

DATE: 16 October 2026
DESIGNER: Alex Naper
PROJECT No: SES 09726 Rev D
PROJECT NAME: Tinahask Arklow - Castlethorn



MF derived from: 0.92×0.90 or 0.97 or 0.99×0.99 (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.

Spine Road Designed in accordance with EN13201-2:2015 Category P3,

Access Junction Designed in accordance with EN13201-2:2015 Category C3,

Rev A: Updated Site Layout.

Rev B: Updated site layout.

Rev C: Updated 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
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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	Grid 1	723946.59	671896.57	73.50	35.94	1.50	1.50
2	Grid 2	723973.24	671922.51	39.00	60.00	1.50	1.50
3	Grid 3	724008.01	671975.44	75.00	132.00	1.50	1.50
4	Grid 4	724140.24	672079.95	94.41	249.00	1.50	1.50
5	Grid 5	724104.40	671974.79	102.00	371.00	1.50	1.50
6	Grid 6	723877.60	671966.05	126.00	157.00	1.50	1.50
7	Grid 7	723972.40	672109.43	103.50	294.53	1.50	1.50
8	Grid 8	724266.50	672125.83	79.50	107.65	1.50	1.50
9	Grid 9	724118.50	672004.83	157.00	370.36	1.50	1.50
10	Grid 10	724018.54	671940.16	91.50	64.50	1.50	1.50

Luminaires

Luminaire A Data



Supplier	C U Phosco
Type	P863-128-R2E-730-W3-550-71W
Lamp(s)	730SS
Lamp Flux (klm)	9.92
File Name	P863-128-R2E-730-W3-550-71W.ies
Maintenance Factor	0.91
Imax70,80,90(cd/klm)	463.7, 84.3, 0.0
No. in Project	3

Luminaire B Data



Supplier	C U Phosco
Type	P863-128-R2E-730-W3-350-46W
Lamp(s)	730SS
Lamp Flux (klm)	6.50
File Name	P863-128-R2E-730-W3-350-46W.ies
Maintenance Factor	0.91
Imax70,80,90(cd/klm)	463.7, 84.3, 0.0
No. in Project	27

Luminaire C Data



Supplier	C U Phosco
Type	E950-28-LP-L33-730-C0600-15W
Lamp(s)	730N
Lamp Flux (klm)	2.53
File Name	E950-28-LP-L33-730-C0600-15W.ies
Maintenance Factor	0.82
Imax70,80,90(cd/klm)	714.9, 133.2, 3.9
No. in Project	6

Luminaire D Data



Supplier	C U Phosco
Type	E950-28-P4A-730-B2-C0300-8W
Lamp(s)	730N
Lamp Flux (klm)	1.01
File Name	E950-28-P4A-730-B2-C0300-8W.ies
Maintenance Factor	0.88
Imax70,80,90(cd/klm)	709.7, 142.6, 0.4
No. in Project	40

Luminaires



Luminaire E Data

Supplier	C U Phosco
Type	E950-28-P4A-730-C600-15W
Lamp(s)	730N
Lamp Flux (klm)	2.25
File Name	E950-28-P4A-730-C0600-15W.ies
Maintenance Factor	0.82
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	44



Luminaire F Data

Supplier	C U Phosco
Type	E950-28-F2A-730-B2-C0600-15W
Lamp(s)	730N
Lamp Flux (klm)	1.87
File Name	E950-28-F2A-730-B2-C0600-15W.ies
Maintenance Factor	0.82
Imax70,80,90(cd/klm)	708.0, 79.8, 0.4
No. in Project	5



Luminaire G Data

Supplier	C U Phosco
Type	E950-28-P4A-730-B2-C0250-7W
Lamp(s)	730N
Lamp Flux (klm)	0.85
File Name	E950-28-P4A-730-B2-C0250-7W.ies
Maintenance Factor	0.00
Imax70,80,90(cd/klm)	709.7, 142.6, 0.4
No. in Project	2

Luminaire H Data

Supplier	C U Phosco
Type	E950-28-P4A-730-FB-C0600-15W
Lamp(s)	730N
Lamp Flux (klm)	1.72
File Name	E950-28-P4A-730-FB-C0600-15W.ies
Maintenance Factor	0.02
Imax70,80,90(cd/klm)	552.0, 164.2, 0.4
No. in Project	5

