

**DATE:** 18 May 2022  
**DESIGNER:** Patrick Redmond  
**PROJECT No:** 21068  
**PROJECT NAME:** Ratoath South SHD REV A



Lighting designed to comply with I.S. EN 13201-2:2015 P4, with a warm (3,000K) source, within the development and I.S. EN 12464-2: 2007 5.9.1 in the phase 2 carpark. 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 degrees ambient. Photometry measured at minimum 15 degree ambient.

Luminaire E = 16W. Luminaire F & I = 9W.  
Luminaire G & J = 12W. Luminaire H = 13W. Luminaire K = 15W.  
Luminaire L = 11W. Connected load, averaged for CLO.

## Lighting Level

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Document control: TD 01 Version: 1.0

## 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	Phase 1A	440.32	1742.44	289.59	263.48	1.49	1.50
2	Phase 1B	642.76	1944.25	185.84	99.24	1.50	1.48
3	Phase 1C	761.71	1749.43	93.84	110.85	1.49	1.50
4	Phase 2	796.22	1777.69	212.57	193.47	1.50	1.50
5	Phase 3	701.48	1948.78	271.46	149.81	1.50	1.50
6	Phase 4	952.19	1890.07	311.98	206.92	1.50	1.50
7	Phase 2 Carpark	887.68	1850.43	28.41	52.39	1.50	1.50
8	Isolux 1	418.34	1667.16	65.73	76.40	1.49	1.50
9	Isolux 2	730.11	1681.84	167.91	64.31	2.10	2.30
10	Isolux 3	1011.73	1764.99	251.68	126.12	1.50	1.48
11	Isolux 4	1276.47	1924.08	311.01	119.33	1.50	1.49

### 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

## Luminaires

### Luminaire E Data

Supplier	ASD Lighting
Type	HWD2-#3K08 600-S1-CLO Gen 5
Lamp(s)	LED
LampFlux(klm)/Colour	1.99 3000/72
File Name	HWD2-#3K08 600-S1-CLO (16W).ldt
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	1036.3, 25.5, 0.4
No. in Project	38

### Luminaire F Data

Supplier	ASD Lighting
Type	HWD2-#3K12 200-N1-CLO Gen 5
Lamp(s)	LED
LampFlux(klm)/Colour	1.21 3000/72
File Name	HWD2-#3K12 200-N1-CLO (9W).ldt
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	419.5, 16.4, 0.4
No. in Project	19

### Luminaire G Data

Supplier	ASD Lighting
Type	HWD2-#3K12 300-S1-CLO Gen 5
Lamp(s)	LED
LampFlux(klm)/Colour	1.68 3000/72
File Name	HWD2-#3K12 300-S1-CLO (12W).ldt
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	1035.9, 21.4, 0.4
No. in Project	40

### Luminaire H Data

Supplier	ASD Lighting
Type	HWD2-#3K08 500-S4-CLO Gen 5
Lamp(s)	LED
LampFlux(klm)/Colour	1.86 3000/72
File Name	HWD2-#3K08 500-S4-CLO (13W).ldt
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	538.9, 31.3, 0.5
No. in Project	32

### Luminaire I Data

Supplier	ASD Lighting
Type	HWD2-#3K08 300-N3-CLO Gen 5
Lamp(s)	LED
LampFlux(klm)/Colour	1.06 3000/72
File Name	HWD2-#3K08 300-N3-CLO (9W).ldt
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	1140.7, 59.0, 0.4
No. in Project	81

### Luminaire J Data

Supplier	ASD Lighting
Type	HWD2-#3K12 300-S4-CLO Gen 5
Lamp(s)	LED
LampFlux(klm)/Colour	1.68 3000/72
File Name	HWD2-#3K12 300-S4-CLO (12W).ldt
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	536.0, 29.5, 0.6
No. in Project	46

### Luminaire K Data

Supplier	ASD Lighting
Type	HWD2-#3K12 400-M2-CLO Gen 5
Lamp(s)	LED
LampFlux(klm)/Colour	1.72 3000/72
File Name	HWD2-#3K12 400-M2-CLO (15W).ldt
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	1007.5, 345.2, 1.1
No. in Project	4

### Luminaire L Data

Supplier	ASD Lighting
Type	HWD2-#3K16 200-S4-CLO Gen 5
Lamp(s)	LED
LampFlux(klm)/Colour	1.54 3000/72
File Name	HWD2-#3K16 200-S4-CLO (11W).ldt
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	503.5, 30.8, 0.9
No. in Project	8

