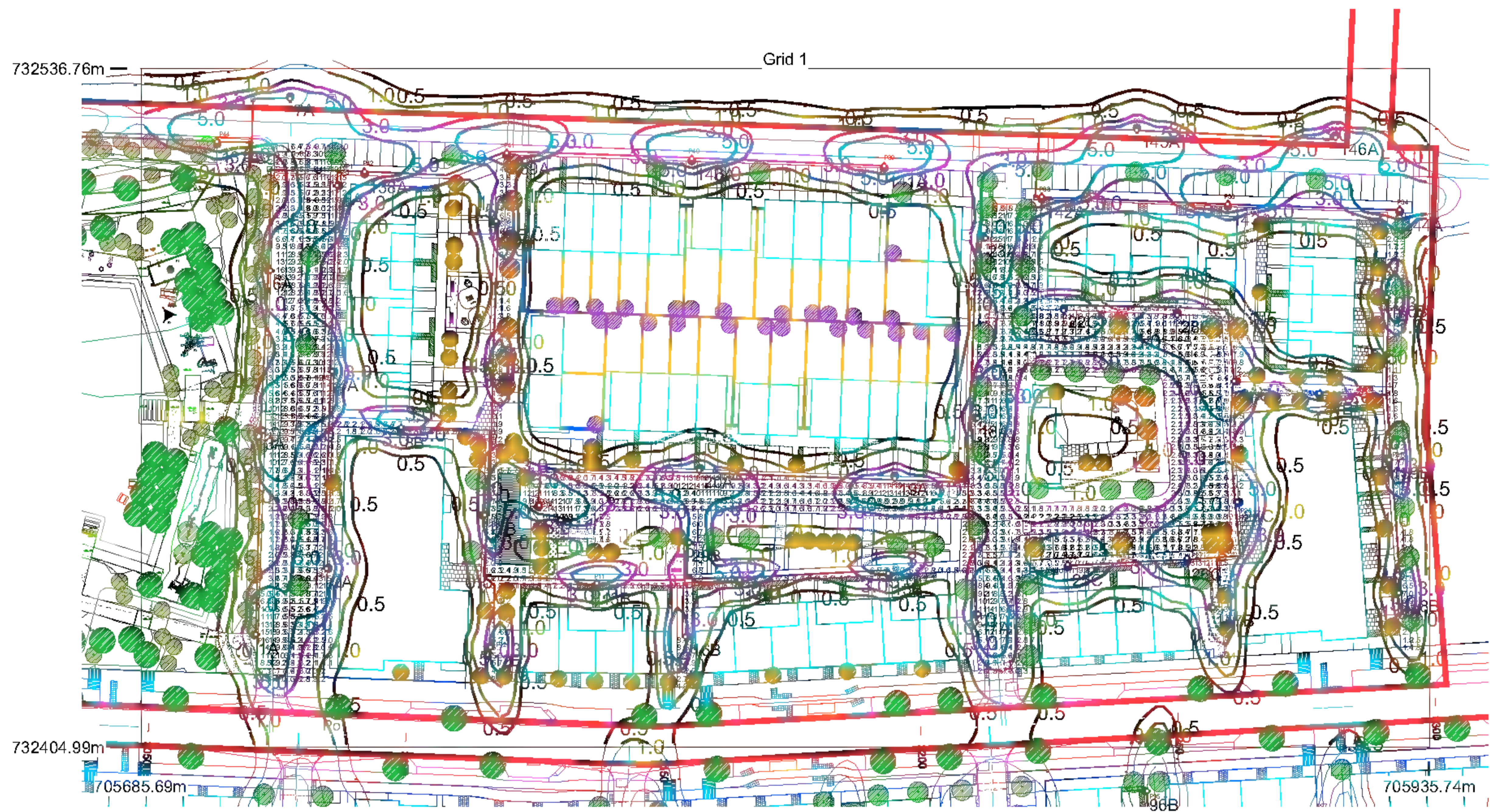
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
110	A	705983.26	732328.51	6.00	357.00	0.00	0.00	0.40			
111	A	706006.22	732335.40	6.00	272.00	0.00	0.00	0.40			
112	A	706006.34	732315.27	6.00	86.00	0.00	0.00	0.40			
113	A	706036.52	732334.26	6.00	266.00	0.00	0.00	0.40			
114	A	706036.19	732314.28	6.00	86.00	0.00	0.00	0.40			
115	A	706064.03	732333.06	6.00	263.00	0.00	0.00	0.40			
116	A	706063.23	732313.15	6.00	86.00	0.00	0.00	0.40			
117	A	706090.01	732312.35	6.00	86.00	0.00	0.00	0.40			
118	A	706089.68	732332.33	6.00	270.00	0.00	0.00	0.40			
119	B	706072.29	732343.99	6.00	190.00	0.00	0.00	0.40			
120	B	706068.43	732370.50	6.00	192.00	0.00	0.00	0.40			
121	B	706045.85	732378.63	6.00	274.00	0.00	0.00	0.40			
122	B	706055.37	732353.98	6.00	276.00	0.00	0.00	0.40			
123	B	706036.46	732361.38	6.00	227.00	0.00	0.00	0.40			
124	B	706027.13	732355.18	6.00	349.00	0.00	0.00	0.40			
125	B	706028.84	732403.64	6.00	354.00	0.00	0.00	0.40			
126	B	706046.60	732401.19	6.00	89.00	0.00	0.00	0.40			
128	B	706053.70	732342.78	6.00	86.00	0.00	0.00	0.40			
129	B	706033.84	732343.45	6.00	86.00	0.00	0.00	0.40			
130	A	705568.23	732527.36	6.00	90.00	0.00	0.00	0.40			
131	A	705983.65	732274.31	6.00	2.00	0.00	0.00	0.40			
132	B	705914.46	732287.58	6.00	353.00	0.00	0.00	0.40			
133	B	706028.04	732378.05	6.00	353.00	0.00	0.00	0.40			
134	A	705602.26	732526.02	6.00	87.00	0.00	0.00	0.40			
