

**DATE:** 23 February 2022

**DESIGNER:** Patrick Redmond

**PROJECT No:** 21092

**PROJECT NAME:** Proposed Res Dev at Edmonstown ~ South Site REV D



Lighting on junction designed to comply with I.S. EN 13201-2:2015 C3, new road & Whitechurch Road with P2, spine road with P3, residential areas with P4, all prior to dimming by 25%. Energy consumption assessed in accordance with I.S. EN 13201-5:2015.

LMF 0.92 x LDF 0.9 x LSF 1 = MF 0.83 at 100,000 hours at 25 degree ambient. Photometry measured at minimum 15 degree ambient.

Luminaire A = 52W. Luminaire B = 47W. Luminaire C = 42W.  
Luminaire D = 20W. Luminaire E = 24W. Luminaire F = 11W.  
Luminaire G = 5W. Luminaire H = 16W. Luminaire I = 13W.  
Luminaire J = 10W. Luminaire K = 23W. Luminaire L = 4W.  
Luminaire M = 53W. Dimmed load, averaged for CLO.

## **Light Level ~ Dimmed By 25%**

**PREPARED BY:** Patrick Redmond MILP, MSLI, IEng, Tech IEI  
Redmond Analytical Management Services Ltd.  
M~ 086 2356356  
O~ 053 9231112  
patrick@redmondams.ie  
8 Peare Campus, Moyne Park, Old Dublin Road,  
Enniscorthy, Co. Wexford. Y21 TD68  
www.redmondams.ie  
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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	Junction 1	249.43	568.90	128.90	83.61	1.50	1.49
2	New Road 1	161.76	577.92	93.46	19.52	1.48	1.39
3	New Road 2	-7.35	582.26	170.57	13.16	1.50	1.46
4	New Road 3	-56.23	586.55	49.69	13.44	1.46	1.49
5	New Road 4	-151.72	601.75	98.47	29.50	1.49	1.47
6	College Road Assessment	555.76	629.60	72.34	17.71	1.48	1.48
7	P1 Spine Road 1	94.85	592.42	20.99	56.56	1.50	1.49
8	P1 Spine Road 2	96.23	645.82	15.70	46.11	1.43	1.49
9	P1 Spine Road 3	81.95	716.93	61.24	17.38	1.49	1.45
10	P1 Grid 1	82.07	627.43	20.11	25.80	1.44	1.43
11	P1 Grid 2	27.37	675.03	72.07	21.96	1.47	1.46
12	P1 Grid 3	111.06	592.32	50.88	12.06	1.50	1.34
13	P1 Grid 4	117.51	646.35	18.38	28.24	1.41	1.49
14	P1 Grid 5	137.49	592.68	161.57	86.15	1.50	1.57
15	P2 Spine Road 1	42.65	749.05	55.70	17.38	1.47	1.45
16	P2 Grid 1	1.93	706.35	20.69	66.23	1.48	1.47
17	P2 Grid 2	-52.47	595.17	147.26	40.89	1.49	1.46
18	P2 Grid 3	-50.90	635.99	135.02	72.19	1.48	1.47
19	P2 Spine Road 2	92.98	594.80	7.28	32.42	1.46	1.47
20	P2 Grid 4	218.26	596.01	31.31	21.45	1.49	1.43

### Luminaires



#### Luminaire A Data

Supplier	Philips
Type	BGP293 DM10
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	13.00
File Name	LumiStreet Gen2 Medium_BGP293_DM10_13000_40LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	534.0, 55.4, 0.0
No. in Project	2



#### Luminaire B Data

Supplier	Philips
Type	BGP292 DW52
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	11.50
File Name	LumiStreet Gen2 Mini_BGP292_DW52_11500_40LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	639.6, 45.2, 0.0
No. in Project	7



#### Luminaire C Data

Supplier	Philips
Type	BGP292 DM10
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	10.00
File Name	LumiStreet Gen2 Mini_BGP292_DM10_10000_40LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	534.0, 55.4, 0.0
No. in Project	9



#### Luminaire D Data

Supplier	Philips
Type	BGP291 DW52
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	4.60
File Name	LumiStreet Gen2 Micro_BGP291_DW52_4600_20LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	639.6, 45.2, 0.0
No. in Project	7

## Luminaires



### Luminaire E Data

Supplier	Philips
Type	BGP291 DM10
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	5.40
File Name	LumiStreet Gen2 Micro_BGP291_DM10_540_0_20LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	534.0, 55.4, 0.0
No. in Project	2



### Luminaire F Data

Supplier	Philips
Type	BGP291 DW52
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	2.40
File Name	LumiStreet Gen2 Micro_BGP291_DW52_240_0_10LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	639.6, 45.2, 0.0
No. in Project	29



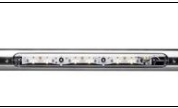
### Luminaire G Data

Supplier	Philips
Type	BGP291 DRXN1
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	1.00
File Name	LumiStreet Gen2 Micro_BGP291_DRXN1_1000_6LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	1155.3, 26.3, 0.0
No. in Project	25



### Luminaire H Data

Supplier	Philips
Type	BGP291 DX50
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	3.60
File Name	LumiStreet Gen2 Micro_BGP291_DX50_3600_20LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	582.8, 63.2, 0.0
No. in Project	3



### Luminaire L Data

Supplier	Urbis Schreder
Type	ALINEA Handrail 5117 - 3 LED 350mA NW Profiled Poly Clear, Sm
Lamp(s)	3 LEDs NW
Lamp Flux (klm)	0.27
File Name	ALINEA Handrail 5117 3 LED 350mA NW Profiled Poly Clear Smooth Shield WO7313.ltd
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	984.7, 72.4, 4.8
No. in Project	3



### Luminaire M Data

Supplier	Philips
Type	BGP292 DM10
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	12.00
File Name	LumiStreet Gen2 Mini_BGP292_DM10_12000_40LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	534.0, 55.4, 0.0
No. in Project	2

### Luminaire Z Data

Supplier	OrangeTek
Type	ARIALED ML2 060 - 4000K
Lamp(s)	060 LEDs 4000K - MEDIUM LENS use Cree XPG2 LED
Lamp Flux (klm)	7.75
File Name	ARIALED ML2 060 350mA XPG2 4000K - Copy.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	597.9, 146.6, 6.6
No. in Project	3

**Layout**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
Existing 1	Z	550.54	641.31	8.00	292.00	0.00	0.00	0.50	75%			
Existing 2	Z	583.30	656.38	8.00	292.00	0.00	0.00	0.50	75%			
Existing 3	Z	615.35	672.32	8.00	292.00	0.00	0.00	0.50	75%			
PL 4	A	378.35	593.22	8.00	268.00	0.00	0.00	0.40	75%			
PL 5	A	342.32	594.34	8.00	264.00	0.00	0.00	0.40	75%			
PL 6	B	310.05	577.90	8.00	137.00	0.00	0.00	0.40	75%			
PL 7	M	308.90	615.37	8.00	180.00	0.00	0.00	1.40	75%			
PL 8	M	306.43	651.48	8.00	185.00	0.00	0.00	0.40	75%			
PL 9	B	283.91	585.27	8.00	97.00	0.00	0.00	0.40	75%			
PL 10	B	257.69	582.91	8.00	100.00	0.00	0.00	0.40	75%			
PL 11	C	313.16	599.17	8.00	233.00	0.00	0.00	0.40	75%			
PL 12	B	226.72	579.93	8.00	97.00	0.00	0.00	0.40	75%			
PL 13	B	186.71	578.52	8.00	91.00	0.00	0.00	0.40	75%			
PL 14	C	145.83	579.64	8.00	90.00	0.00	0.00	0.40	75%			
PL 15	C	105.85	580.69	8.00	91.00	0.00	0.00	0.40	75%			
PL 16	C	70.49	581.62	8.00	92.00	0.00	0.00	0.40	75%			
PL 17	C	34.98	582.42	8.00	91.00	0.00	0.00	0.40	75%			
PL 18	C	-5.01	583.27	8.00	88.00	0.00	0.00	0.40	75%			
PL 19	B	-67.25	589.65	8.00	81.00	0.00	0.00	0.40	75%			
PL 20	C	-106.80	595.95	8.00	82.00	0.00	0.00	0.40	75%			
PL 21	C	-143.44	601.69	8.00	79.00	0.00	0.00	0.40	75%			
PL 22	B	-115.11	624.62	8.00	260.00	0.00	0.00	0.40	75%			
PL 23	D	113.14	605.05	6.00	178.00	0.00	0.00	0.40	75%			
PL 24	D	114.09	632.16	6.00	178.00	0.00	0.00	0.40	75%			
PL 25	D	99.33	648.48	6.00	317.00	0.00	0.00	0.40	75%			
PL 26	D	131.52	664.03	6.00	138.00	0.00	0.00	0.40	75%			
PL 27	E	109.47	677.90	6.00	27.00	0.00	0.00	0.40	75%			
PL 28	D	90.49	708.30	6.00	27.00	0.00	0.00	0.40	75%			
PL 29	F	85.77	644.14	6.00	220.00	5.00	0.00	0.40	75%			
PL 30	F	73.39	661.61	6.00	227.00	5.00	0.00	0.40	75%			
PL 31	F	58.47	667.50	6.00	226.00	5.00	0.00	0.40	75%			
PL 32	F	46.23	684.87	6.00	224.00	5.00	0.00	0.40	75%			
PL 33	F	128.88	649.05	6.00	89.00	5.00	0.00	0.40	75%			
PL 34	F	149.13	644.96	6.00	87.00	5.00	0.00	0.40	75%			
PL 35	F	172.82	653.76	6.00	178.00	5.00	0.00	0.40	75%			
PL 36	F	160.25	666.73	6.00	268.00	5.00	0.00	0.40	75%			