**Layout**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
PL 1	B	452.26	1710.30	8.00	336.00	0.00	0.00	0.50			
PL 2	B	466.34	1747.59	8.00	337.00	0.00	0.00	0.50			
PL 3	B	489.27	1777.02	8.00	162.00	0.00	0.00	0.50			
PL 4	B	503.83	1806.78	8.00	150.00	0.00	0.00	0.50			
PL 5	C	496.18	1749.24	8.00	251.00	0.00	0.00	0.50			
PL 6	C	489.90	1733.95	8.00	70.00	0.00	0.00	0.50			
PL 7	C	530.82	1740.85	8.00	262.00	0.00	0.00	0.50			
PL 8	C	528.13	1724.59	8.00	84.00	0.00	0.00	0.50			
PL 9	A	569.22	1739.57	8.00	272.00	0.00	0.00	0.50			
PL 10	A	570.07	1734.02	8.00	95.00	0.00	0.00	0.50			
PL 11	A	609.37	1741.15	8.00	273.00	0.00	0.00	0.50			
PL 12	A	610.70	1724.86	8.00	96.00	0.00	0.00	0.50			
PL 13	A	646.58	1745.39	8.00	281.00	0.00	0.00	0.50			
PL 14	A	651.18	1729.63	8.00	106.00	0.00	0.00	0.50			
PL 15	A	686.79	1752.85	8.00	280.00	0.00	0.00	0.50			
PL 16	A	689.66	1747.40	8.00	100.00	0.00	0.00	0.50			
PL 17	A	726.20	1757.84	8.00	279.00	0.00	0.00	0.50			
PL 18	A	728.97	1741.69	8.00	101.00	0.00	0.00	0.50			
PL 19	A	764.92	1765.75	8.00	285.00	0.00	0.00	0.50			
PL 20	A	769.74	1750.25	8.00	108.00	0.00	0.00	0.50			
PL 21	A	803.48	1776.69	8.00	286.00	0.00	0.00	0.50			
PL 22	A	808.75	1761.39	8.00	109.00	0.00	0.00	0.50			
PL 23	A	838.59	1792.17	8.00	300.00	0.00	0.00	0.50			
PL 24	A	847.17	1778.09	8.00	119.00	0.00	0.00	0.50			
PL 25	A	871.13	1811.58	8.00	305.00	0.00	0.00	0.50			
PL 26	A	880.98	1798.44	8.00	125.00	0.00	0.00	0.50			
PL 27	A	906.09	1832.70	8.00	305.00	0.00	0.00	0.50			
PL 28	A	914.82	1818.77	8.00	122.00	0.00	0.00	0.50			
PL 29	A	939.44	1852.66	8.00	304.00	0.00	0.00	0.50			
PL 30	A	948.35	1838.91	8.00	119.00	0.00	0.00	0.50			
PL 31	A	971.26	1871.86	8.00	306.00	0.00	0.00	0.50			
PL 32	A	981.03	1858.56	8.00	126.00	0.00	0.00	0.50			
PL 33	A	998.25	1890.68	8.00	305.00	0.00	0.00	0.50			
PL 34	A	1008.89	1878.10	8.00	127.00	0.00	0.00	0.50			
PL 35	A	1031.65	1914.17	8.00	305.00	0.00	0.00	0.50			
PL 36	A	1040.96	1900.66	8.00	127.00	0.00	0.00	0.50			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
PL 37	C	1064.39	1935.44	8.00	300.00	0.00	0.00	0.50			
PL 38	C	1072.50	1921.31	8.00	125.00	0.00	0.00	0.50			
PL 39	C	1091.22	1951.76	8.00	302.00	0.00	0.00	0.50			
PL 40	C	1095.05	1934.87	8.00	121.00	0.00	0.00	0.50			
PL 41	C	1119.48	1968.84	8.00	303.00	0.00	0.00	0.50			
PL 42	C	1129.50	1955.58	8.00	123.00	0.00	0.00	0.50			
PL 43	A	1149.63	1982.46	8.00	295.00	0.00	0.00	0.50			
PL 44	A	1155.68	1967.31	8.00	113.00	0.00	0.00	0.50			
PL 45	A	1188.93	1989.20	8.00	280.00	0.00	0.00	0.50			
PL 46	A	1190.07	1972.93	8.00	106.00	0.00	0.00	0.50			
PL 47	A	1222.62	1994.83	8.00	288.00	0.00	0.00	0.50			
PL 48	A	1229.33	1979.77	8.00	117.00	0.00	0.00	0.50			
PL 49	A	1251.95	2008.93	8.00	303.00	0.00	0.00	0.50			
PL 50	A	1260.75	1995.51	8.00	122.00	0.00	0.00	0.50			
PL 51	D	1103.13	1927.79	8.00	28.00	0.00	0.00	0.40			
PL 52	D	1118.30	1905.49	8.00	42.00	0.00	0.00	0.40			
PL 53	D	1138.82	1886.59	8.00	71.00	0.00	0.00	0.40			
PL 54	E	736.26	1849.08	6.00	114.00	0.00	0.00	0.40			
PL 55	E	715.32	1843.05	6.00	114.00	0.00	0.00	0.40			
PL 56	E	679.72	1827.85	6.00	113.00	0.00	0.00	0.40			
PL 57	F	645.51	1823.30	6.00	246.00	0.00	0.00	0.40			
PL 58	F	628.53	1831.39	6.00	244.00	0.00	0.00	0.40			
PL 59	F	611.12	1840.10	6.00	244.00	0.00	0.00	0.40			
PL 60	E	659.08	1819.49	6.00	114.00	0.00	0.00	0.40			
PL 61	E	597.97	1840.10	6.00	331.00	0.00	0.00	0.40			
PL 62	E	611.60	1869.03	6.00	335.00	0.00	0.00	0.40			
PL 63	E	624.18	1896.26	6.00	334.00	0.00	0.00	0.40			
PL 64	E	637.09	1915.75	6.00	294.00	0.00	0.00	0.40			
PL 65	E	663.66	1909.39	6.00	244.00	0.00	0.00	0.40			
PL 66	E	693.07	1897.14	6.00	251.00	0.00	0.00	0.40			
PL 67	E	719.38	1886.24	6.00	245.00	0.00	0.00	0.40			
PL 68	F	724.67	1865.81	6.00	19.00	0.00	0.00	0.40			
PL 69	E	592.22	1812.35	6.00	152.00	0.00	0.00	0.40			
PL 70	E	581.11	1790.11	6.00	154.00	0.00	0.00	0.40			
PL 71	E	572.41	1766.42	6.00	161.00	0.00	0.00	0.40			
PL 72	F	559.65	1742.27	6.00	78.00	0.00	0.00	0.40			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
PL 73	F	533.06	1749.84	6.00	267.00	0.00	0.00	0.40			
PL 74	F	502.97	1754.45	6.00	69.00	0.00	0.00	0.40			
ML 75	H	757.67	1851.06	6.00	113.00	0.00	0.00	0.40			
PL 76	E	761.98	1866.68	6.00	279.00	0.00	0.00	0.40			
PL 77	G	791.62	1862.90	6.00	254.00	0.00	0.00	0.40			
PL 78	E	690.63	1808.78	6.00	24.00	0.00	0.00	0.40			
PL 79	E	701.38	1784.71	6.00	22.00	0.00	0.00	0.40			
PL 80	E	707.98	1768.61	6.00	24.00	0.00	0.00	0.40			
PL 81	E	715.66	1759.20	6.00	103.00	0.00	0.00	0.40			
PL 82	E	683.90	1755.04	6.00	98.00	0.00	0.00	0.40			
PL 83	H	659.21	1761.67	6.00	23.00	0.00	0.00	0.40			
PL 84	H	675.07	1771.07	6.00	205.00	0.00	0.00	0.40			
PL 85	H	737.44	1774.31	6.00	292.00	0.00	0.00	0.40			
PL 86	H	736.40	1785.96	6.00	17.00	0.00	0.00	0.40			
PL 87	H	754.87	1786.50	6.00	203.00	0.00	0.00	0.40			
ML 88	H	697.89	1858.15	6.00	252.00	0.00	0.00	0.40			
ML 89	H	679.98	1859.58	6.00	20.00	0.00	0.00	0.40			
ML 90	H	656.36	1890.14	6.00	342.00	0.00	0.00	0.40			