135	A	705635.30	732524.84	6.00	91.00	0.00	0.00	0.40			
136	A	705669.95	732523.69	6.00	91.00	0.00	0.00	0.40			
137	A	705700.49	732522.14	6.00	91.00	0.00	0.00	0.40			
138	A	705729.06	732516.27	6.00	91.00	0.00	0.00	0.40			
139	A	705756.68	732519.99	6.00	92.00	0.00	0.00	0.40			
140	A	705792.57	732518.80	6.00	91.00	0.00	0.00	0.40			
141	A	705829.88	732517.42	6.00	91.00	0.00	0.00	0.40			
142	A	705860.47	732511.47	6.00	91.00	0.00	0.00	0.40			
143	A	705896.63	732510.01	6.00	91.00	0.00	0.00	0.40			
144	A	705929.90	732508.95	6.00	90.00	0.00	0.00	0.40			
145	A	705878.93	732525.21	6.00	270.00	0.00	0.00	0.40			
146	A	705917.46	732523.80	6.00	272.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
147	D	706080.72	732234.76	6.00	353.00	0.00	0.00	0.40			
165	D	706120.45	732337.80	6.00	182.00	0.00	0.00	0.40			
166	D	706102.03	732249.62	6.00	130.00	0.00	0.00	0.40			
167	D	706122.41	732275.98	6.00	177.00	0.00	0.00	0.40			
168	D	706122.18	732308.74	6.00	185.00	0.00	0.00	0.40			
169	D	706118.72	732364.75	6.00	182.00	0.00	0.00	0.40			
170	D	706120.23	732390.76	6.00	164.00	0.00	0.00	0.40			
157	B	705893.40	732432.20	6.00	0.00	0.00	0.00	0.40			
158	B	705929.36	732435.03	6.00	0.00	0.00	0.00	0.40			
159	B	705927.52	732460.86	6.00	0.00	0.00	0.00	0.40			
160	B	705927.02	732492.28	6.00	0.00	0.00	0.00	0.40			
156	E	706067.67	732405.97	1.00	181.00	0.00	0.00	0.10			
157	E	706063.38	732405.88	1.00	333.00	0.00	0.00	0.10			
158	B	706069.98	732400.78	6.00	93.00	0.00	0.00	0.40			