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	723980.52	671897.10	10.00	60.00	0.00	0.00	0.50			
2	A	723969.08	671920.39	10.00	250.00	0.00	0.00	0.50			
3	A	724007.19	671896.94	10.00	247.00	0.00	0.00	0.50			
4	B	723991.33	671921.83	8.00	321.00	0.00	0.00	0.50			
5	B	724022.91	671942.25	8.00	139.00	0.00	0.00	0.50			
6	B	724043.96	671962.17	8.00	122.00	0.00	0.00	0.50			
7	B	724070.89	671984.66	8.00	125.00	0.00	0.00	0.50			
8	B	724101.26	672003.61	8.00	100.00	0.00	0.00	0.50			
9	B	724085.92	671987.59	8.00	38.00	0.00	0.00	0.50			
10	B	724108.70	671957.60	8.00	27.00	0.00	0.00	0.50			
11	B	724144.93	672007.84	8.00	89.00	0.00	0.00	0.50			
12	B	724183.39	672010.22	8.00	90.00	0.00	0.00	0.50			
13	B	724216.05	672012.29	8.00	91.00	0.00	0.00	0.50			
14	B	724252.09	672014.70	8.00	97.00	0.00	0.00	0.50			
15	B	724294.25	672018.77	8.00	100.00	0.00	0.00	0.50			
16	B	724326.06	672032.61	8.00	113.00	0.00	0.00	0.50			
17	B	724355.21	672045.90	8.00	112.00	0.00	0.00	0.50			
18	B	724384.00	672058.61	8.00	119.00	0.00	0.00	0.50			
19	B	724130.86	671932.88	8.00	60.00	0.00	0.00	0.50			
20	B	724146.51	671904.40	8.00	25.50	0.00	0.00	0.50			
21	B	724169.19	671883.95	8.00	74.00	0.00	0.00	0.50			
22	B	724208.66	671886.24	8.00	93.00	0.00	0.00	0.50			
23	B	724243.98	671888.21	8.00	92.00	0.00	0.00	0.50			
24	B	724286.55	671889.95	8.00	96.00	0.00	0.00	0.50			
25	B	724321.28	671891.90	8.00	92.00	0.00	0.00	0.50			
26	B	724356.42	671893.42	8.00	81.00	0.00	0.00	0.50			
27	B	724391.62	671888.83	8.00	85.00	0.00	0.00	0.50			
28	B	724427.24	671892.09	8.00	106.00	0.00	0.00	0.50			
29	B	724458.63	671900.72	8.00	97.00	0.00	0.00	0.50			
30	B	724495.27	671904.57	8.00	92.00	0.00	0.00	0.50			
31	C	724051.94	671939.99	6.00	226.00	0.00	0.00	0.40			
32	C	724077.36	671916.91	6.00	219.00	0.00	0.00	0.50			
33	C	724103.06	671925.90	6.00	132.00	0.00	0.00	0.40			
34	C	724085.64	671929.36	6.00	309.00	0.00	0.00	0.40			
35	D	724074.00	671932.55	5.00	227.00	0.00	0.00	0.40			
36	F	724010.61	671966.02	6.00	69.00	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	F	723978.61	671977.65	6.00	68.00	0.00	0.00	0.40			
38	F	723959.26	671987.39	6.00	348.00	0.00	0.00	0.40			
39	F	723992.64	671986.63	6.00	251.00	0.00	0.00	0.40			
40	E	724346.52	672072.04	6.00	211.00	0.00	0.00	0.40			
41	E	724333.17	672101.26	6.00	211.00	0.00	0.00	0.40			
42	E	724303.14	672104.08	6.00	292.00	0.00	0.00	0.40			
43	E	724274.53	672090.17	6.00	94.00	0.00	0.00	0.40			
44	D	724311.66	672080.92	5.00	32.00	0.00	0.00	0.40			