**Layout Continued**

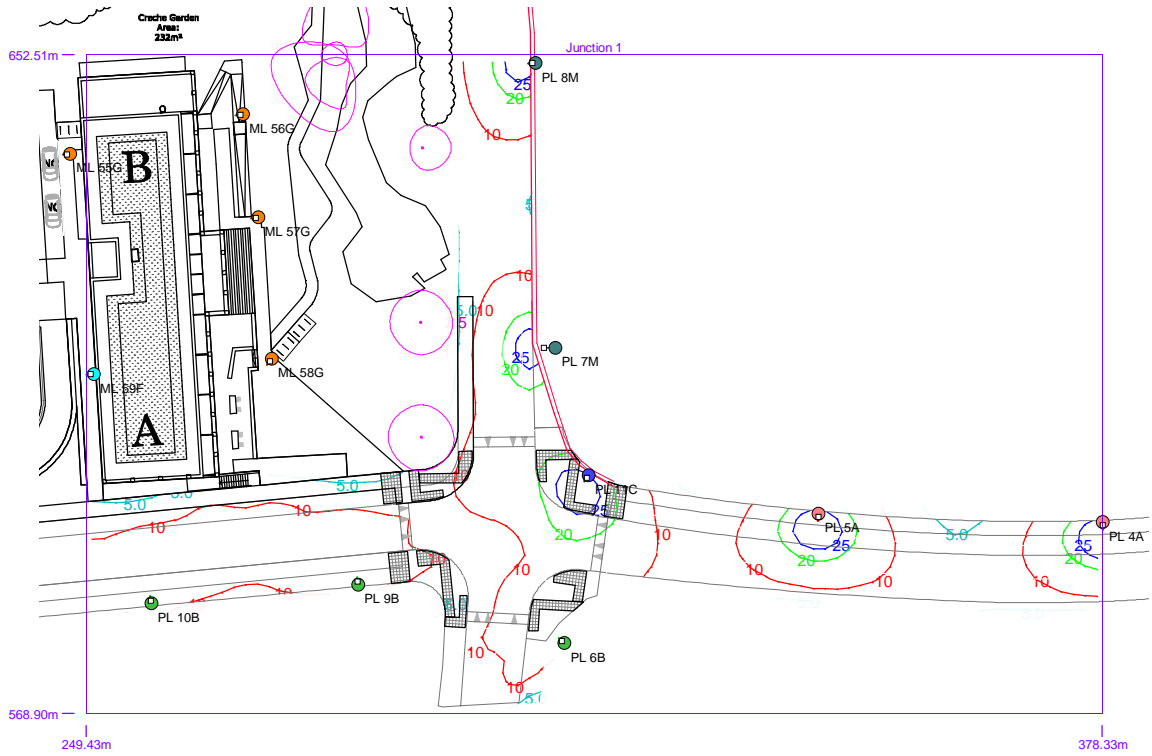
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
ML 37	F	213.23	602.99	6.00	144.00	5.00	0.00	0.40	75%			
ML 38	F	224.43	634.20	6.00	190.00	5.00	0.00	0.40	75%			
ML 39	F	231.68	648.12	6.00	275.00	5.00	0.00	0.40	75%			
ML 40	F	233.42	612.14	6.00	96.00	5.00	0.00	0.40	75%			
ML 41	F	239.06	632.04	6.00	7.00	5.00	0.00	0.40	75%			
PL 42	G	163.99	604.45	6.00	177.00	0.00	0.00	0.40	75%			
PL 43	G	179.55	669.74	6.00	271.00	0.00	0.00	0.40	75%			
PL 44	G	193.91	657.45	6.00	359.00	0.00	0.00	0.40	75%			
PL 45	G	184.59	644.69	6.00	269.00	0.00	0.00	0.40	75%			
PL 46	F	198.76	653.45	6.00	278.00	0.00	0.00	0.40	75%			
PL 47	G	200.45	639.92	6.00	89.00	0.00	0.00	0.40	75%			
PL 48	G	164.99	624.40	6.00	179.00	0.00	0.00	0.40	75%			
PL 49	F	175.49	612.45	6.00	304.00	0.00	0.00	0.40	75%			
PL 50	G	182.21	626.82	6.00	224.00	0.00	0.00	0.40	75%			
PL 51	G	184.62	611.20	6.00	288.00	0.00	0.00	0.40	75%			
PL 53	L	207.71	615.31	1.00	319.00	0.00	0.00	0.00	75%			
ML 55	G	247.42	639.90	6.00	182.00	0.00	0.00	0.40	75%			
ML 56	G	269.36	644.94	6.00	186.00	0.00	0.00	0.40	75%			
ML 57	G	271.30	631.89	6.00	188.00	0.00	0.00	0.40	75%			
ML 58	G	272.95	613.98	6.00	233.00	0.00	0.00	0.40	75%			
ML 59	F	250.39	612.02	6.00	185.00	5.00	0.00	0.40	75%			
ML 60	G	188.17	660.30	6.00	87.00	0.00	0.00	0.40	75%			
PL 61	G	129.58	595.77	6.00	269.00	0.00	0.00	0.40	75%			
PL 62	G	151.67	595.03	6.00	269.00	0.00	0.00	0.40	75%			
PL 63	E	68.57	730.82	6.00	48.00	0.00	0.00	0.40	75%			
PL 64	F	52.16	745.58	6.00	52.00	0.00	0.00	0.40	75%			
PL 65	D	37.88	741.69	6.00	319.00	0.00	0.00	0.40	75%			
PL 66	F	39.61	723.51	6.00	142.00	5.00	0.00	0.40	75%			
PL 67	F	9.07	706.32	6.00	319.00	5.00	0.00	0.40	75%			
PL 68	H	-22.24	606.59	6.00	180.00	5.00	0.00	0.40	75%			
PL 69	H	-18.96	626.67	6.00	167.00	5.00	0.00	0.40	75%			
PL 70	H	-14.74	646.87	6.00	171.00	5.00	0.00	0.40	75%			
PL 71	G	-11.94	600.26	6.00	267.00	0.00	0.00	0.40	75%			
PL 72	G	19.62	599.32	6.00	267.00	0.00	0.00	0.40	75%			
PL 73	G	54.82	598.47	6.00	267.00	0.00	0.00	0.40	75%			
PL 74	G	83.00	597.88	6.00	267.00	0.00	0.00	0.40	75%			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
PL 75	F	26.05	607.83	6.00	357.00	5.00	0.00	0.40	75%			
PL 76	F	45.45	607.33	6.00	175.00	5.00	0.00	0.40	75%			
PL 77	F	37.85	620.04	6.00	272.00	5.00	0.00	0.40	75%			
PL 78	F	-5.30	657.97	6.00	269.00	5.00	0.00	0.40	75%			
PL 79	F	27.65	656.62	6.00	269.00	5.00	0.00	0.40	75%			
PL 80	F	53.45	645.54	6.00	92.00	5.00	0.00	0.40	75%			
PL 81	F	-5.97	689.32	6.00	316.00	5.00	0.00	0.40	75%			
PL 82	F	-16.96	661.42	6.00	146.00	5.00	0.00	0.40	75%			
PL 83	F	31.45	697.92	6.00	220.00	5.00	0.00	0.40	75%			
PL 84	G	21.72	683.67	6.00	49.00	0.00	0.00	0.40	75%			
PL 85	G	5.68	672.22	6.00	184.00	0.00	0.00	0.40	75%			
PL 86	G	16.43	659.58	6.00	269.00	0.00	0.00	0.40	75%			
PL 87	G	41.03	660.18	6.00	322.00	0.00	0.00	0.40	75%			
PL 88	F	81.72	631.38	6.00	49.00	5.00	0.00	0.40	75%			
PL 89	D	93.76	609.09	6.00	6.00	0.00	0.00	0.40	75%			
PL 90	C	-28.08	584.71	8.00	89.00	0.00	0.00	0.40	75%			
ML 91	G	188.19	659.66	6.00	267.00	0.00	0.00	0.40	75%			
PL 92	G	36.09	671.02	6.00	53.00	0.00	0.00	0.40	75%			
PL 93	L	209.70	618.00	1.00	325.00	0.00	0.00	0.00	75%			
PL 94	L	211.79	620.86	1.00	319.00	0.00	0.00	0.00	75%			