Horizontal Illuminance (lux)

Grid 1

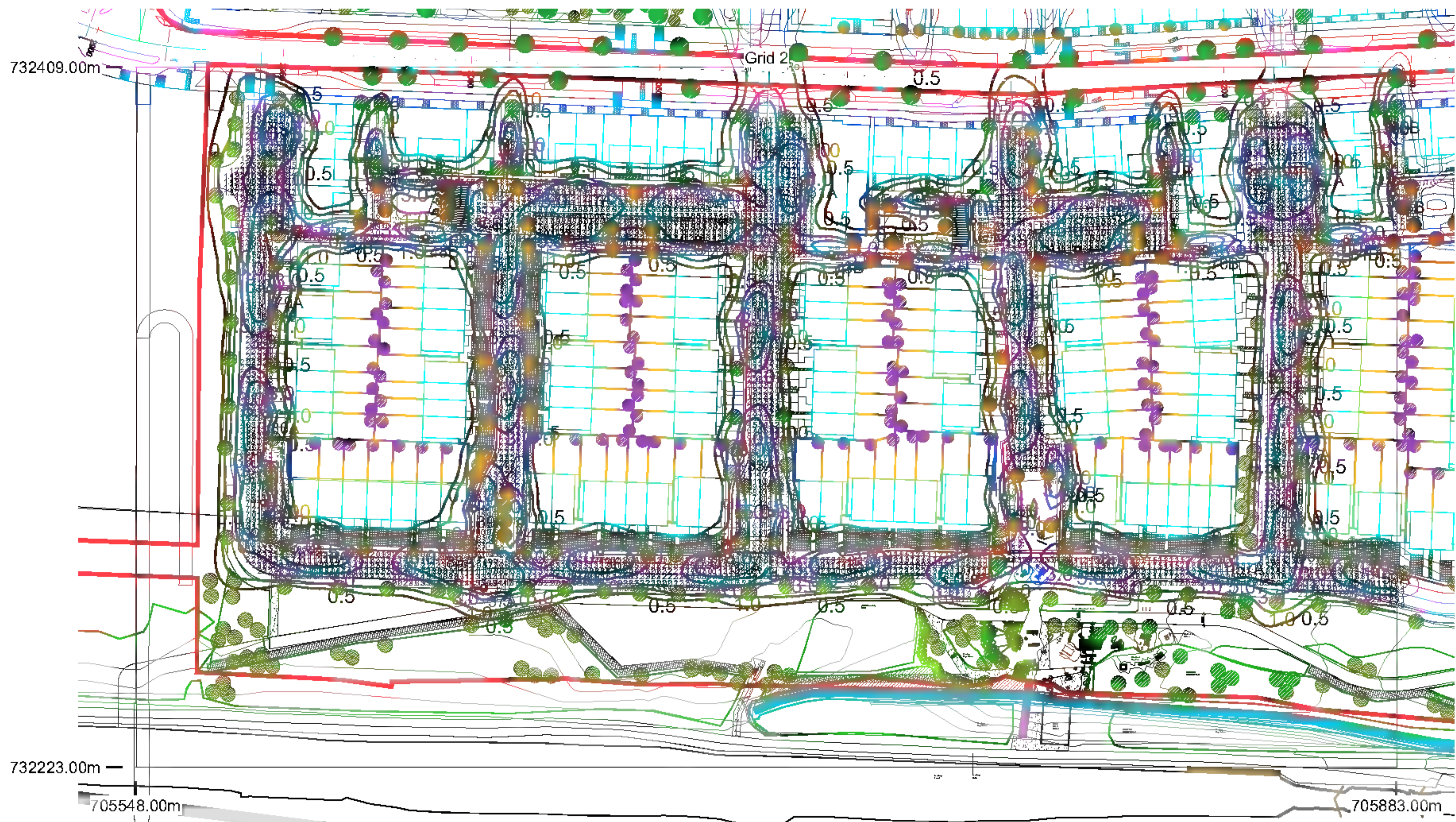


Results

Eav	5.42
Emin	1.06
Emax	19.27
Emin/Emax	0.06
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 2