ML 91	I	524.37	1808.30	6.00	67.00	0.00	0.00	0.40			
ML 92	I	556.33	1794.13	6.00	67.00	0.00	0.00	0.40			
ML 93	I	538.22	1785.11	6.00	162.00	0.00	0.00	0.40			
ML 94	I	533.33	1789.38	6.00	349.00	0.00	0.00	0.40			
ML 95	I	535.14	1762.15	6.00	157.00	0.00	0.00	0.40			
ML 96	I	522.97	1766.69	6.00	156.00	0.00	0.00	0.40			
ML 97	I	602.10	1754.40	6.00	330.00	0.00	0.00	0.40			
ML 98	I	614.28	1781.35	6.00	342.00	0.00	0.00	0.40			
ML 99	I	610.07	1799.46	6.00	67.00	0.00	0.00	0.40			
ML 100	I	625.34	1769.10	6.00	96.00	0.00	0.00	0.40			
ML 101	I	648.45	1772.00	6.00	99.00	0.00	0.00	0.40			
ML 102	I	631.29	1788.86	6.00	61.00	0.00	0.00	0.40			
ML 103	I	642.74	1797.36	6.00	166.00	0.00	0.00	0.40			
ML 104	I	652.94	1797.26	6.00	24.00	0.00	0.00	0.40			
ML 105	H	641.37	1777.52	6.00	154.00	0.00	0.00	0.40			
ML 106	I	676.48	1795.44	6.00	114.00	0.00	0.00	0.40			
ML 107	I	644.44	1837.30	6.00	202.00	0.00	0.00	0.40			
ML 108	I	633.14	1840.22	6.00	332.00	0.00	0.00	0.40			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
ML 109	I	650.07	1863.57	6.00	330.00	0.00	0.00	0.40			
ML 110	I	662.16	1852.73	6.00	114.00	0.00	0.00	0.40			
ML 111	I	670.05	1869.44	6.00	251.00	0.00	0.00	0.40			
ML 112	E	659.52	1883.25	6.00	335.00	0.00	0.00	0.40			
PL 113	I	619.89	1916.63	6.00	16.00	0.00	0.00	0.40			
PL 114	J	581.99	1946.30	6.00	254.00	0.00	0.00	0.40			
PL 115	J	603.12	1931.80	6.00	65.00	0.00	0.00	0.40			
PL 116	J	636.91	1925.85	6.00	256.00	0.00	0.00	0.40			
PL 117	J	670.39	1912.87	6.00	243.00	0.00	0.00	0.40			
PL 118	J	700.70	1895.25	6.00	73.00	0.00	0.00	0.40			
PL 119	J	730.97	1888.97	6.00	252.00	0.00	0.00	0.40			
PL 120	J	761.44	1871.66	6.00	69.00	0.00	0.00	0.40			
PL 121	J	791.79	1863.46	6.00	78.00	0.00	0.00	0.40			
ML 122	I	722.81	1831.09	6.00	204.00	0.00	0.00	0.40			
ML 123	I	731.49	1807.65	6.00	21.00	0.00	0.00	0.40			
ML 124	I	761.64	1839.40	6.00	20.00	0.00	0.00	0.40			
ML 125	I	771.71	1817.95	6.00	203.00	0.00	0.00	0.40			
ML 126	I	749.95	1822.17	6.00	291.00	0.00	0.00	0.40			
ML 127	H	759.97	1801.56	6.00	294.00	0.00	0.00	0.40			
ML 128	E	784.34	1808.10	6.00	108.00	0.00	0.00	0.40			
PL 129	J	792.52	1845.63	6.00	200.00	0.00	0.00	0.40			
PL 130	I	737.51	1876.05	6.00	117.00	0.00	0.00	0.40			
ML 131	I	780.33	1850.00	6.00	23.00	0.00	0.00	0.40			
PL 132	E	694.90	1834.42	6.00	115.00	0.00	0.00	0.40			
ML 133	I	669.45	1784.76	6.00	208.00	0.00	0.00	0.40			
PL 134	J	803.86	1873.34	6.00	157.00	0.00	0.00	0.40			
PL 135	G	804.83	1962.34	6.00	64.00	0.00	0.00	0.40			
PL 136	G	776.23	1976.68	6.00	61.00	0.00	0.00	0.40			
PL 137	G	747.69	1991.26	6.00	59.00	0.00	0.00	0.40			
PL 138	G	719.86	2007.01	6.00	60.00	0.00	0.00	0.40			
PL 139	G	704.78	2020.12	6.00	21.00	0.00	0.00	0.40			
PL 140	J	787.43	1966.10	6.00	67.00	0.00	0.00	0.40			
PL 141	J	756.17	1981.82	6.00	67.00	0.00	0.00	0.40			
PL 142	J	725.48	1998.60	6.00	57.00	0.00	0.00	0.40			
PL 143	J	702.26	2014.29	6.00	39.00	0.00	0.00	0.40			
PL 144	J	688.10	2027.41	6.00	67.00	0.00	0.00	0.40			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
PL 145	K	822.34	1791.47	6.00	29.00	0.00	0.00	0.40			
PL 146	K	816.44	1806.87	6.00	23.00	0.00	0.00	0.40			
PL 147	K	809.26	1825.82	6.00	24.00	0.00	0.00	0.40			
PL 148	K	802.41	1847.10	6.00	7.00	0.00	0.00	0.40			
PL 149	J	805.51	1811.02	6.00	186.00	0.00	0.00	0.40			
PL 150	J	811.42	1789.99	6.00	206.00	0.00	0.00	0.40			
ML 151	I	790.35	1826.22	6.00	23.00	0.00	0.00	0.40			
PL 152	J	818.79	1951.91	6.00	79.00	0.00	0.00	0.40			
PL 153	J	847.74	1944.79	6.00	85.00	0.00	0.00	0.40			
PL 154	J	847.52	1929.92	6.00	184.00	0.00	0.00	0.40			
PL 155	G	832.14	1953.01	6.00	75.00	0.00	0.00	0.40			
PL 156	G	860.22	1948.37	6.00	84.00	0.00	0.00	0.40			
PL 157	G	877.30	1942.24	6.00	55.00	0.00	0.00	0.40			
PL 158	G	807.09	1876.28	6.00	337.00	0.00	0.00	0.40			
PL 159	G	823.26	1895.69	6.00	307.00	0.00	0.00	0.40			
PL 160	G	852.81	1907.90	6.00	291.00	0.00	0.00	0.40			
PL 161	G	885.51	1922.78	6.00	155.00	0.00	0.00	0.40			
PL 162	G	892.81	1938.03	6.00	141.00	0.00	0.00	0.40			
PL 163	H	821.88	1867.12	6.00	289.00	0.00	0.00	0.40			
PL 164	F	820.22	1847.33	6.00	108.00	0.00	0.00	0.40			
ML 165	J	845.87	1863.19	6.00	290.00	0.00	0.00	0.40			
PL 166	J	829.41	1880.39	6.00	199.00	0.00	0.00	0.40			
PL 167	G	870.14	1915.67	6.00	309.00	0.00	0.00	0.40			
PL 168	J	839.94	1888.46	6.00	109.00	0.00	0.00	0.40			
PL 169	J	858.75	1891.75	6.00	113.00	0.00	0.00	0.40			
PL 170	F	880.42	1902.08	6.00	112.00	0.00	0.00	0.40			
PL 171	L	904.93	1955.49	6.00	289.00	0.00	0.00	0.40			
PL 172	L	932.21	1955.53	6.00	268.00	0.00	0.00	0.40			
PL 173	L	962.93	1944.90	6.00	90.00	0.00	0.00	0.40			
PL 174	L	990.99	1943.02	6.00	212.00	0.00	0.00	0.40			
PL 175	L	997.58	1927.34	6.00	189.00	0.00	0.00	0.40			
PL 176	L	1003.26	1905.59	6.00	210.00	0.00	0.00	0.40			
PL 177	F	835.66	1800.73	6.00	114.00	0.00	0.00	0.40			
PL 178	F	850.86	1806.89	6.00	116.00	0.00	0.00	0.40			
PL 179	H	854.51	1822.02	6.00	295.00	0.00	0.00	0.40			
ML 180	I	865.85	1838.85	6.00	119.00	0.00	0.00	0.40			



