

DATE: 17 May 2022
DESIGNER: Patrick Redmond
PROJECT No: 21068
PROJECT NAME: Ratoath South SHD ~ Outer Relief Road REV A



Lighting on the relief road designed to comply with I.S. EN 13201-2:2015 C5, and on both junctions with I.S. EN 13201-2:2015 C4, after dimming by 25%, with a neutral (4,000K) source, due to the nature of the road. 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 & D = 26W. Luminaire B = 54W. Luminaire C = 35W.
Connected load, averaged for CLO.

Lighting Level ~ Dimmed By 25%

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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 with R155	405.12	1712.82	157.89	158.04	1.49	1.49
2	Junction with Glascarn Lan...	1075.14	1835.01	146.82	101.38	1.50	1.49
3	Outer Relief Road 1	549.02	1668.98	357.67	81.98	1.50	1.49
4	Outer Relief Road 2	885.11	1764.58	233.85	81.98	1.50	1.49
5	Outer Relief Road 3	1174.00	1908.19	354.91	114.24	1.50	1.48

Luminaires

Luminaire A Data



Supplier	Philips
Type	BGP292 DW52
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	6.50
File Name	LumiStreet Gen2 Mini_BGP292_DW52_6500_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	48

Luminaire B Data



Supplier	Philips
Type	BGP293 DW52
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	13.50
File Name	LumiStreet Gen2 Medium_BGP293_DW52_13500_80LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	639.6, 45.2, 0.0
No. in Project	4

Luminaire C Data



Supplier	Philips
Type	BGP292 DW52
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	8.50
File Name	LumiStreet Gen2 Mini_BGP292_DW52_8500_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	10

Luminaire D Data



Supplier	Philips
Type	BGP292 DM32
Lamp(s)	LED-HB 5.2S 740
Lamp Flux (klm)	6.50
File Name	LumiStreet Gen2 Mini_BGP292_DM32_6500_40LED_5.2S_CLO_L90_740.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	452.8, 13.0, 0.0
No. in Project	3

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
PL 1	B	452.26	1710.30	8.00	336.00	0.00	0.00	0.50	75%			
PL 2	B	466.34	1747.59	8.00	337.00	0.00	0.00	0.50	75%			
PL 3	B	489.27	1777.02	8.00	162.00	0.00	0.00	0.50	75%			
PL 4	B	503.83	1806.78	8.00	150.00	0.00	0.00	0.50	75%			
PL 5	C	496.18	1749.24	8.00	251.00	0.00	0.00	0.50	75%			
PL 6	C	489.90	1733.95	8.00	70.00	0.00	0.00	0.50	75%			