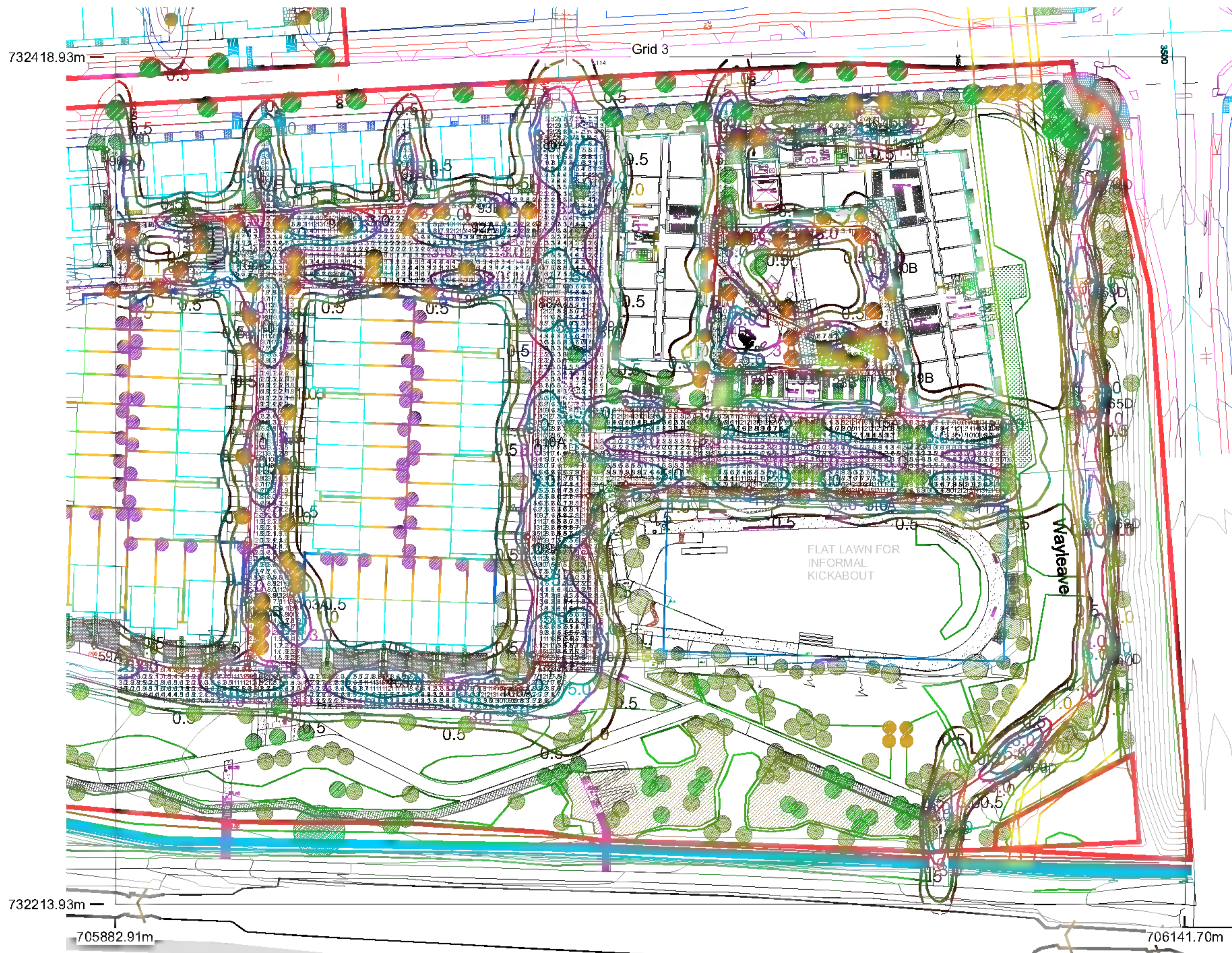


Results

Eav	5.25
Emin	1.04
E _{max}	17.37
Emin/E _{max}	0.06
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 3



Results

Eav	5.31
Emin	1.04
Emax	36.24
Emin/Emax	0.03
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 4