45	D	724322.50	672057.08	5.00	25.00	0.00	0.00	0.40			
46	D	724319.26	672094.34	5.00	108.00	0.00	0.00	0.40			
47	D	724328.63	672086.09	5.00	214.00	0.00	0.00	0.40			
48	D	724330.37	672076.06	5.00	274.00	0.00	0.00	0.40			
49	E	724144.73	671947.26	6.00	109.00	0.00	0.00	0.40			
50	D	724334.88	672058.43	5.00	85.00	0.00	0.00	0.40			
51	E	724176.96	671956.71	6.00	275.00	0.00	0.00	0.40			
52	E	724211.15	671959.06	6.00	276.00	0.00	0.00	0.40			
53	E	724237.52	671960.67	6.00	275.00	0.00	0.00	0.40			
54	G	724232.78	671973.71	6.00	183.00	0.00	0.00	0.40			
55	E	724276.56	671963.14	6.00	270.00	0.00	0.00	0.40			
56	E	724297.31	671964.56	6.00	271.00	0.00	0.00	0.40			
57	E	724329.56	671962.37	6.00	113.00	0.00	0.00	0.40			
58	E	724360.66	671976.34	6.00	113.00	0.00	0.00	0.40			
59	E	724392.33	671990.70	6.00	113.00	0.00	0.00	0.40			
60	E	724364.17	671972.97	6.00	6.00	0.00	0.00	0.40			
61	E	724428.06	672006.82	6.00	113.00	0.00	0.00	0.40			
62	E	724419.85	671994.88	6.00	4.00	0.00	0.00	0.40			
63	E	724455.17	672019.37	6.00	113.00	0.00	0.00	0.40			
64	F	724483.75	672027.95	6.00	185.00	0.00	0.00	0.40			
65	E	724476.46	671999.17	6.00	4.00	0.00	0.00	0.40			
66	E	724478.64	671966.81	6.00	4.00	0.00	0.00	0.40			
67	E	724481.13	671927.91	6.00	4.00	0.00	0.00	0.40			
68	E	724420.94	671974.80	6.00	2.00	0.00	0.00	0.40			
69	E	724423.45	671935.31	6.00	13.00	0.00	0.00	0.40			
70	E	724425.03	671907.64	6.00	4.00	0.00	0.00	0.40			
71	E	724365.76	671947.33	6.00	6.00	0.00	0.00	0.40			
72	E	724368.22	671910.84	6.00	3.00	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	724316.79	671918.80	6.00	182.00	0.00	0.00	0.40			
74	E	724314.53	671952.84	6.00	182.00	0.00	0.00	0.40			
75	E	724261.95	671950.92	6.00	4.00	0.00	0.00	0.40			
76	E	724264.53	671912.45	6.00	11.00	0.00	0.00	0.40			
77	D	724288.74	671951.99	5.00	276.00	0.00	0.00	0.40			
78	D	724279.13	671934.85	5.00	24.00	0.00	0.00	0.40			
79	D	724303.59	671932.56	5.00	174.00	0.00	0.00	0.40			
80	D	724290.96	671911.84	5.00	141.00	0.00	0.00	0.40			
81	D	724314.74	671978.61	5.00	25.00	0.00	0.00	0.40			
82	D	724305.61	671998.57	5.00	25.00	0.00	0.00	0.40			
83	D	724328.85	671988.73	5.00	27.00	0.00	0.00	0.40			
84	D	724319.83	672008.82	5.00	25.00	0.00	0.00	0.40			
85	D	724329.55	671975.85	5.00	295.00	0.00	0.00	0.40			
86	D	724319.52	672008.72	5.00	273.00	0.00	0.00	0.40			
87	D	724332.78	672017.18	5.00	210.00	0.00	0.00	0.40			
88	D	724343.35	671993.71	5.00	206.00	0.00	0.00	0.40			