# Horizontal Illuminance (lux)

Junction 1

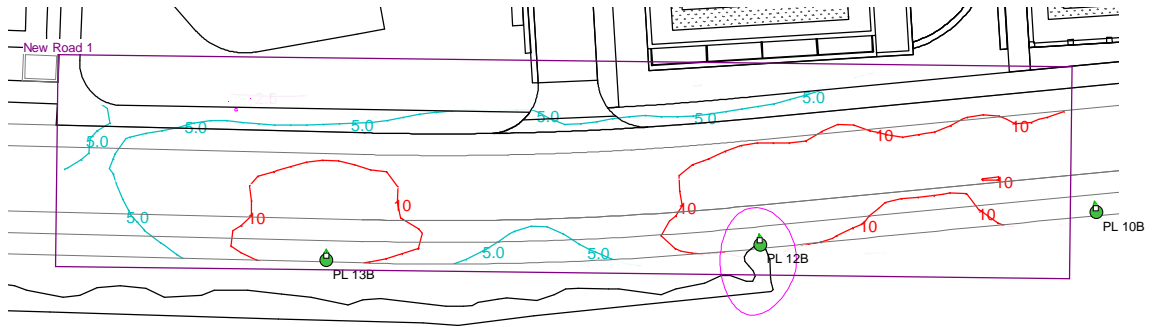


## Results

Eav	11.92
Emin	4.75
E <sub>max</sub>	29.76
E <sub>min</sub> /E <sub>max</sub>	0.16
E <sub>min</sub> /E <sub>av</sub>	0.40

## Horizontal Illuminance (lux)

New Road 1



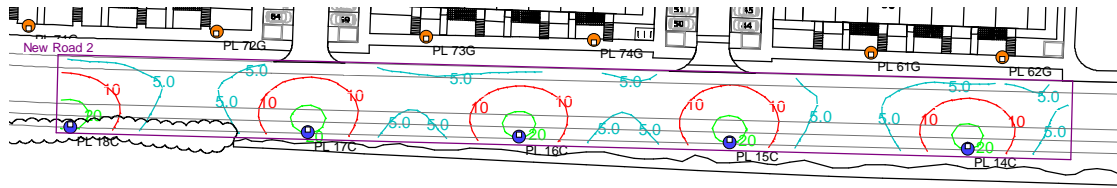
### Results

Eav	8.35
Emin	3.26
Emax	14.68
Emin/Emax	0.22
Emin/Eav	0.39



## Horizontal Illuminance (lux)

New Road 2

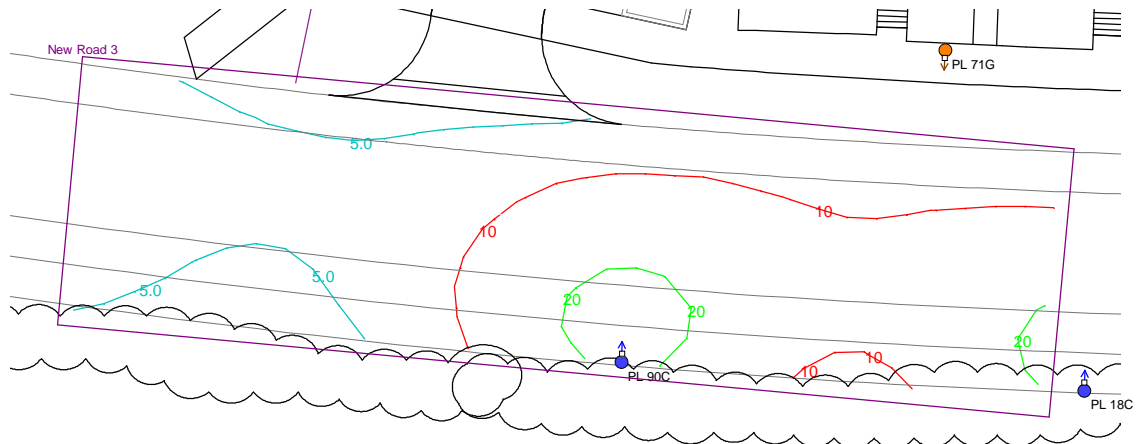


### Results

Eav	8.67
Emin	3.00
E <sub>max</sub>	23.94
E <sub>min</sub> /E <sub>max</sub>	0.13
E <sub>min</sub> /E <sub>av</sub>	0.35

## Horizontal Illuminance (lux)

New Road 3

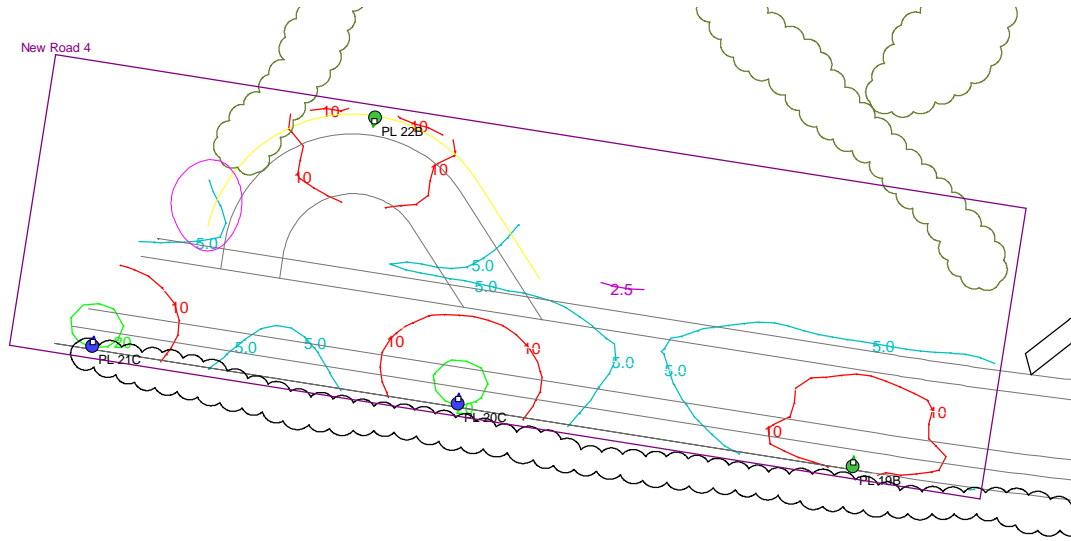


### Results

Eav	10.04
Emin	3.77
Emax	23.81
Emin/Emax	0.16
Emin/Eav	0.38

# Horizontal Illuminance (lux)

New Road 4

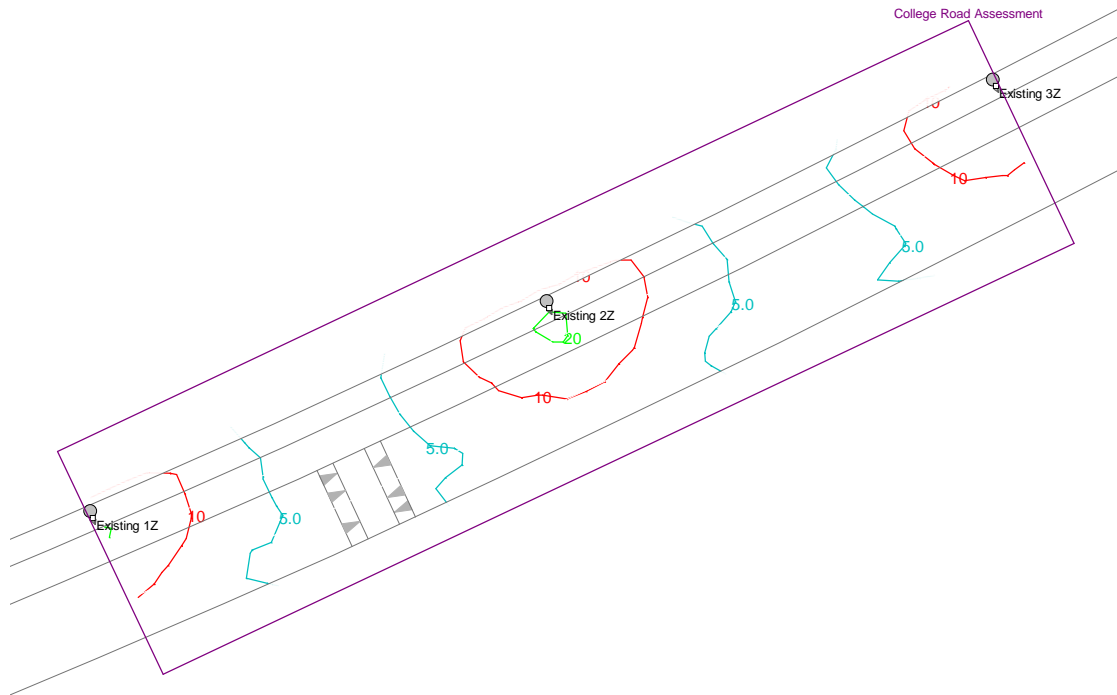


## Results

Eav	8.48
Emin	3.33
E <sub>max</sub>	23.08
Emin/E <sub>max</sub>	0.14
Emin/Eav	0.39