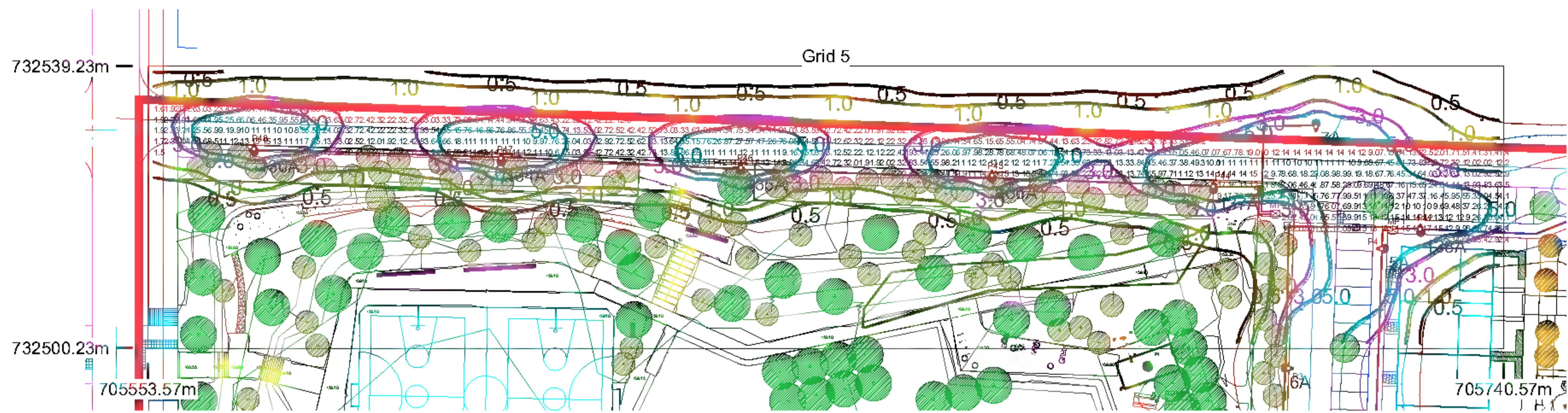


Results

Eav	5.59
Emin	1.19
Emax	11.09
Emin/Emax	0.11
Emin/Eav	0.21

Horizontal Illuminance (lux)

Grid 5

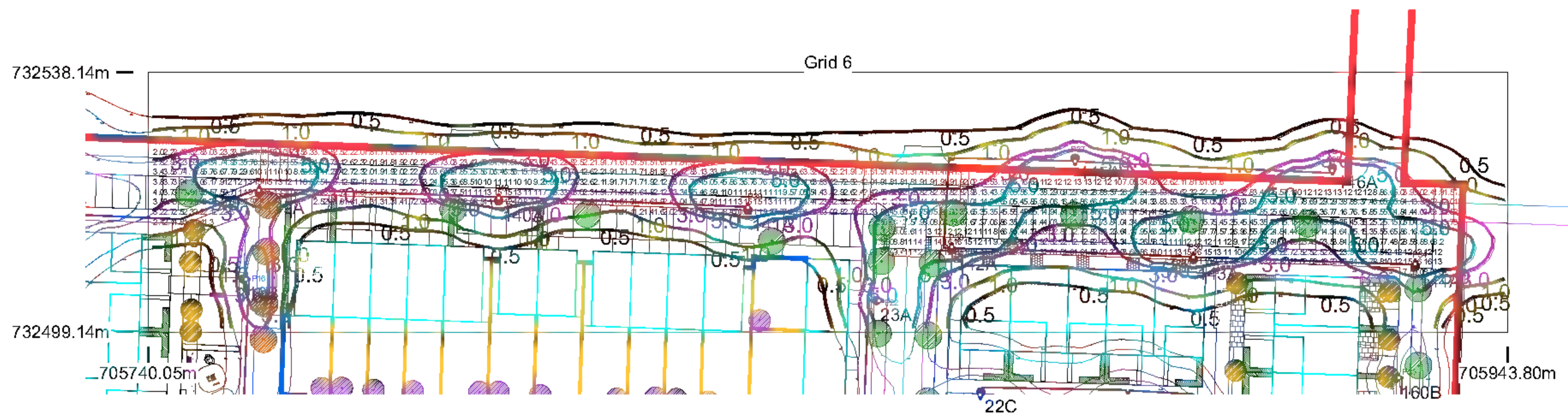


Results

Eav	6.22
Emin	1.25
Emax	19.04
Emin/Emax	0.07
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 6