**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
ML 181	H	847.95	1821.13	6.00	25.00	0.00	0.00	0.40			
ML 182	I	882.50	1848.81	6.00	126.00	0.00	0.00	0.40			
ML 183	I	846.37	1842.87	6.00	23.00	0.00	0.00	0.40			
ML 184	I	865.73	1870.81	6.00	292.00	0.00	0.00	0.40			
PL 185	J	804.38	1891.78	6.00	329.00	0.00	0.00	0.40			
PL 186	J	812.55	1914.13	6.00	42.00	0.00	0.00	0.40			
PL 187	J	812.24	1941.06	6.00	173.00	0.00	0.00	0.40			
PL 188	E	866.80	1924.91	6.00	290.00	0.00	0.00	0.40			
PL 189	E	834.23	1912.11	6.00	291.00	0.00	0.00	0.40			
PL 190	I	902.65	1932.78	6.00	130.00	0.00	0.00	0.40			
PL 191	I	924.79	1943.51	6.00	268.00	0.00	0.00	0.40			
PL 192	I	949.07	1943.37	6.00	273.00	0.00	0.00	0.40			
ML 193	I	916.21	1920.84	6.00	22.00	0.00	0.00	0.40			
ML 194	J	927.96	1890.15	6.00	27.00	0.00	0.00	0.40			
ML 195	I	936.80	1866.85	6.00	29.00	0.00	0.00	0.40			
ML 196	I	950.94	1894.46	6.00	122.00	0.00	0.00	0.40			
PL 197	E	888.22	1900.02	6.00	21.00	0.00	0.00	0.40			
PL 198	E	898.39	1873.48	6.00	27.00	0.00	0.00	0.40			
PL 199	E	906.47	1853.22	6.00	20.00	0.00	0.00	0.40			
ML 200	I	919.76	1846.31	6.00	110.00	0.00	0.00	0.40			
ML 201	I	929.93	1905.36	6.00	85.00	0.00	0.00	0.40			
ML 202	I	949.86	1909.12	6.00	249.00	0.00	0.00	0.40			
ML 203	I	939.15	1916.24	6.00	269.00	0.00	0.00	0.40			
ML 204	H	949.26	1919.34	6.00	359.00	0.00	0.00	0.40			
ML 205	F	959.69	1929.69	6.00	176.00	0.00	0.00	0.40			
ML 206	I	962.21	1910.74	6.00	179.00	0.00	0.00	0.40			
PL 207	I	971.24	1938.62	6.00	91.00	0.00	0.00	0.40			
PL 208	H	986.29	1887.38	6.00	124.00	0.00	0.00	0.40			
PL 209	H	981.89	1905.09	6.00	303.00	0.00	0.00	0.40			
PL 210	F	971.57	1906.36	6.00	211.00	0.00	0.00	0.40			
PL 211	E	971.58	1886.13	6.00	37.00	0.00	0.00	0.40			
PL 212	H	917.29	1961.94	6.00	184.00	0.00	0.00	0.40			
PL 213	G	957.58	1959.17	6.00	358.00	0.00	0.00	0.40			
PL 214	G	875.09	1966.63	6.00	350.00	0.00	0.00	0.40			
PL 215	H	878.99	1882.77	6.00	19.00	0.00	0.00	0.40			
PL 216	H	884.63	1861.19	6.00	25.00	0.00	0.00	0.40			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
PL 217	H	892.78	1888.04	6.00	200.00	0.00	0.00	0.40			
PL 218	H	902.90	1861.84	6.00	202.00	0.00	0.00	0.40			
PL 219	G	704.61	2040.31	6.00	356.00	0.00	0.00	0.40			
PL 220	G	707.20	2075.20	6.00	357.00	0.00	0.00	0.40			
PL 221	G	714.27	2094.14	6.00	308.00	0.00	0.00	0.40			
PL 222	G	735.11	2093.64	6.00	242.00	0.00	0.00	0.40			
PL 223	G	763.50	2082.40	6.00	241.00	0.00	0.00	0.40			
PL 224	G	783.53	2069.76	6.00	245.00	0.00	0.00	0.40			
PL 225	G	801.13	2059.77	6.00	239.00	0.00	0.00	0.40			
PL 226	G	826.03	2047.18	6.00	80.00	0.00	0.00	0.40			
PL 227	G	857.70	2045.86	6.00	256.00	0.00	0.00	0.40			
PL 228	G	886.60	2037.46	6.00	251.00	0.00	0.00	0.40			
PL 229	G	916.60	2028.84	6.00	254.00	0.00	0.00	0.40			
PL 230	G	946.92	2019.87	6.00	257.00	0.00	0.00	0.40			
PL 231	G	969.40	2013.10	6.00	251.00	0.00	0.00	0.40			
PL 232	F	737.88	2022.93	6.00	352.00	0.00	0.00	0.40			
PL 233	F	737.48	2007.96	6.00	356.00	0.00	0.00	0.40			
PL 234	F	785.12	2018.95	6.00	242.00	0.00	0.00	0.40			