89	G	724230.88	672003.82	6.00	192.00	0.00	0.00	0.40			
90	D	724207.52	671972.62	5.00	7.00	0.00	0.00	0.40			
91	D	724205.67	671999.81	5.00	3.00	0.00	0.00	0.40			
92	D	723973.29	671937.80	5.00	245.00	0.00	0.00	0.40			
93	D	723948.25	671947.13	5.00	244.00	0.00	0.00	0.40			
94	D	724435.21	671936.68	5.00	274.00	0.00	0.00	0.40			
95	D	724463.03	671938.87	5.00	274.00	0.00	0.00	0.40			
96	D	724435.80	671920.53	5.00	16.00	0.00	0.00	0.40			
97	D	724464.51	671919.35	5.00	106.00	0.00	0.00	0.40			
98	D	723945.86	671938.63	5.00	282.00	0.00	0.00	0.40			
99	D	724080.24	671977.18	5.00	220.00	0.00	0.00	0.40			
100	D	724054.74	671947.37	5.00	221.00	0.00	0.00	0.40			
101	D	724088.44	671942.15	5.00	222.00	0.00	0.00	0.40			
102	E	724109.42	672029.98	6.00	2.00	0.00	0.00	0.40			
103	H	724059.50	671996.67	6.00	42.00	0.00	0.00	0.40			
104	H	724040.60	672019.55	6.00	35.00	0.00	0.00	0.40			
105	H	724024.65	672026.24	6.00	72.00	0.00	0.00	0.40			
106	H	723994.58	672037.12	6.00	72.00	0.00	0.00	0.40			
107	H	723981.47	672061.98	6.00	347.00	0.00	0.00	0.40			
108	E	724003.25	672078.58	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
109	E	724041.35	672081.10	6.00	274.00	0.00	0.00	0.40			
110	C	724070.33	672082.73	6.00	279.00	0.00	0.00	0.40			
111	C	724105.75	672085.15	6.00	274.00	0.00	0.00	0.40			
112	E	724128.89	672036.97	6.00	182.00	0.00	0.00	0.40			
113	E	724107.36	672060.67	6.00	2.00	0.00	0.00	0.40			
114	E	724126.44	672073.37	6.00	183.00	0.00	0.00	0.40			
115	E	724104.91	672096.72	6.00	2.00	0.00	0.00	0.40			
116	E	724124.33	672107.08	6.00	184.00	0.00	0.00	0.40			
117	D	724093.24	672099.72	5.00	8.00	0.00	0.00	0.40			
118	E	724139.29	672081.44	6.00	93.00	0.00	0.00	0.40			
119	E	724172.64	672083.62	6.00	93.00	0.00	0.00	0.40			
120	E	724201.86	672085.53	6.00	93.00	0.00	0.00	0.40			
121	E	724244.92	672088.47	6.00	93.00	0.00	0.00	0.40			
122	E	724225.58	672084.30	6.00	186.00	0.00	0.00	0.40			
123	E	724227.63	672052.44	6.00	180.00	0.00	0.00	0.40			
124	E	724229.29	672029.49	6.00	182.00	0.00	0.00	0.40			
125	D	724202.87	672042.53	5.00	8.00	0.00	0.00	0.40			
126	D	724200.88	672071.97	5.00	359.00	0.00	0.00	0.40			
127	D	724068.85	672022.20	5.00	197.00	0.00	0.00	0.40			
128	D	724067.24	672045.77	5.00	192.00	0.00	0.00	0.40			
129	D	724065.68	672069.45	5.00	185.00	0.00	0.00	0.40			
130	D	724084.55	672070.78	5.00	97.00	0.00	0.00	0.40			
131	D	724093.92	671947.75	5.00	222.00	0.00	0.00	0.40			
132	D	724077.80	671938.97	5.00	126.00	0.00	0.00	0.40			