# Horizontal Illuminance (lux)

## College Road Assessment

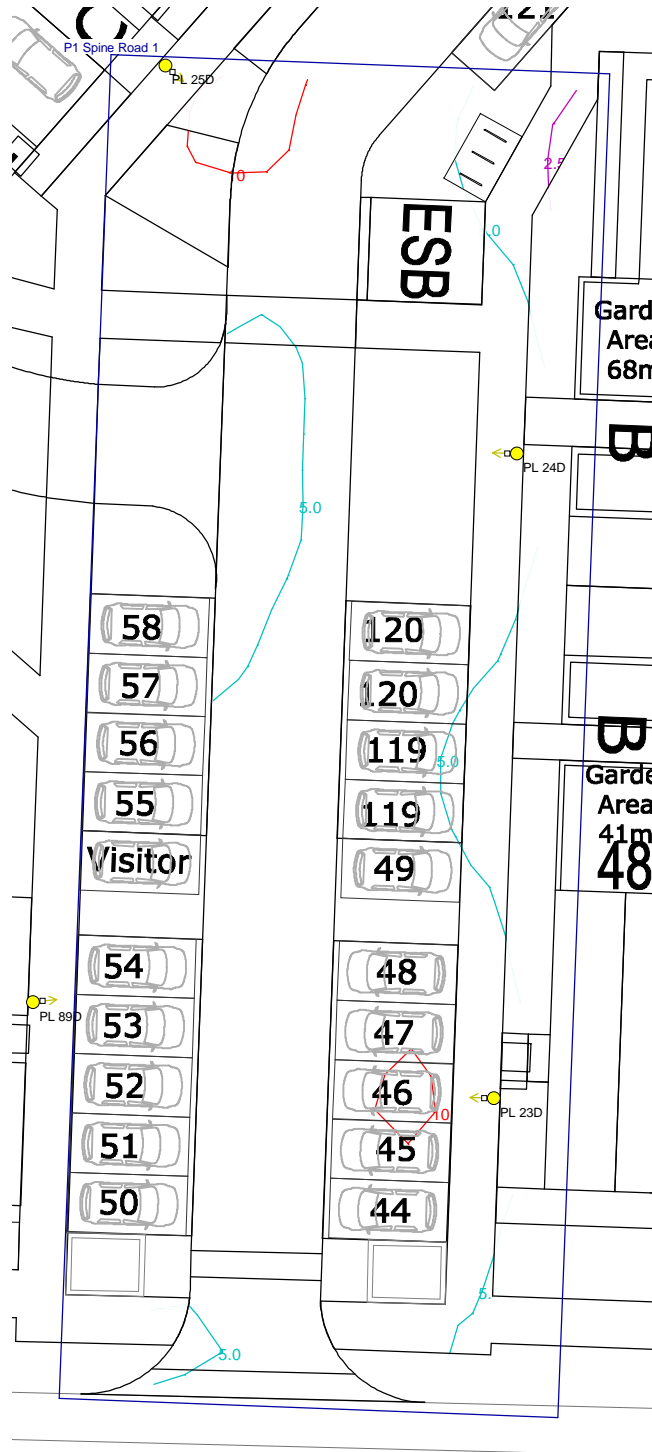


### Results

Eav	7.75
Emin	3.46
Emax	22.68
Emin/Emax	0.15
Emin/Eav	0.45

## Horizontal Illuminance (lux)

P1 Spine Road 1

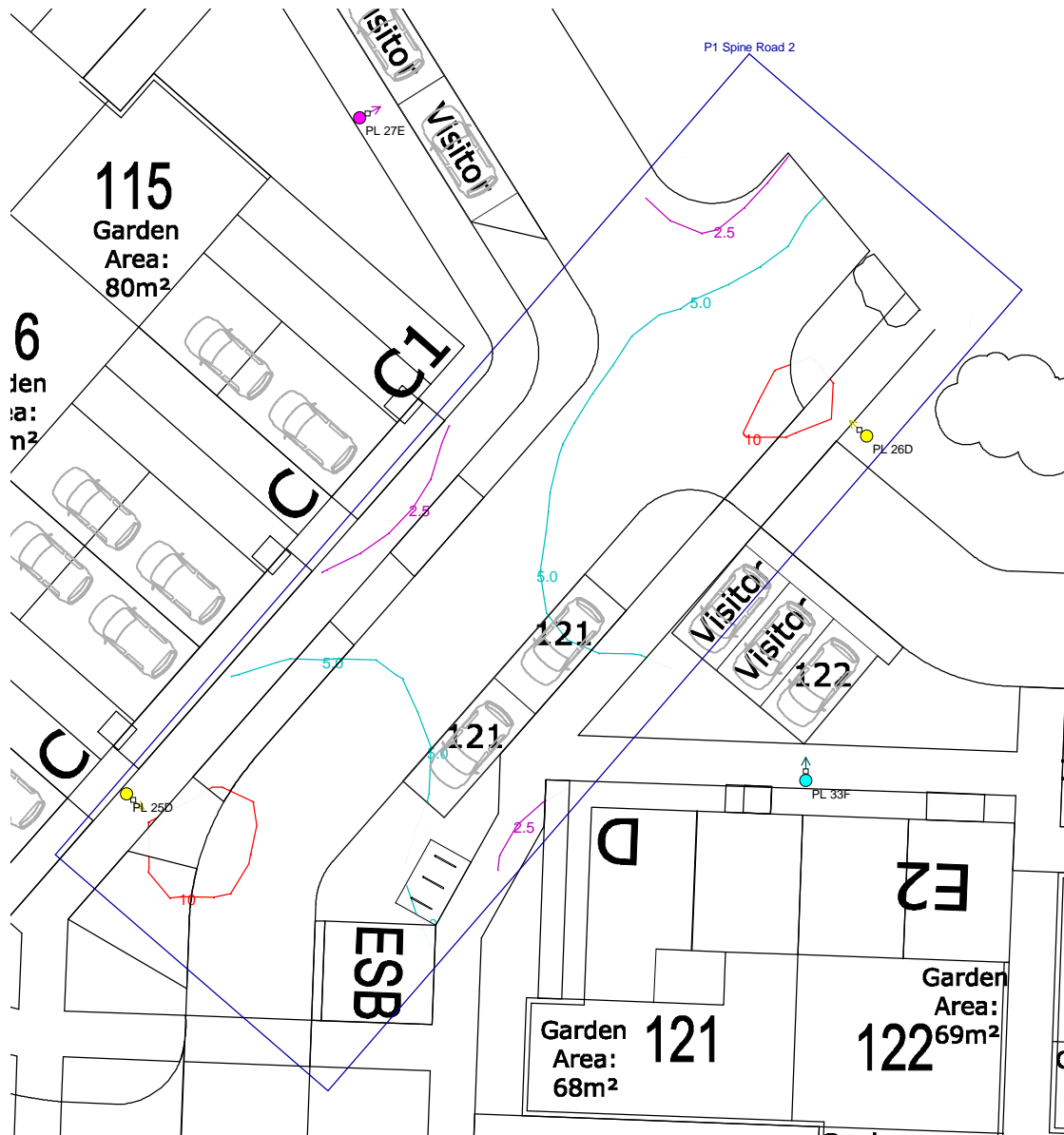


### Results

Eav	6.77
Emin	2.20
Emax	10.93
Emin/Emax	0.20
Emin/Eav	0.32

## Horizontal Illuminance (lux)

P1 Spine Road 2

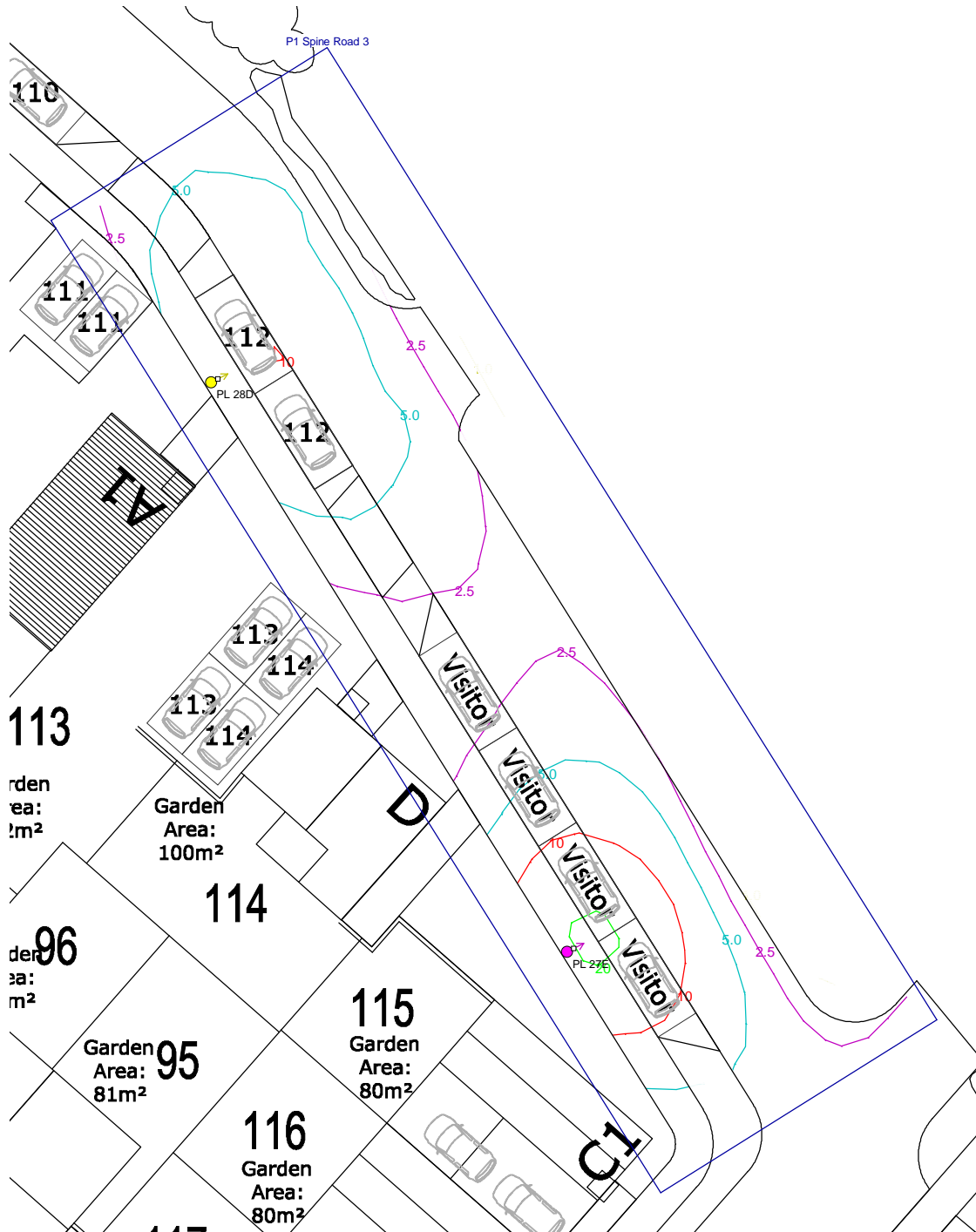


### Results

Eav	6.11