PL 235	E	767.27	2024.65	6.00	67.00	0.00	0.00	0.40			
PL 236	F	936.67	1984.95	6.00	268.00	0.00	0.00	0.40			
PL 237	F	957.25	1984.08	6.00	266.00	0.00	0.00	0.40			
ML 238	J	916.50	1980.03	6.00	266.00	0.00	0.00	0.40			
PL 239	J	967.73	1980.15	6.00	173.00	0.00	0.00	0.40			
PL 240	J	970.12	2002.83	6.00	169.00	0.00	0.00	0.40			
PL 241	E	792.16	2017.97	6.00	357.00	0.00	0.00	0.40			
PL 242	E	790.37	1996.50	6.00	358.00	0.00	0.00	0.40			
PL 243	E	801.56	2048.31	6.00	175.00	0.00	0.00	0.40			
ML 244	J	723.83	2059.78	6.00	262.00	0.00	0.00	0.40			
ML 245	I	735.28	2052.04	6.00	265.00	0.00	0.00	0.40			
ML 246	I	742.33	2041.48	6.00	357.00	0.00	0.00	0.40			
ML 247	I	752.77	2029.46	6.00	87.00	0.00	0.00	0.40			
ML 248	I	754.39	2046.73	6.00	262.00	0.00	0.00	0.40			
ML 249	I	765.64	2039.99	6.00	175.00	0.00	0.00	0.40			
ML 250	I	765.82	2061.22	6.00	173.00	0.00	0.00	0.40			
ML 251	J	807.58	1994.19	6.00	89.00	0.00	0.00	0.40			
ML 252	I	821.75	1997.58	6.00	81.00	0.00	0.00	0.40			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
ML 253	I	827.98	2016.58	6.00	352.00	0.00	0.00	0.40			
ML 254	I	830.71	2037.56	6.00	177.00	0.00	0.00	0.40			
ML 255	I	840.88	2011.35	6.00	255.00	0.00	0.00	0.40			
ML 256	I	841.84	1992.47	6.00	77.00	0.00	0.00	0.40			
ML 257	I	851.18	2000.82	6.00	170.00	0.00	0.00	0.40			
ML 258	I	842.19	2004.27	6.00	309.00	0.00	0.00	0.40			
ML 259	I	862.56	1987.69	6.00	87.00	0.00	0.00	0.40			
ML 260	I	870.74	2009.37	6.00	264.00	0.00	0.00	0.40			
PL 261	E	886.44	2017.42	6.00	175.00	0.00	0.00	0.40			
PL 262	J	877.09	1987.48	6.00	354.00	0.00	0.00	0.40			
ML 263	I	893.92	1996.30	6.00	268.00	0.00	0.00	0.40			
ML 264	I	917.39	1992.48	6.00	274.00	0.00	0.00	0.40			
ML 265	I	909.86	1986.80	6.00	3.00	0.00	0.00	0.40			
ML 266	I	934.11	2005.22	6.00	174.00	0.00	0.00	0.40			
ML 267	H	990.26	1991.80	6.00	72.00	0.00	0.00	0.40			
ML 268	H	1006.22	1986.17	6.00	72.00	0.00	0.00	0.40			
PL 269	G	991.91	2005.66	6.00	250.00	0.00	0.00	0.40			
PL 270	G	1012.37	1998.65	6.00	249.00	0.00	0.00	0.40			
PL 271	G	1033.94	1991.29	6.00	248.00	0.00	0.00	0.40			
PL 272	F	1045.32	1984.47	6.00	161.00	0.00	0.00	0.40			
PL 273	H	1027.38	1968.49	6.00	342.00	0.00	0.00	0.40			
PL 274	G	1041.50	1966.89	6.00	155.00	0.00	0.00	0.40			
PL 275	G	1042.93	2002.60	6.00	352.00	0.00	0.00	0.40			
PL 276	G	1047.22	2032.07	6.00	354.00	0.00	0.00	0.40			
PL 277	L	1055.12	2065.76	6.00	72.00	0.00	0.00	1.40			
PL 278	G	1078.46	2058.62	6.00	77.00	0.00	0.00	0.40			
PL 279	G	1102.90	2051.29	6.00	72.00	0.00	0.00	0.40			
PL 280	G	1123.07	2044.90	6.00	71.00	0.00	0.00	0.40			
PL 281	L	1138.72	2047.13	6.00	175.00	0.00	0.00	0.40			
PL 282	G	1141.60	2068.36	6.00	174.00	0.00	0.00	0.40			
PL 283	E	1156.85	2075.65	6.00	266.00	0.00	0.00	0.40			
PL 284	E	1188.69	2072.50	6.00	265.00	0.00	0.00	0.40			
PL 285	E	1220.54	2069.52	6.00	264.00	0.00	0.00	0.40			
ML 286	H	1002.37	1948.05	6.00	309.00	0.00	0.00	0.40			
ML 287	H	1004.68	1928.75	6.00	125.00	0.00	0.00	0.40			
ML 288	H	1033.27	1949.53	6.00	125.00	0.00	0.00	0.40			