Layout Continued

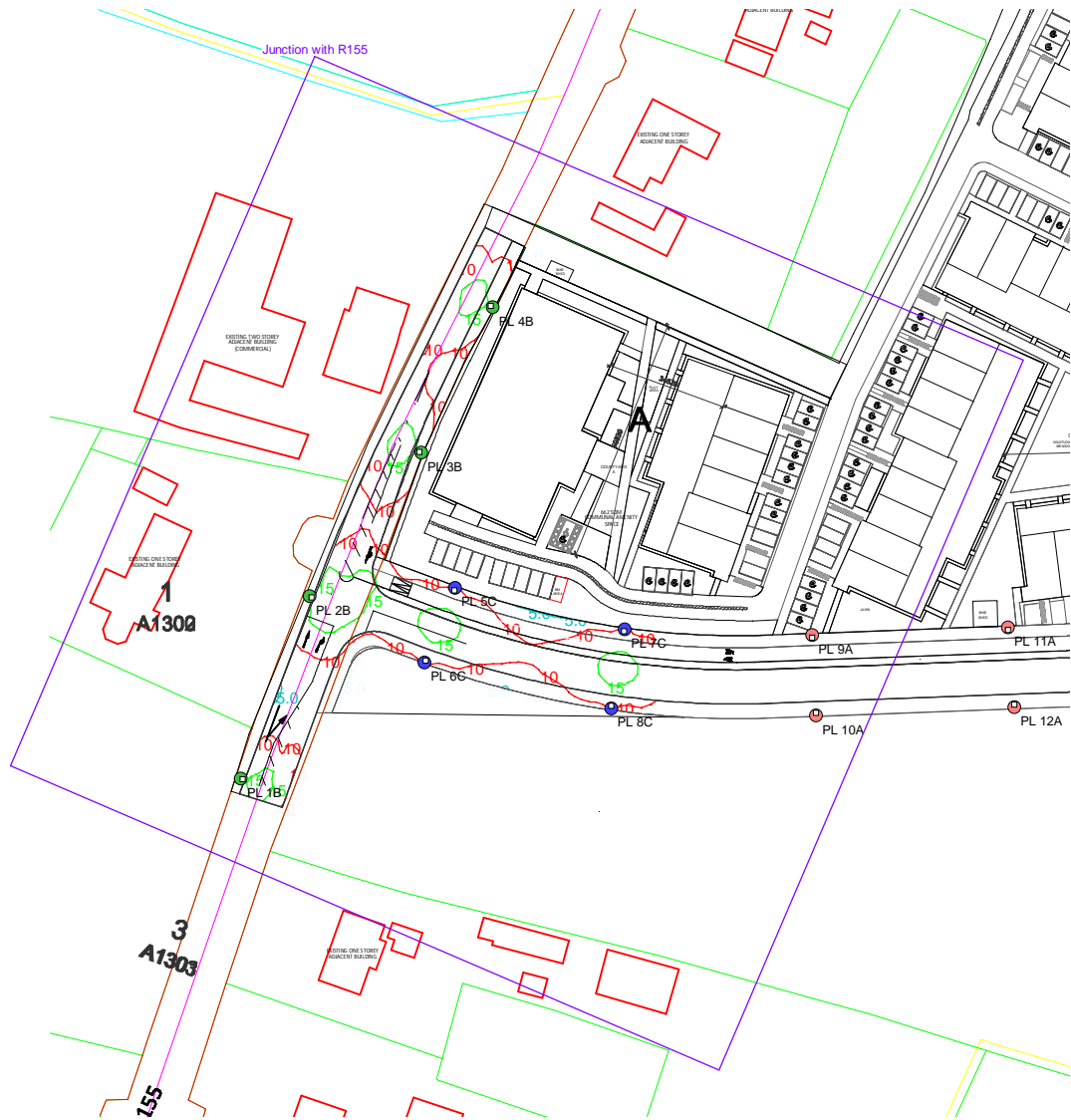
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
PL 7	C	530.82	1740.85	8.00	262.00	0.00	0.00	0.50	75%			
PL 8	C	528.13	1724.59	8.00	84.00	0.00	0.00	0.50	75%			
PL 9	A	569.22	1739.57	8.00	272.00	0.00	0.00	0.50	75%			
PL 10	A	570.07	1723.16	8.00	95.00	0.00	0.00	0.50	75%			
PL 11	A	609.37	1741.15	8.00	273.00	0.00	0.00	0.50	75%			
PL 12	A	610.70	1724.86	8.00	96.00	0.00	0.00	0.50	75%			
PL 13	A	646.58	1745.39	8.00	281.00	0.00	0.00	0.50	75%			
PL 14	A	651.18	1729.63	8.00	106.00	0.00	0.00	0.50	75%			
PL 15	A	686.79	1752.85	8.00	280.00	0.00	0.00	0.50	75%			
PL 16	A	689.66	1736.78	8.00	100.00	0.00	0.00	0.50	75%			
PL 17	A	726.20	1757.84	8.00	279.00	0.00	0.00	0.50	75%			
PL 18	A	728.97	1741.69	8.00	101.00	0.00	0.00	0.50	75%			
PL 19	A	764.92	1765.75	8.00	285.00	0.00	0.00	0.50	75%			
PL 20	A	769.74	1750.25	8.00	108.00	0.00	0.00	0.50	75%			
PL 21	A	803.48	1776.69	8.00	288.00	0.00	0.00	0.50	75%			
PL 22	A	808.75	1761.39	8.00	109.00	0.00	0.00	0.50	75%			
PL 23	A	838.59	1792.17	8.00	300.00	0.00	0.00	0.50	75%			
PL 24	A	847.17	1778.09	8.00	119.00	0.00	0.00	0.50	75%			
PL 25	A	871.13	1811.58	8.00	305.00	0.00	0.00	0.50	75%			
PL 26	A	880.98	1798.44	8.00	125.00	0.00	0.00	0.50	75%			
PL 27	A	906.09	1832.70	8.00	305.00	0.00	0.00	0.50	75%			
PL 28	A	914.82	1818.77	8.00	122.00	0.00	0.00	0.50	75%			
PL 29	A	939.44	1852.66	8.00	304.00	0.00	0.00	0.50	75%			
PL 30	A	948.35	1838.91	8.00	119.00	0.00	0.00	0.50	75%			
PL 31	A	971.26	1871.86	8.00	306.00	0.00	0.00	0.50	75%			
PL 32	A	981.03	1858.56	8.00	126.00	0.00	0.00	0.50	75%			
PL 33	A	998.25	1890.68	8.00	305.00	0.00	0.00	0.50	75%			
PL 34	A	1008.89	1878.10	8.00	127.00	0.00	0.00	0.50	75%			
PL 35	A	1031.65	1914.17	8.00	305.00	0.00	0.00	0.50	75%			