Horizontal Illuminance (lux)

Grid 1

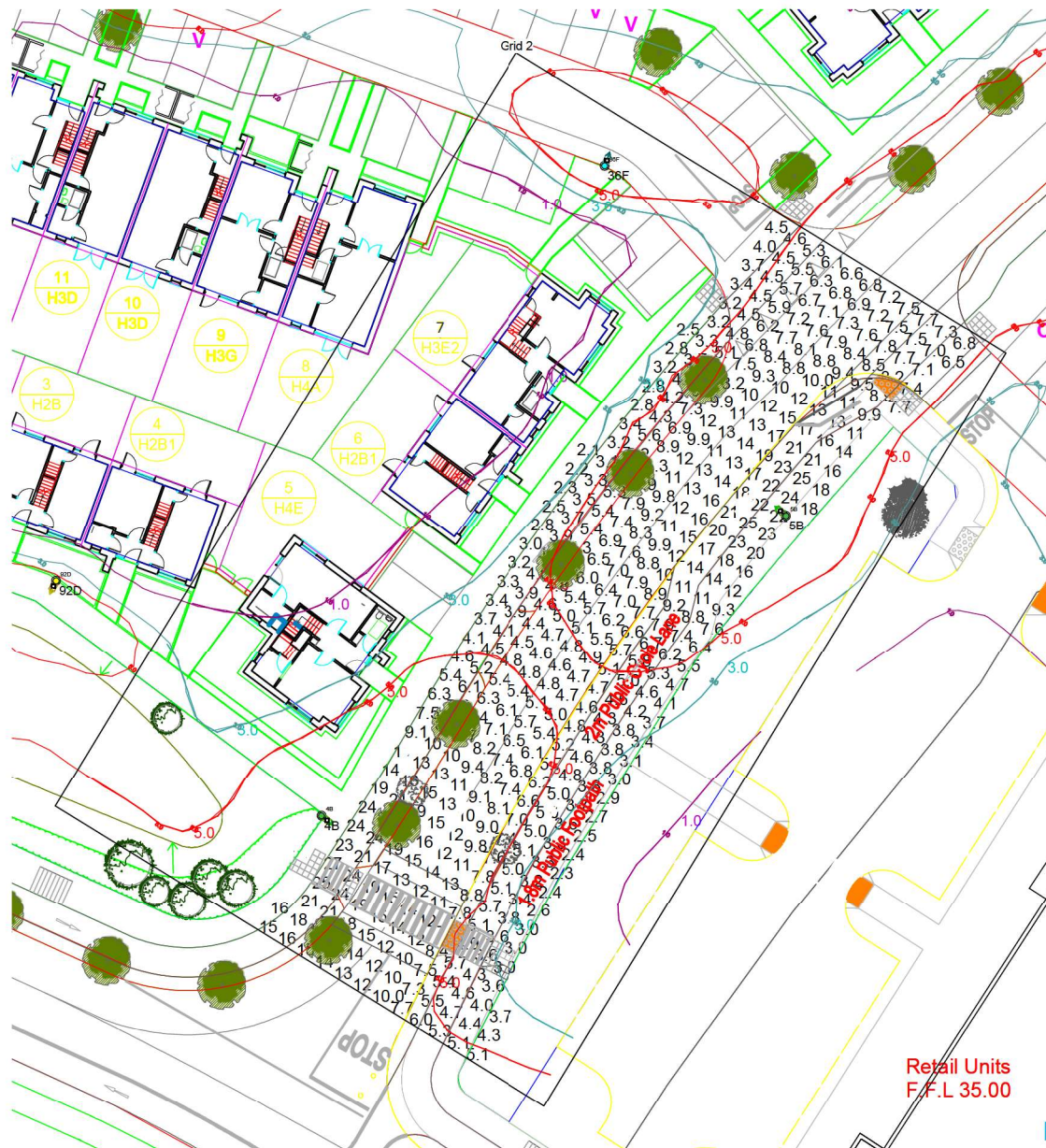


Results

Eav	17.19
Emin	7.09
Emax	25.90
Emin/Emax	0.27
Emin/Eav	0.41

Horizontal Illuminance (lux)

Grid 2



Results

Eav	8.92
Emin	2.11
Emax	26.74
Emin/Emax	0.08
Emin/Eav	0.24

Horizontal Illuminance (lux)

Grid 3



Results

Eav	8.12
Emin	1.67
E _{max}	27.33
E _{min} /E _{max}	0.06
E _{min} /E _{av}	0.21

Horizontal Illuminance (lux)

Grid 4



Results

Eav	8.15
Emin	1.59
Emax	25.88
Emin/Emax	0.06
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 5



Results

Eav	8.19
Emin	1.60
Emax	26.76
Emin/Emax	0.06
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 6