**Layout Continued**

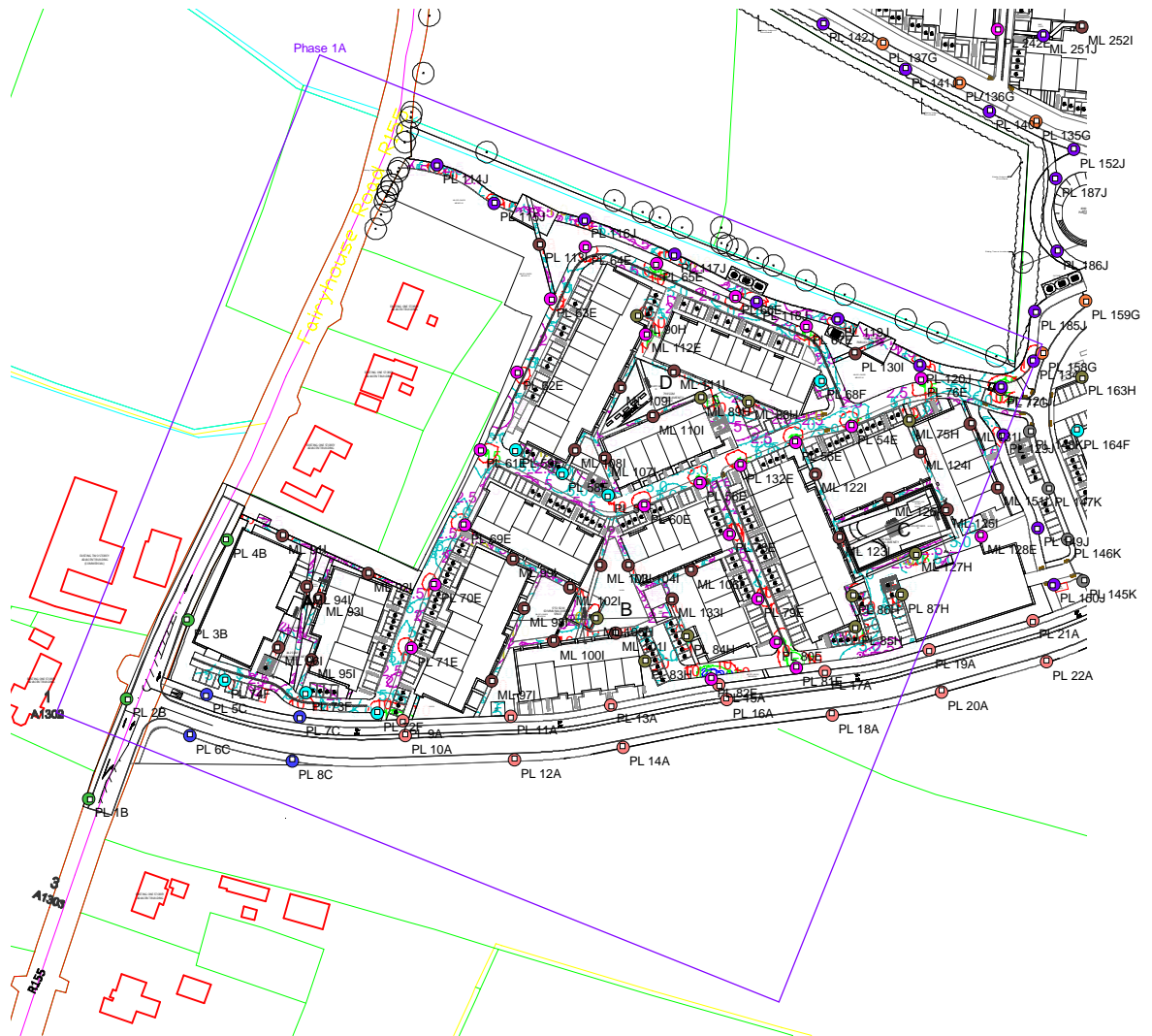
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
ML 289	H	1053.42	1988.14	6.00	86.00	0.00	0.00	0.40			
ML 290	H	1071.88	1985.93	6.00	85.00	0.00	0.00	0.40			
ML 291	H	1122.40	2031.63	6.00	357.00	0.00	0.00	0.40			
PL 292	H	1135.74	2022.11	6.00	175.00	0.00	0.00	0.40			
PL 293	E	1132.05	1992.70	6.00	170.00	0.00	0.00	0.40			
PL 294	J	1000.43	1956.14	6.00	310.00	0.00	0.00	0.40			
PL 295	J	1021.51	1957.72	6.00	81.00	0.00	0.00	0.40			
PL 296	J	1054.65	1962.96	6.00	281.00	0.00	0.00	0.40			
ML 297	I	1058.16	1950.36	6.00	34.00	0.00	0.00	0.40			
PL 298	J	1078.31	1956.70	6.00	85.00	0.00	0.00	0.40			
PL 299	J	1110.41	1973.81	6.00	292.00	0.00	0.00	0.40			
ML 300	I	1091.62	1982.27	6.00	355.00	0.00	0.00	0.40			
ML 301	I	1078.18	2009.97	6.00	351.00	0.00	0.00	0.40			
ML 302	I	1095.57	2006.67	6.00	174.00	0.00	0.00	0.40			
ML 303	I	1063.19	2030.47	6.00	263.00	0.00	0.00	0.40			
ML 304	I	1075.45	2024.10	6.00	268.00	0.00	0.00	0.40			
ML 305	I	1097.89	2017.53	6.00	255.00	0.00	0.00	0.40			
ML 306	J	1112.64	2021.42	6.00	264.00	0.00	0.00	0.40			
ML 307	I	1169.04	2053.00	6.00	352.00	0.00	0.00	0.40			
ML 308	I	1165.97	2022.29	6.00	353.00	0.00	0.00	0.40			
ML 309	J	1174.04	2008.34	6.00	125.00	0.00	0.00	0.40			
ML 310	I	1201.03	2024.68	6.00	124.00	0.00	0.00	0.40			
ML 311	I	1183.30	2033.83	6.00	270.00	0.00	0.00	0.40			
ML 312	J	1176.03	2026.49	6.00	249.00	0.00	0.00	0.40			
PL 313	I	1052.84	2052.26	6.00	174.00	0.00	0.00	0.40			
ML 314	I	1046.95	1965.64	6.00	351.00	0.00	0.00	0.40			
ML 315	I	1058.81	1938.67	6.00	133.00	0.00	0.00	0.40			
PL 316	J	1145.16	1989.94	6.00	119.00	0.00	0.00	0.40			
PL 317	A	1284.89	2030.26	8.00	303.00	0.00	0.00	0.50			
PL 318	A	1291.81	2015.13	8.00	123.00	0.00	0.00	0.50			
PL 319	A	1319.14	2052.15	8.00	301.00	0.00	0.00	0.50			
PL 320	A	1326.85	2037.53	8.00	125.00	0.00	0.00	0.50			
PL 321	A	1349.33	2071.89	8.00	306.00	0.00	0.00	0.50			
PL 322	A	1360.25	2059.67	8.00	132.00	0.00	0.00	0.50			
PL 323	A	1372.14	2097.59	8.00	327.00	0.00	0.00	0.50			
PL 324	A	1386.52	2089.66	8.00	149.00	0.00	0.00	0.50			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
PL 325	A	1386.01	2131.45	8.00	339.00	0.00	0.00	0.50			
PL 326	A	1401.97	2126.53	8.00	159.00	0.00	0.00	0.50			
PL 327	A	1406.39	2165.69	8.00	312.00	0.00	0.00	0.50			
PL 328	A	1418.87	2154.44	8.00	138.00	0.00	0.00	0.50			
PL 329	J	1171.12	1992.24	6.00	93.00	0.00	0.00	0.40			
PL 330	J	1204.94	2008.70	6.00	307.00	0.00	0.00	0.40			
PL 331	J	1236.09	2020.93	6.00	264.00	0.00	0.00	0.40			
PL 332	I	1230.45	2018.39	6.00	202.00	0.00	0.00	0.40			
ML 333	I	1210.55	2031.30	6.00	264.00	0.00	0.00	0.40			