PL 36	A	1040.96	1900.66	8.00	127.00	0.00	0.00	0.50	75%			
PL 37	C	1064.39	1935.44	8.00	300.00	0.00	0.00	0.50	75%			
PL 38	C	1072.50	1921.31	8.00	125.00	0.00	0.00	0.50	75%			
PL 39	C	1091.22	1951.76	8.00	302.00	0.00	0.00	0.50	75%			
PL 40	C	1095.05	1934.87	8.00	121.00	0.00	0.00	0.50	75%			
PL 41	C	1119.48	1968.84	8.00	303.00	0.00	0.00	0.50	75%			
PL 42	C	1129.50	1955.58	8.00	123.00	0.00	0.00	0.50	75%			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
PL 43	A	1149.63	1982.46	8.00	295.00	0.00	0.00	0.50	75%			
PL 44	A	1155.68	1967.31	8.00	113.00	0.00	0.00	0.50	75%			
PL 45	A	1188.93	1989.20	8.00	280.00	0.00	0.00	0.50	75%			
PL 46	A	1190.07	1972.93	8.00	106.00	0.00	0.00	0.50	75%			
PL 47	A	1222.62	1994.83	8.00	288.00	0.00	0.00	0.50	75%			
PL 48	A	1229.33	1979.77	8.00	117.00	0.00	0.00	0.50	75%			
PL 49	A	1251.95	2008.93	8.00	303.00	0.00	0.00	0.50	75%			
PL 50	A	1260.75	1995.51	8.00	122.00	0.00	0.00	0.50	75%			
PL 51	D	1103.13	1927.79	8.00	28.00	0.00	0.00	0.40	75%			
PL 52	D	1118.30	1905.49	8.00	42.00	0.00	0.00	0.40	75%			
PL 53	D	1138.82	1886.59	8.00	52.00	0.00	0.00	0.40	75%			
PL 317	A	1284.89	2030.26	8.00	300.00	0.00	0.00	0.50	75%			
PL 318	A	1291.81	2015.13	8.00	123.00	0.00	0.00	0.50	75%			
PL 319	A	1319.14	2052.15	8.00	301.00	0.00	0.00	0.50	75%			
PL 320	A	1326.85	2037.53	8.00	125.00	0.00	0.00	0.50	75%			
PL 322	A	1360.25	2059.67	8.00	132.00	0.00	0.00	0.50	75%			
PL 321	A	1349.33	2071.89	8.00	306.00	0.00	0.00	0.50	75%			
PL 324	A	1386.52	2089.66	8.00	149.00	0.00	0.00	0.50	75%			
PL 323	A	1372.14	2097.59	8.00	327.00	0.00	0.00	0.50	75%			
PL 326	A	1401.97	2126.53	8.00	159.00	0.00	0.00	0.50	75%			
PL325	A	1386.01	2131.45	8.00	339.00	0.00	0.00	0.50	75%			
PL 327	A	1406.39	2165.69	8.00	312.00	0.00	0.00	0.50	75%			
PL 328	A	1418.87	2154.44	8.00	138.00	0.00	0.00	0.50	75%			