Emin	1.61
Emax	11.16
Emin/Emax	0.14
Emin/Eav	0.26

# Horizontal Illuminance (lux)

P1 Spine Road 3

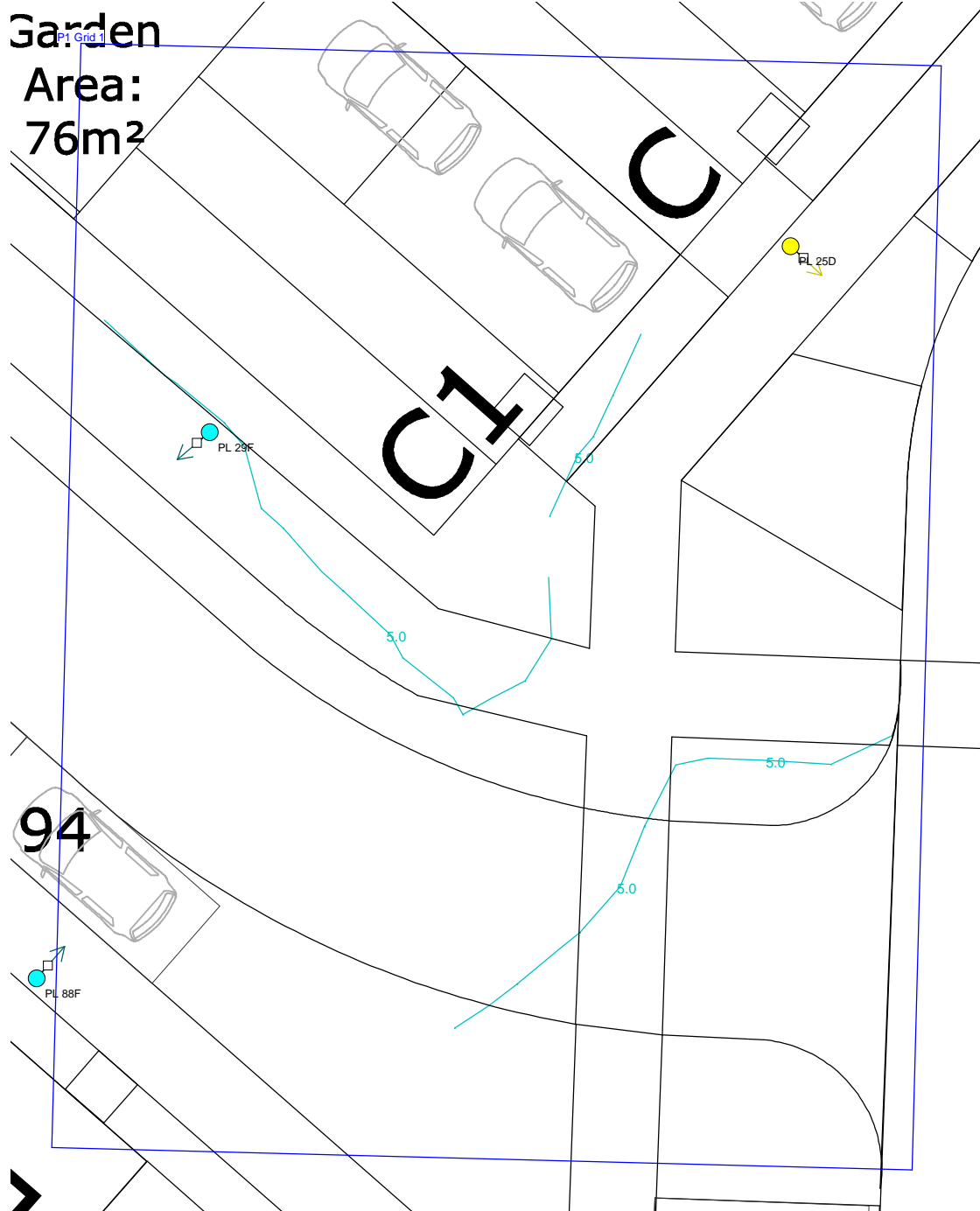


### Results

Eav	5.89
Emin	1.53
Emax	21.30
Emin/Emax	0.07
Emin/Eav	0.26

## Horizontal Illuminance (lux)

P1 Grid 1



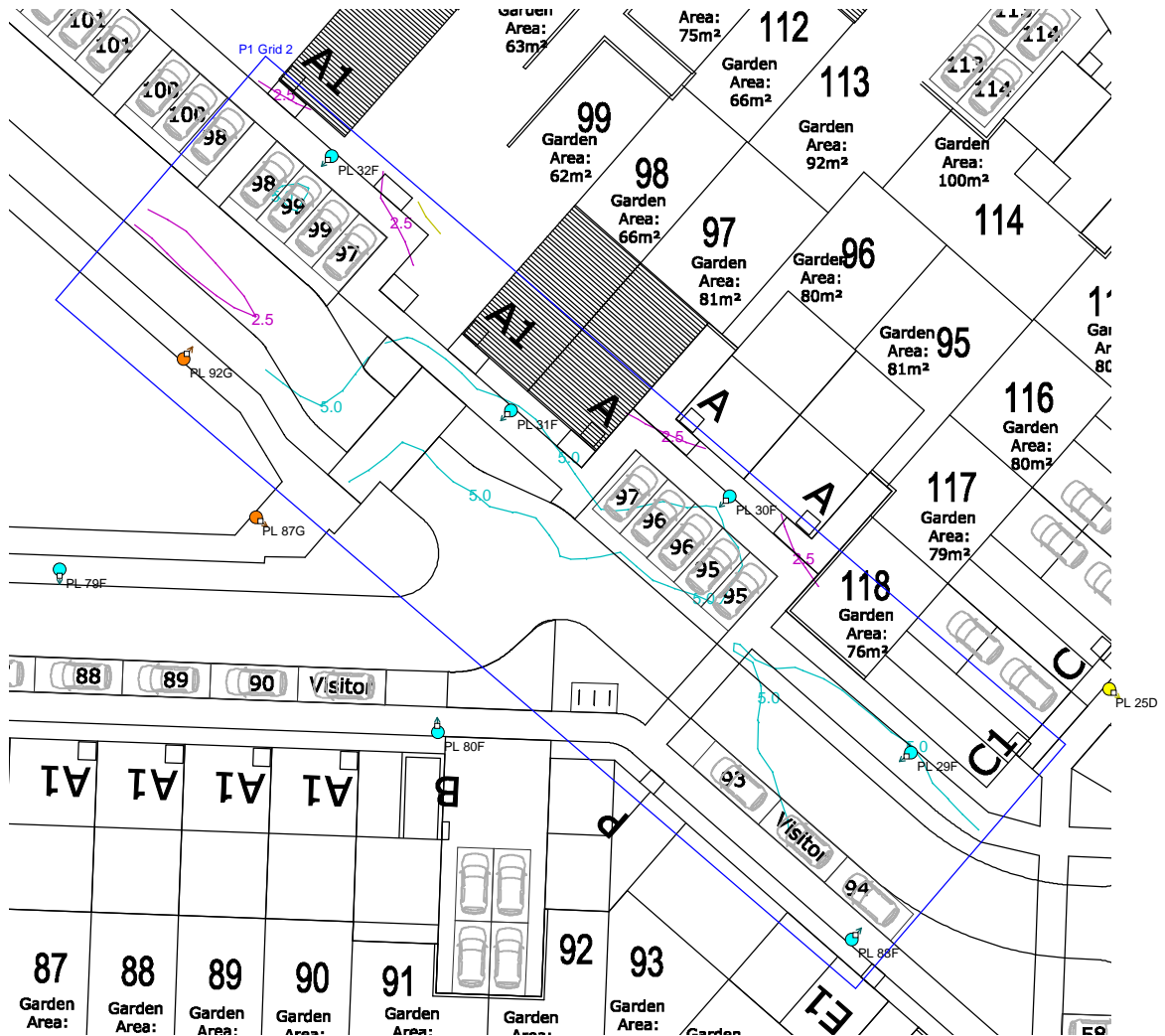
### Results

Eav	5.52
Emin	2.92
Emax	8.01
Emin/Emax	0.36
Emin/Eav	0.53



## Horizontal Illuminance (lux)

P1 Grid 2

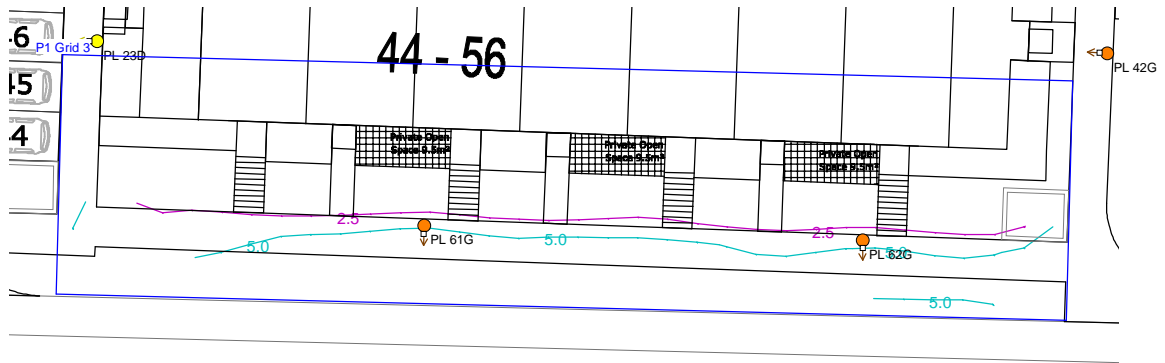