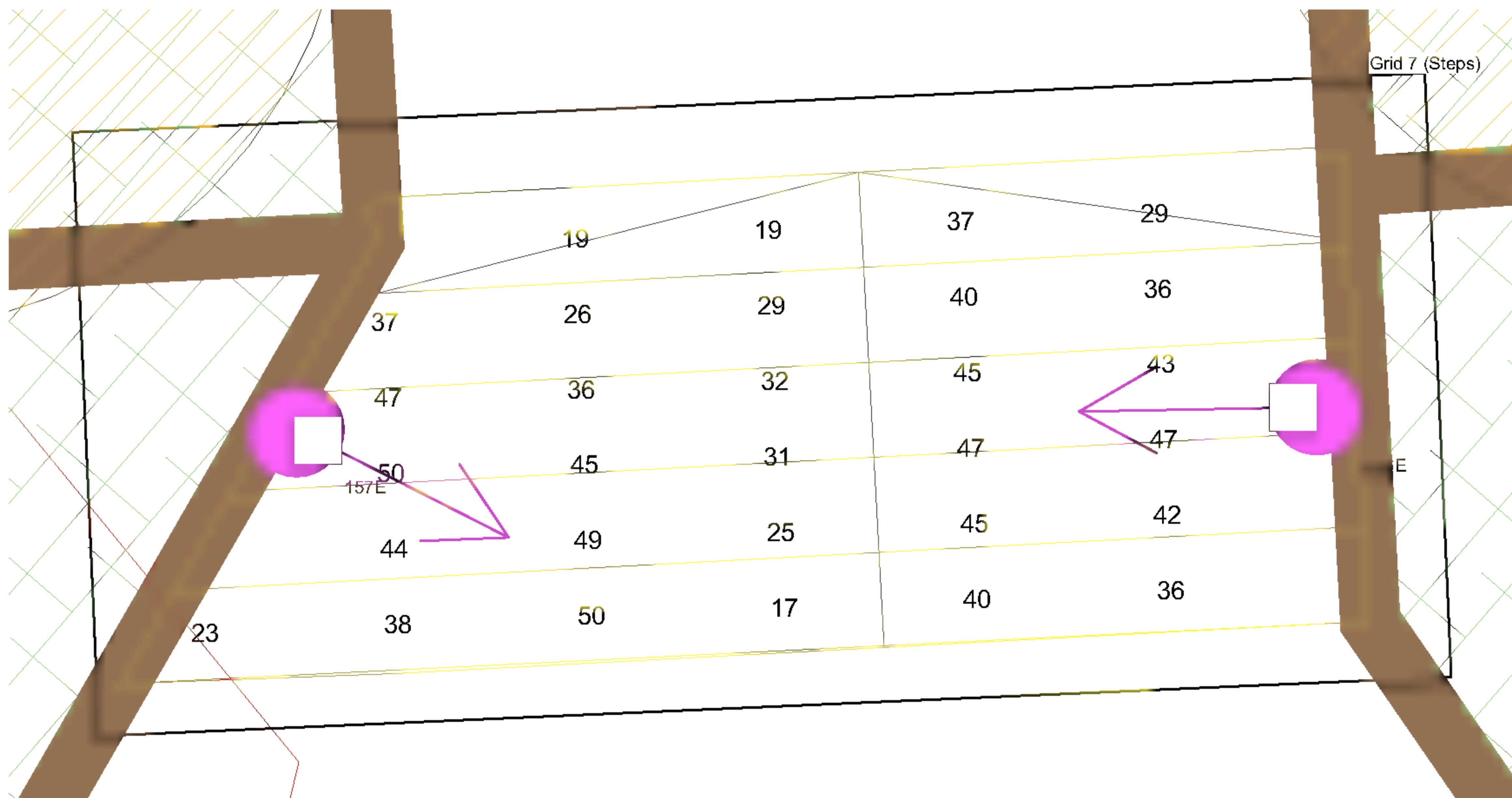


Results

Eav	5.33
Emin	1.10
E _{max}	16.36
E _{min} /E _{max}	0.07
E _{min} /E _{av}	0.21

Horizontal Illuminance (lux)

Grid 7 (Steps)



Results

Eav	36.03
Emin	17.19
E _{max}	49.78
E _{min} /E _{max}	0.35
E _{min} /E _{av}	0.48