Horizontal Illuminance (lux)

Junction with R155

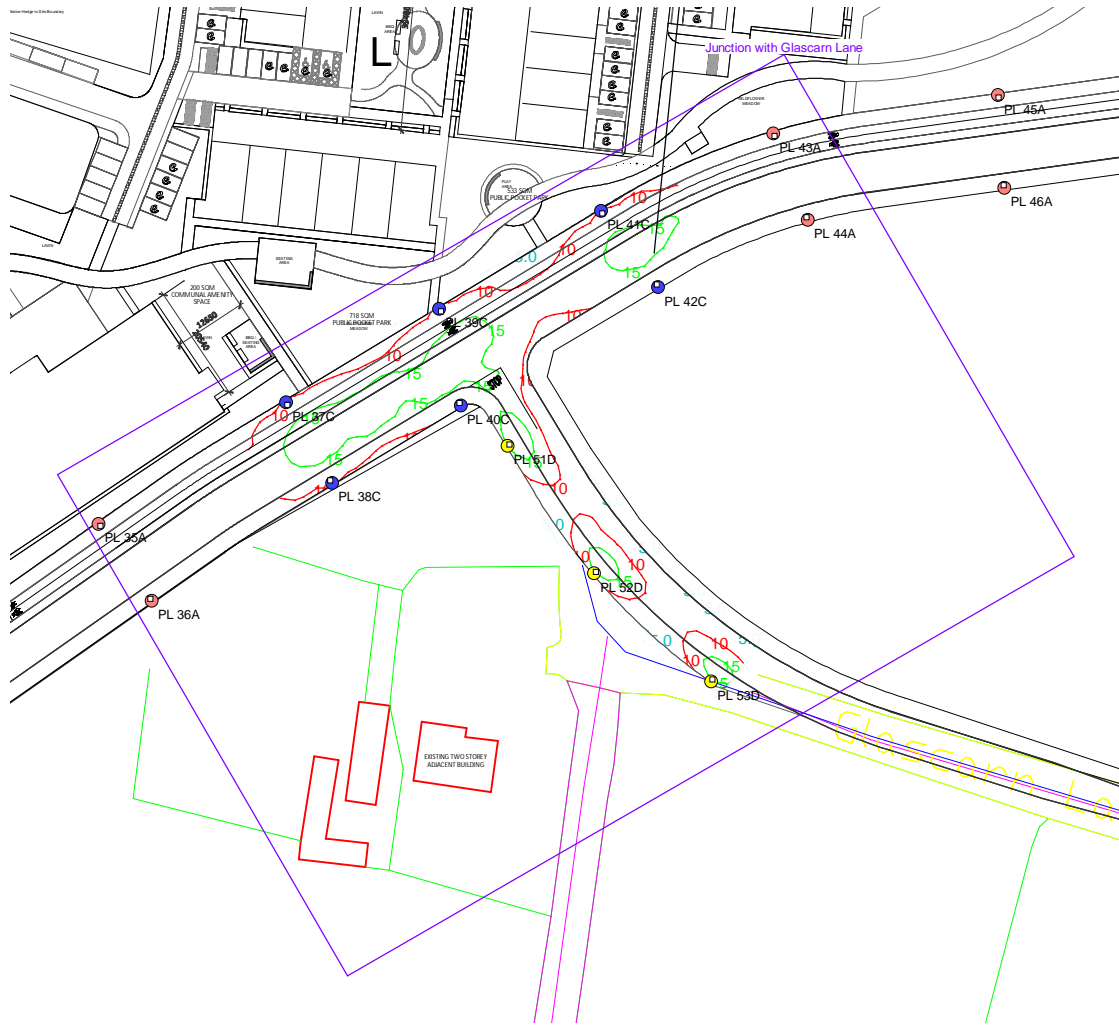


Results

Eav	11.55
Emin	5.01
Emax	19.44
Emin/Emax	0.26
Emin/Eav	0.43

Horizontal Illuminance (lux)