### Results

Eav	4.77
Emin	1.52
Emax	9.76
Emin/Emax	0.16
Emin/Eav	0.32

## Horizontal Illuminance (lux)

P1 Grid 3

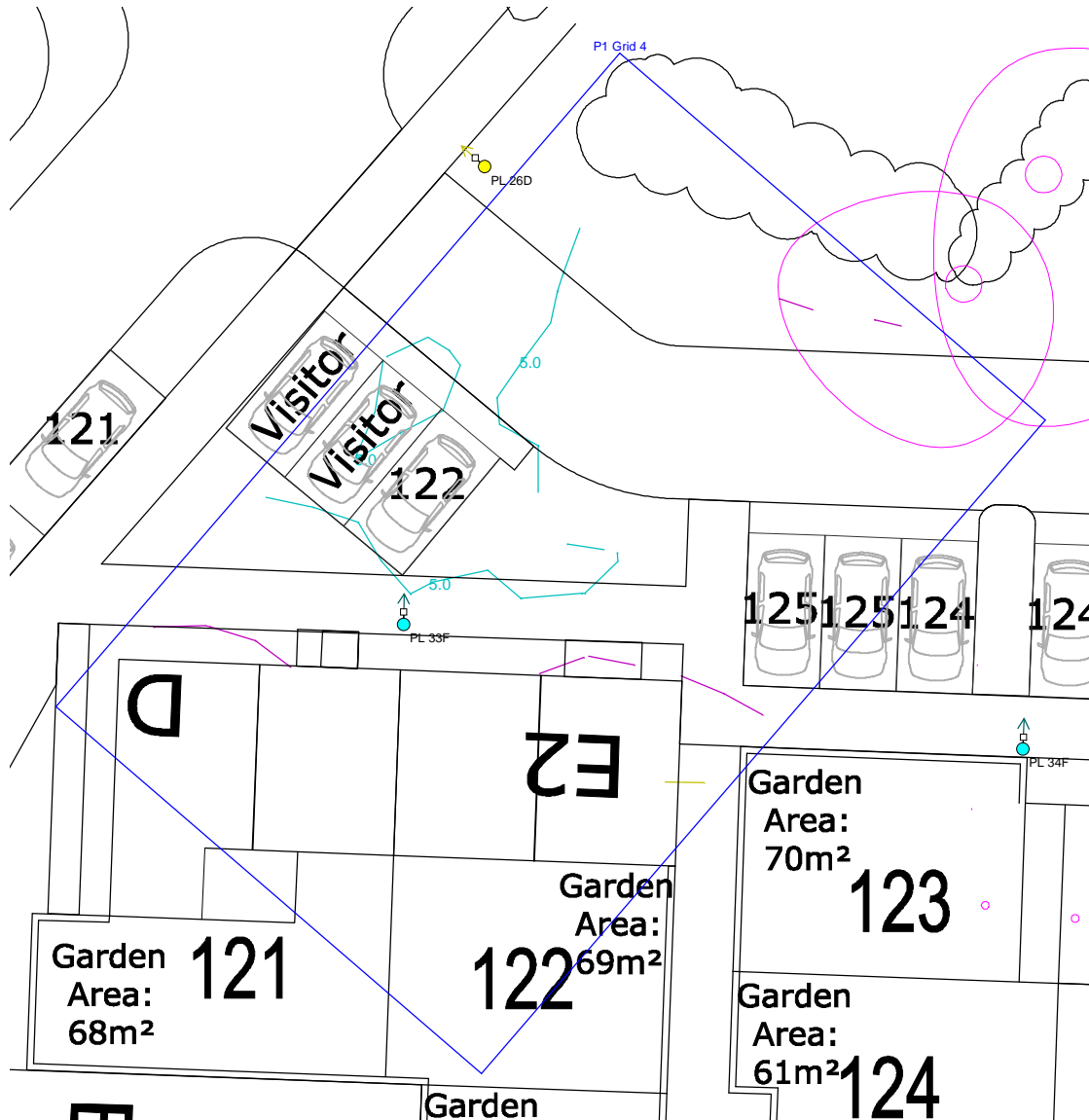


### Results

Eav	5.35
Emin	3.41
Emax	8.29
Emin/Emax	0.41
Emin/Eav	0.64

## Horizontal Illuminance (lux)

P1 Grid 4

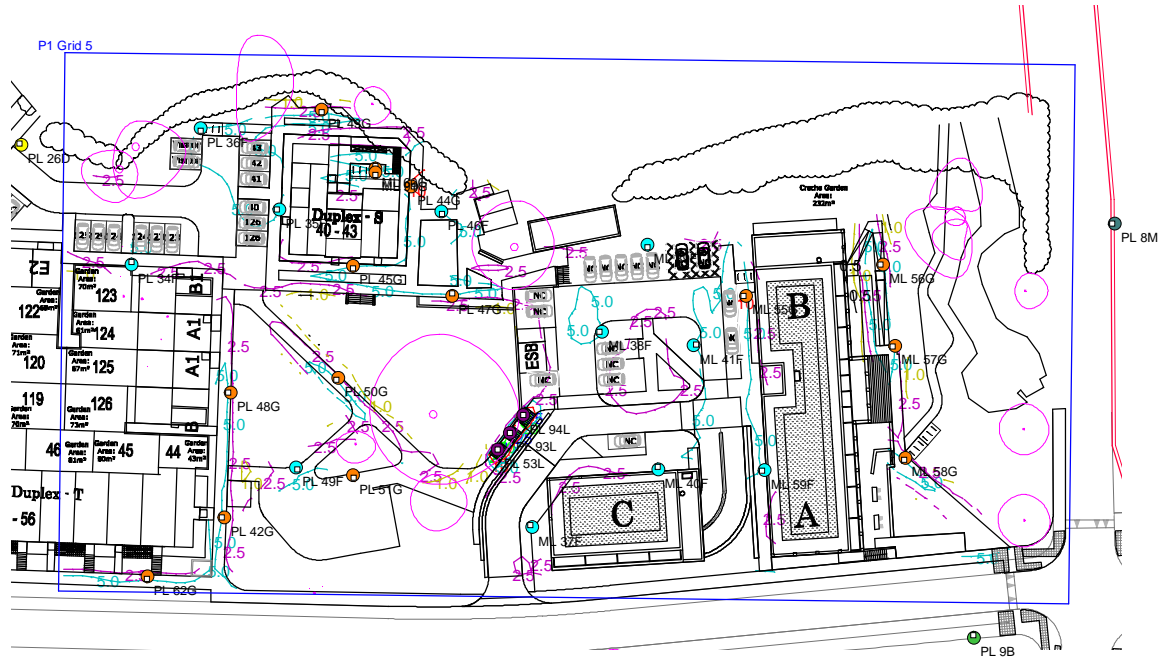


### Results

Eav	4.27
Emin	1.51
E <sub>max</sub>	6.74
E <sub>min</sub> /E <sub>max</sub>	0.22
E <sub>min</sub> /E <sub>av</sub>	0.35