# Horizontal Illuminance (lux)

Phase 1A

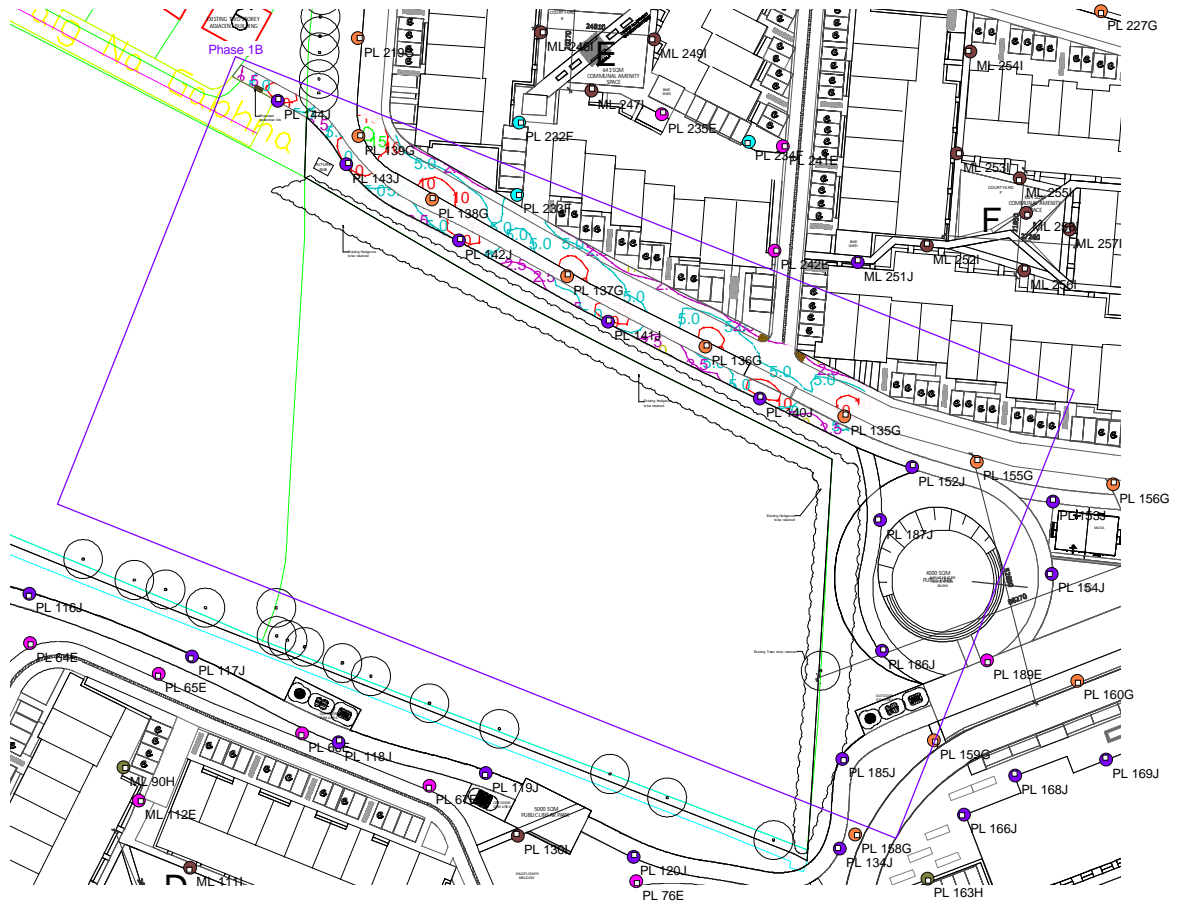


## Results

Eav	6.28
Emin	1.23
Emax	24.82
Emin/Emax	0.05
Emin/Eav	0.20

# Horizontal Illuminance (lux)

Phase 1B

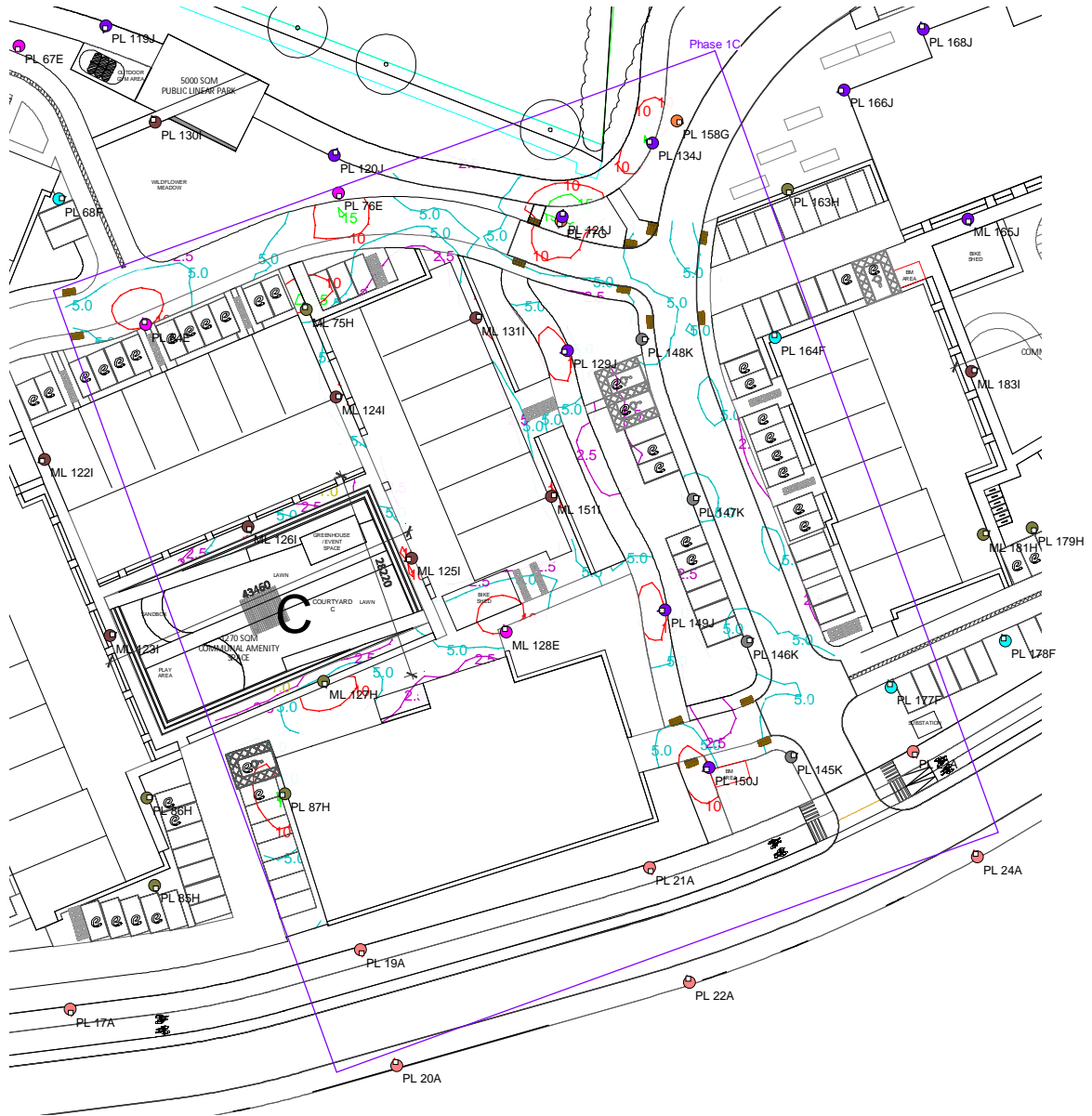


## Results

Eav	6.34
Emin	1.41
Emax	15.64
Emin/Emax	0.09
Emin/Eav	0.22

## Horizontal Illuminance (lux)

Phase 1C