Junction with Glascam Lane

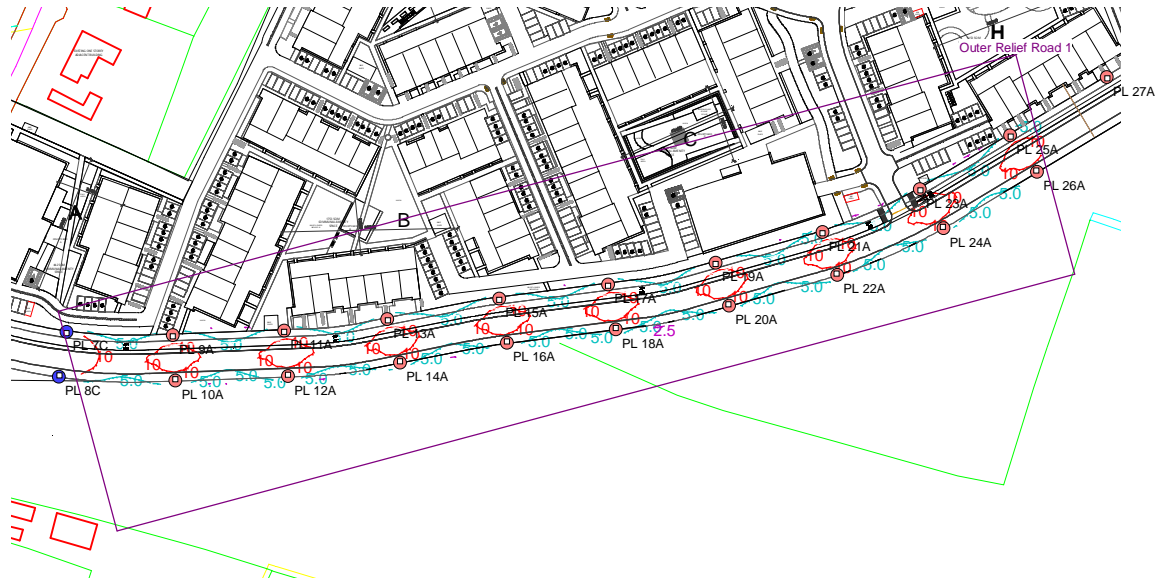


Results

Eav	12.31
Emin	5.02
E _{max}	18.94
E _{min} /E _{max}	0.27
E _{min} /E _{av}	0.41

Horizontal Illuminance (lux)