# Horizontal Illuminance (lux)

P1 Grid 5

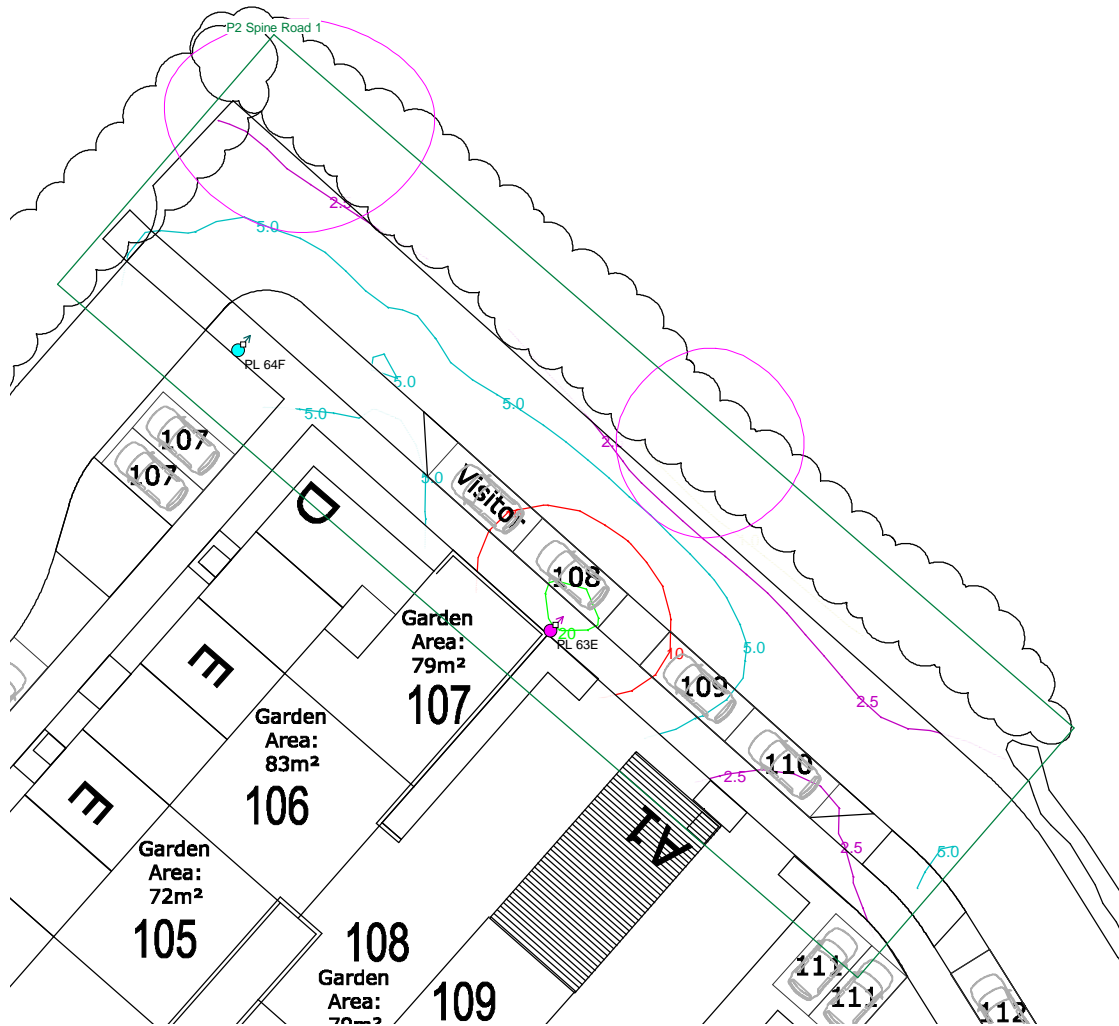


## Results

Eav	4.25
Emin	0.87
Emax	45.48
Emin/Emax	0.02
Emin/Eav	0.20

## Horizontal Illuminance (lux)

P2 Spine Road 1

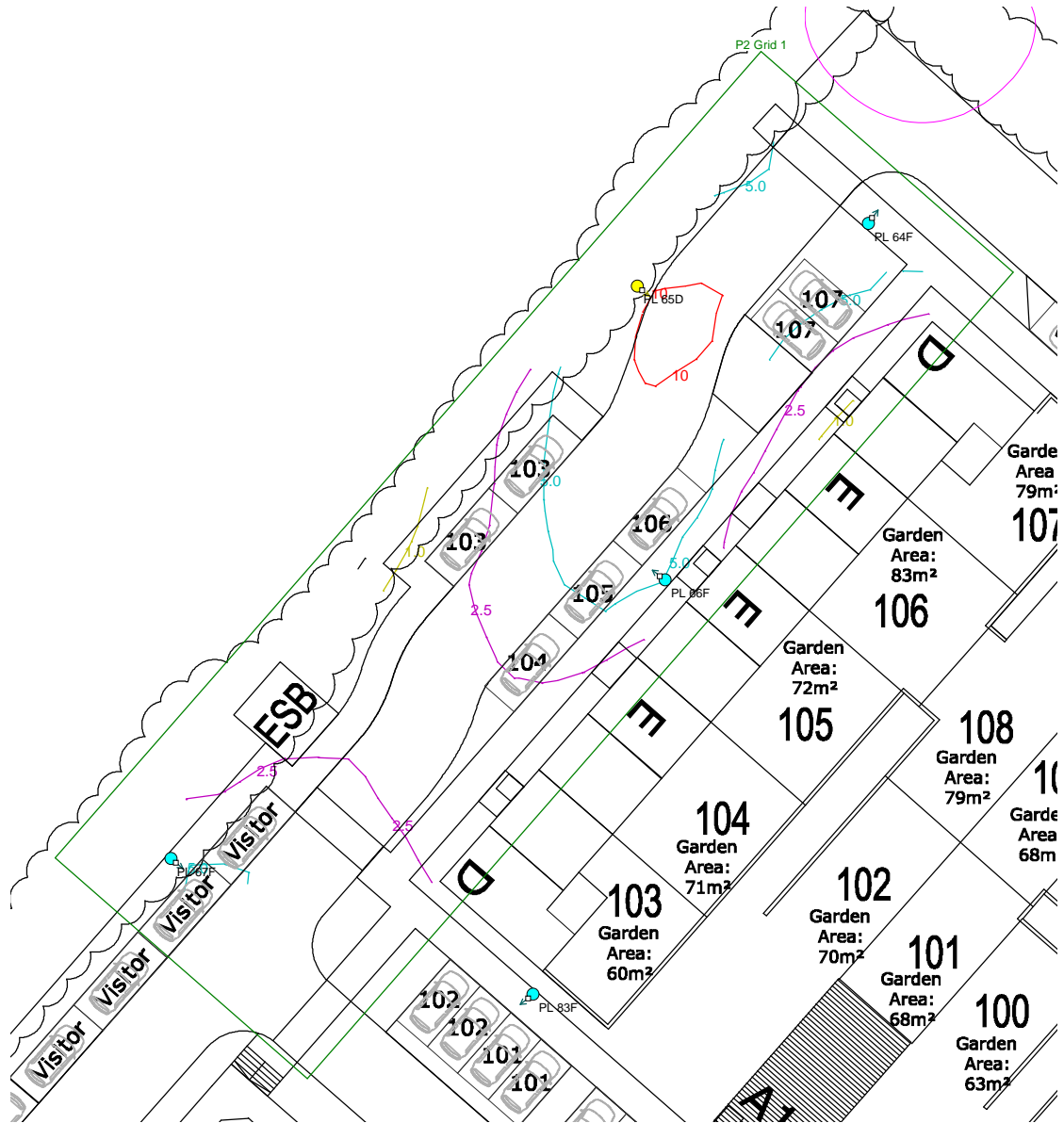


### Results

Eav	5.88
Emin	1.83
E <sub>max</sub>	22.13
E <sub>min</sub> /E <sub>max</sub>	0.08
E <sub>min</sub> /E <sub>av</sub>	0.31