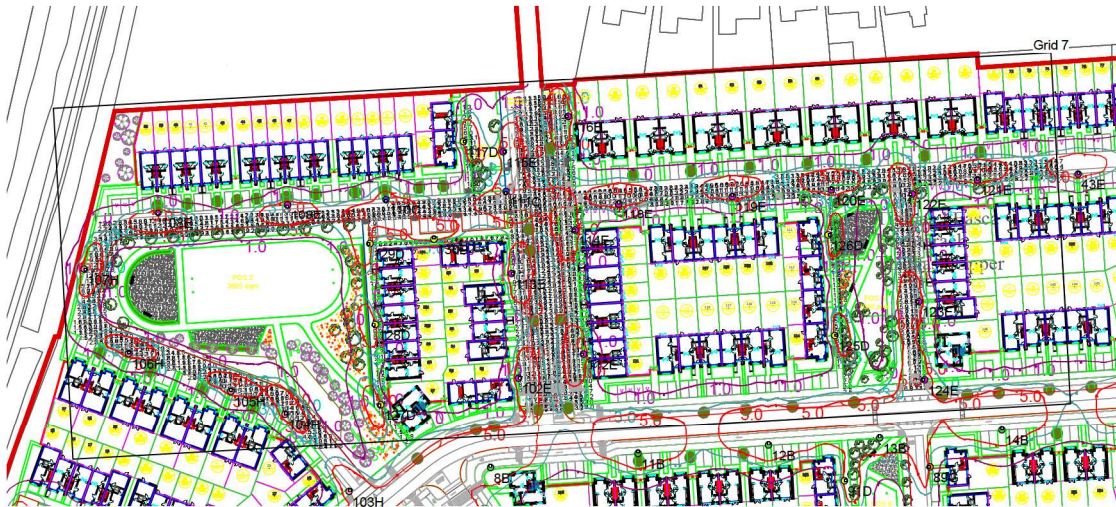


Results

Eav	5.33
Emin	1.09
Emax	17.07
Emin/Emax	0.06
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 7



Horizontal Illuminance (lux)

Grid 8

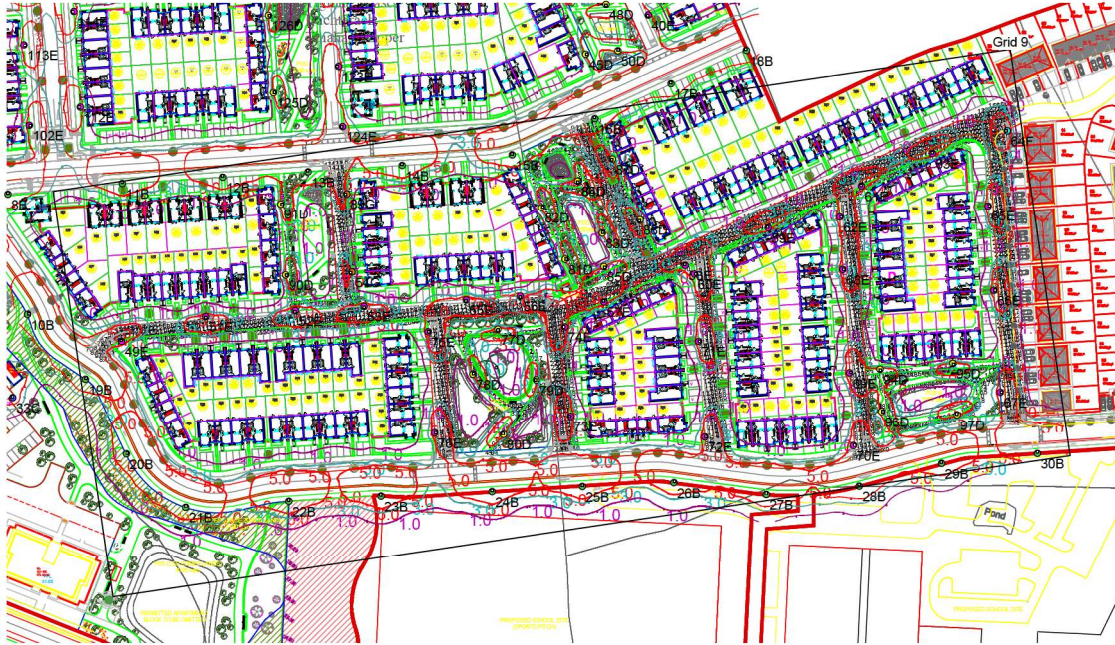


Results

Eav	6.16
Emin	1.39
E _{max}	16.15
E _{min} /E _{max}	0.09
E _{min} /E _{av}	0.23

Horizontal Illuminance (lux)