Outer Relief Road 1

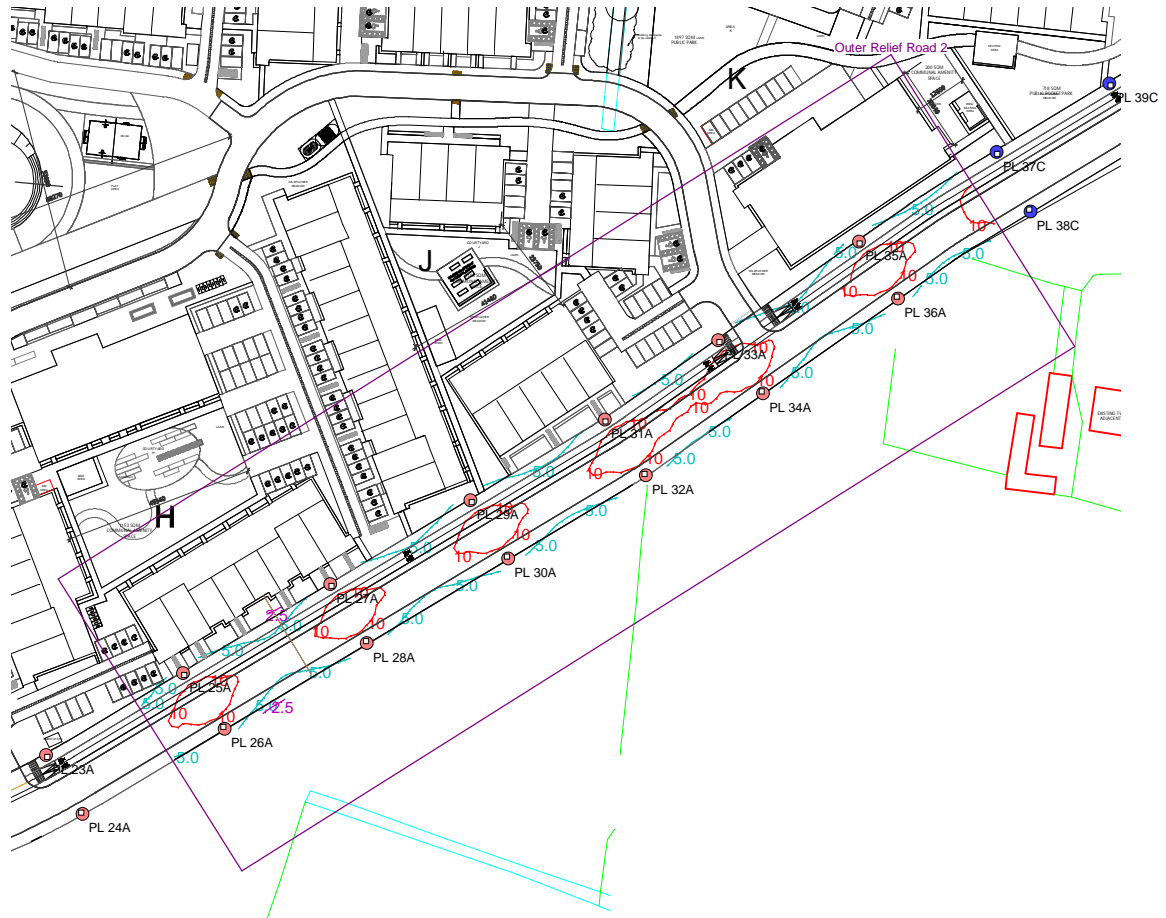


Results

Eav	7.88
Emin	3.26
E _{max}	14.10
E _{min} /E _{max}	0.23
E _{min} /E _{av}	0.41

Horizontal Illuminance (lux)

Outer Relief Road 2

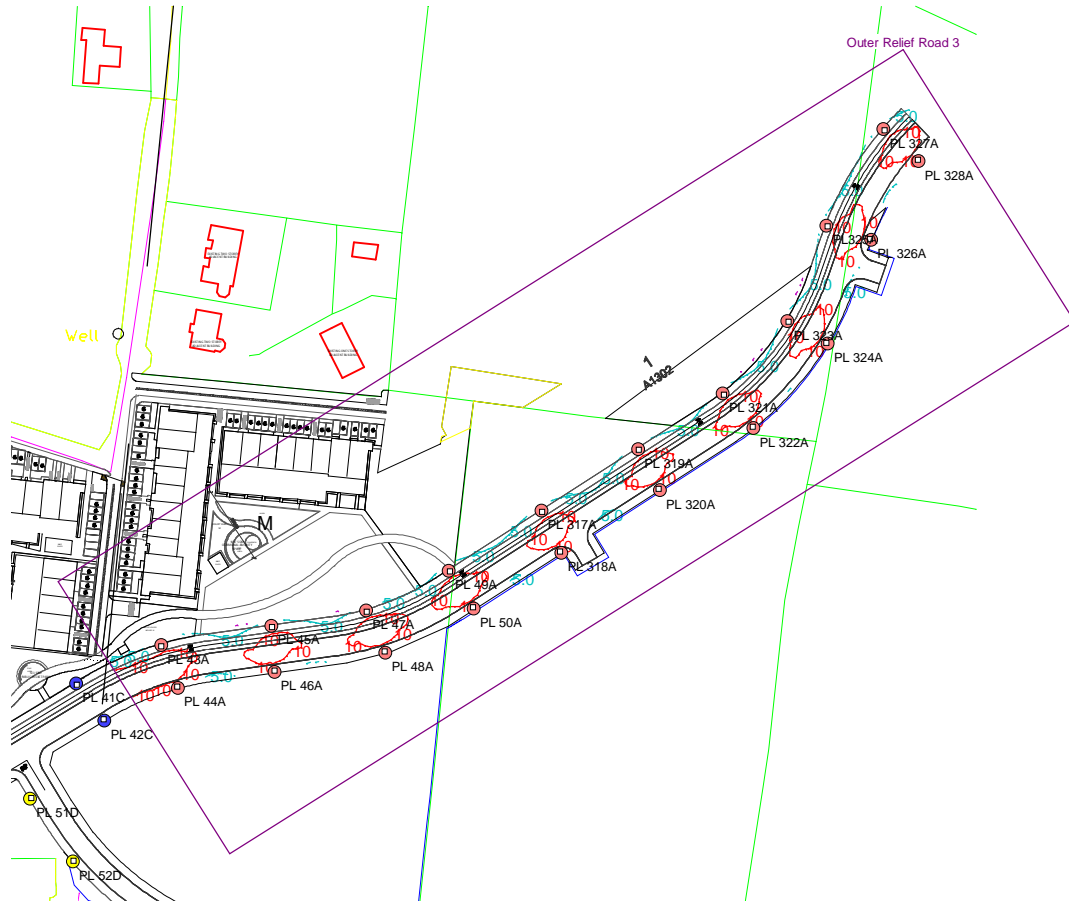


Results

Eav	8.26
Emin	3.37
E _{max}	12.97
E _{min} /E _{max}	0.26
E _{min} /E _{av}	0.41

Horizontal Illuminance (lux)

Outer Relief Road 3



Results

Eav	8.80
Emin	3.58
E _{max}	13.59
E _{min} /E _{max}	0.26
E _{min} /E _{av}	0.41