## Horizontal Illuminance (lux)

P2 Grid 1

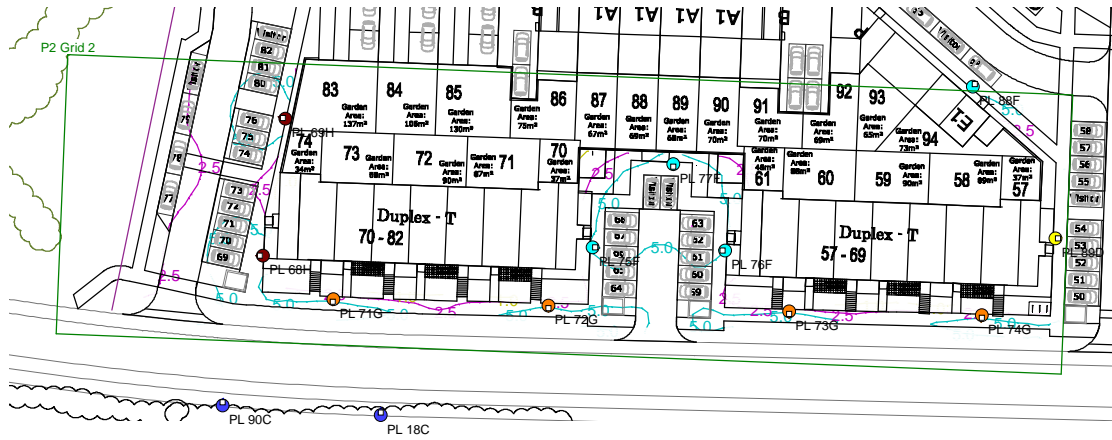


### Results

Eav	4.37
Emin	0.87
Emax	11.16
Emin/Emax	0.08
Emin/Eav	0.20

# Horizontal Illuminance (lux)

P2 Grid 2

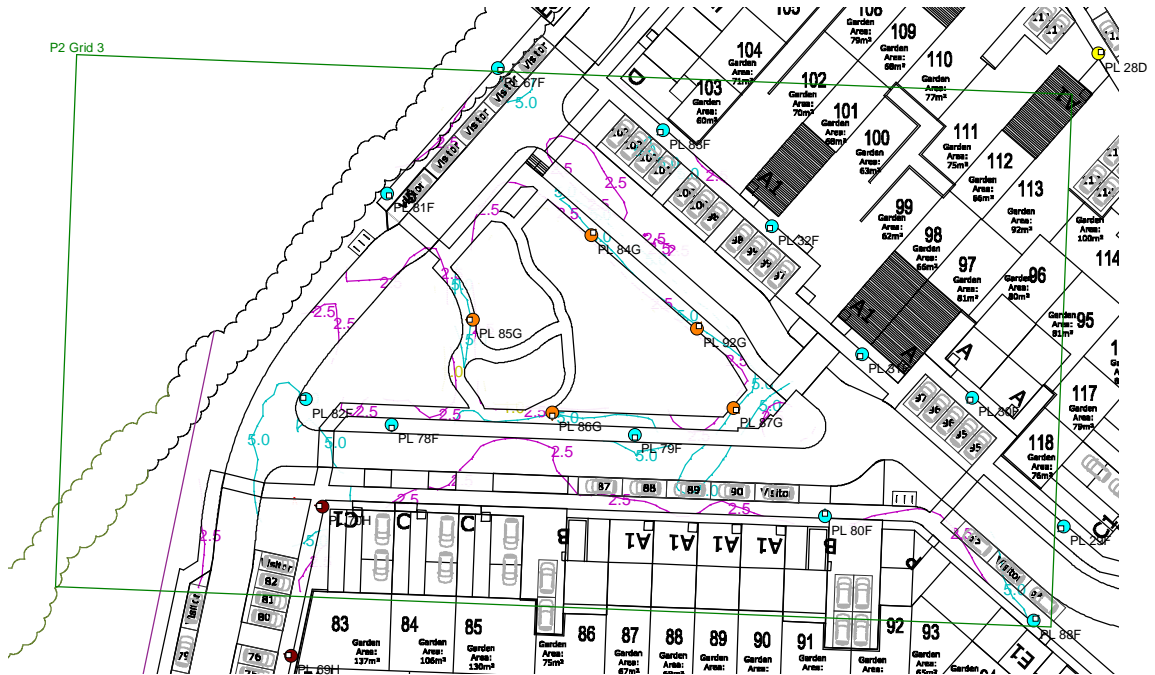


## Results

Eav	4.42
Emin	1.24
Emax	9.38
Emin/Emax	0.13
Emin/Eav	0.28

# Horizontal Illuminance (lux)

P2 Grid 3



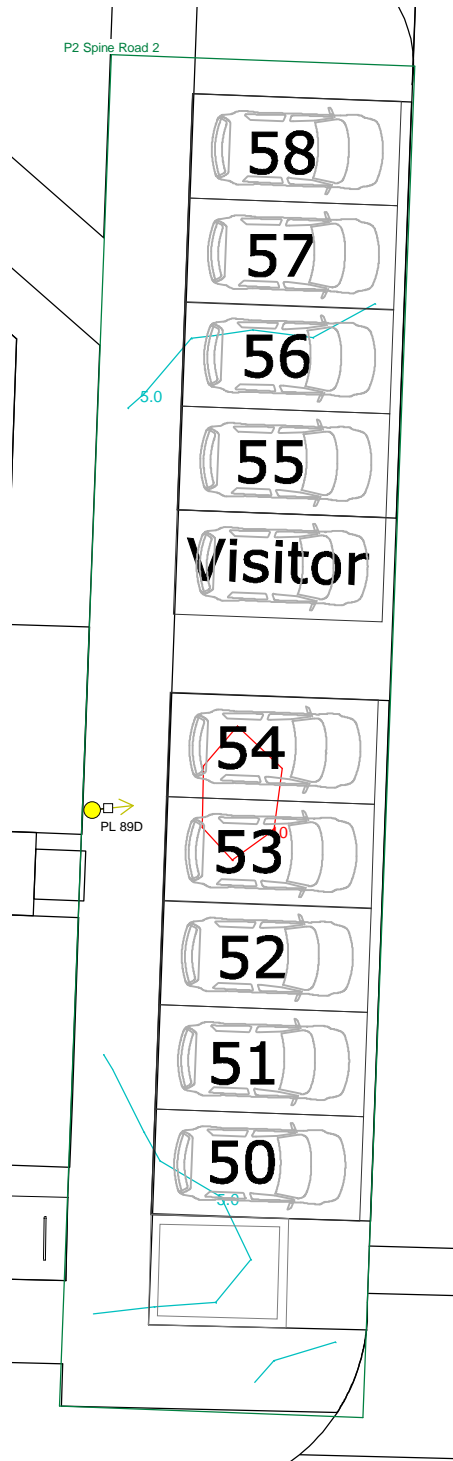
## Results

Eav	3.81
Emin	1.30
Emax	9.88
Emin/Emax	0.13
Emin/Eav	0.34



## Horizontal Illuminance (lux)

P2 Spine Road 2

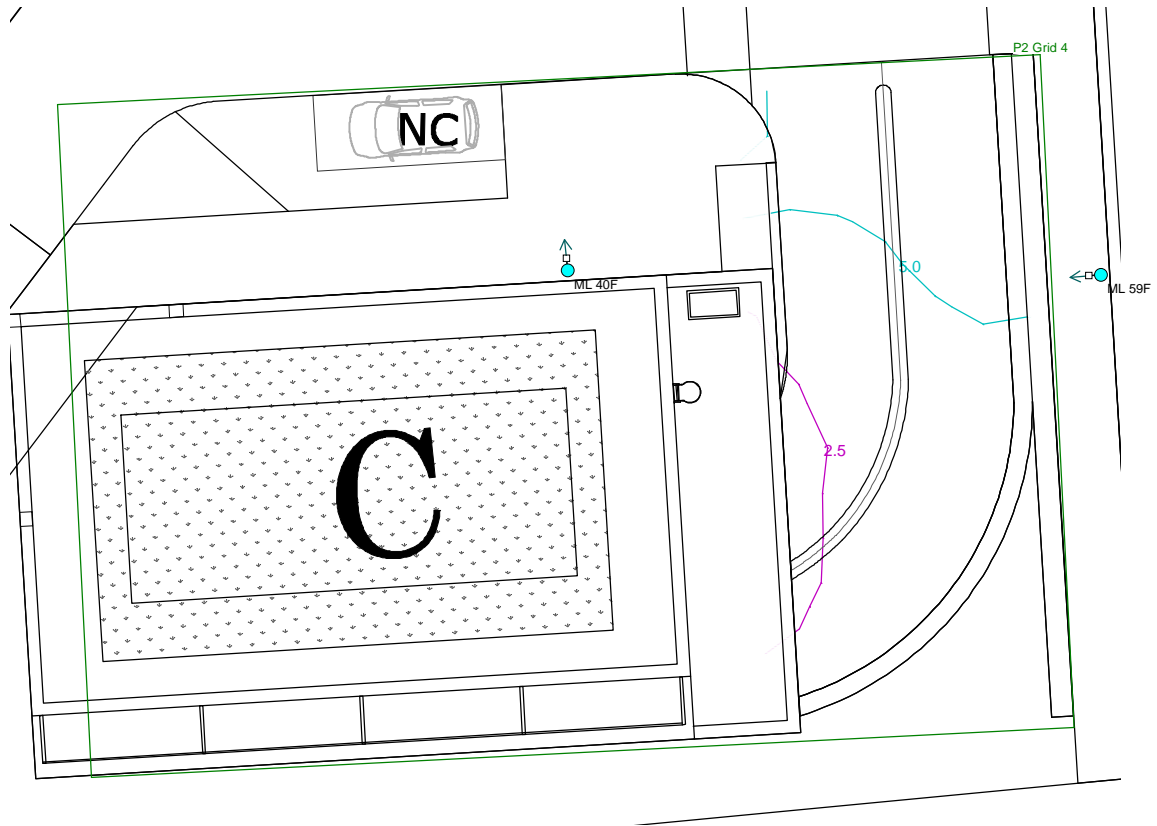


### Results

Eav	6.34
Emin	2.97
Emax	10.45
Emin/Emax	0.28
Emin/Eav	0.47

## Horizontal Illuminance (lux)

P2 Grid 4



### Results

Eav	4.07
Emin	2.21
Emax	5.85
Emin/Emax	0.38
Emin/Eav	0.54