Grid 9

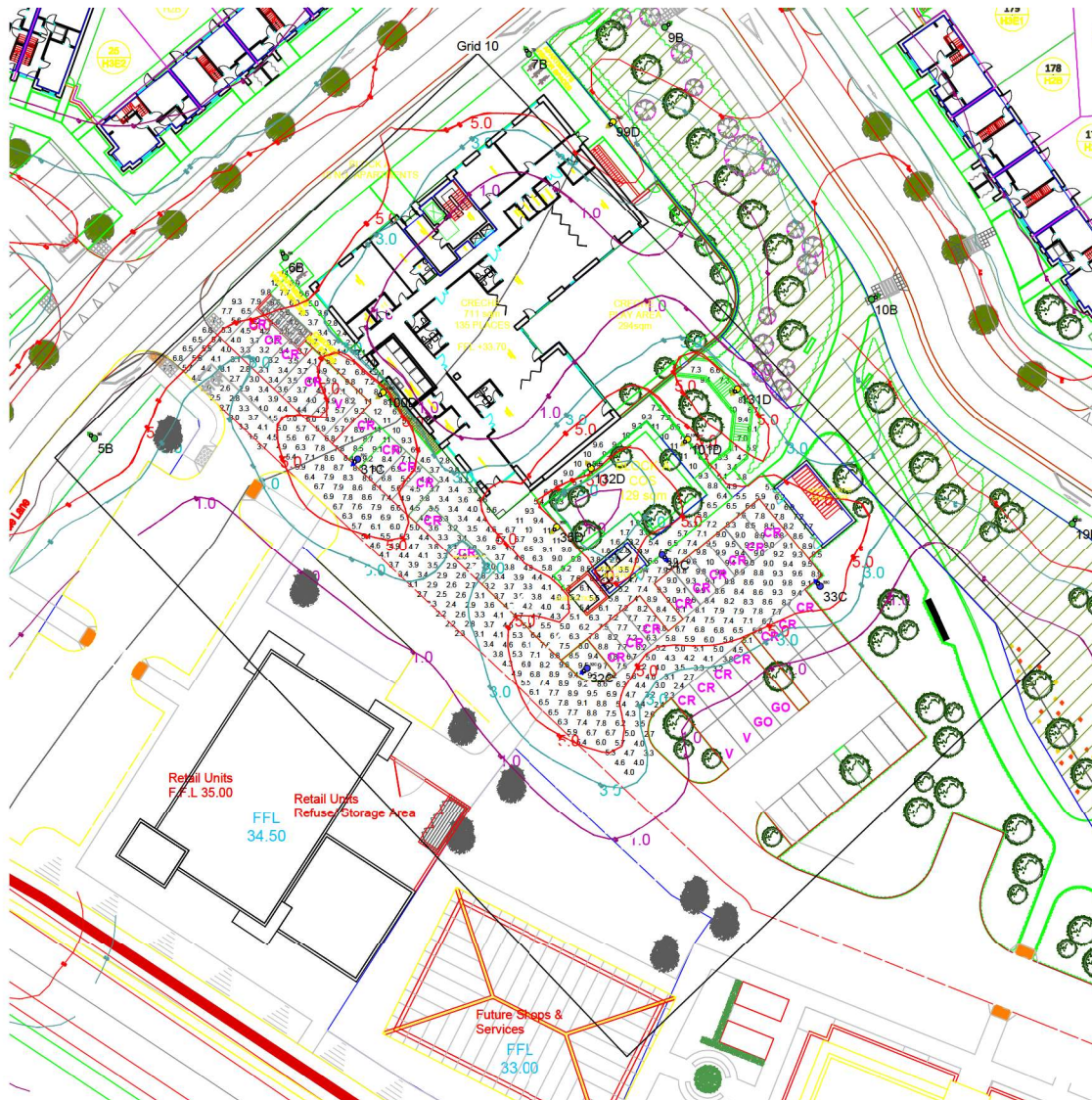


Results

Eav	5.49
Emin	1.07
Emax	23.83
Emin/Emax	0.04
Emin/Eav	0.19

Horizontal Illuminance (lux)

Grid 10



Results

Eav	6.07
Emin	1.57
Emax	14.25
Emin/Emax	0.11
Emin/Eav	0.26