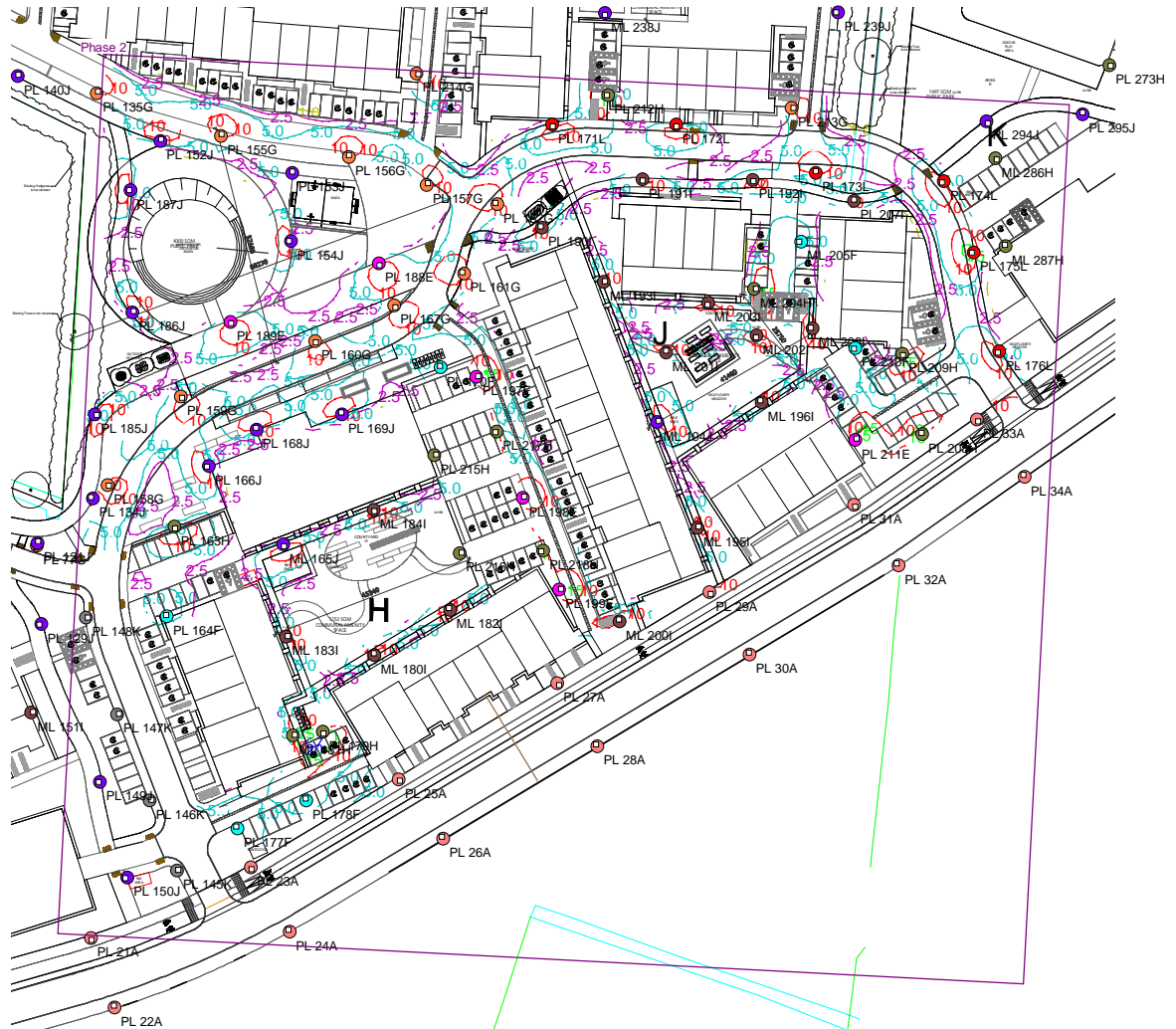
### Results

Eav	5.81
Emin	1.47
Emax	16.25
Emin/Emax	0.09
Emin/Eav	0.25



# Horizontal Illuminance (lux)

Phase 2

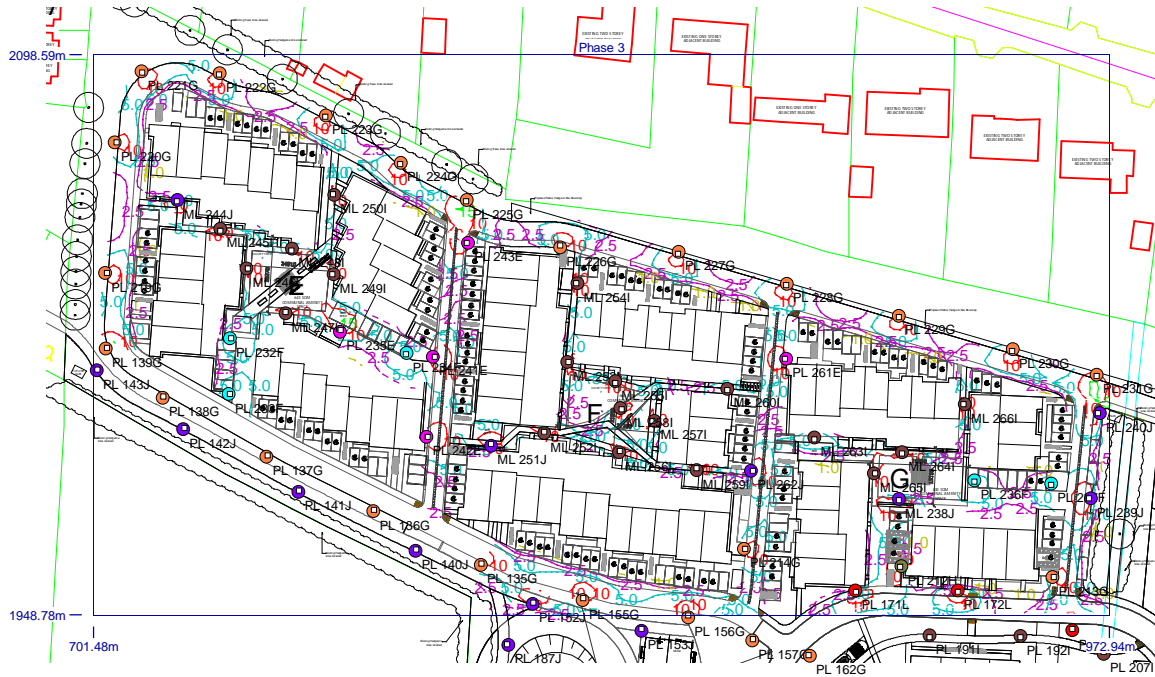


## Results

Eav	6.18
Emin	1.25
E <sub>max</sub>	21.24
E <sub>min</sub> /E <sub>max</sub>	0.06
E <sub>min</sub> /E <sub>av</sub>	0.20

# Horizontal Illuminance (lux)

Phase 3

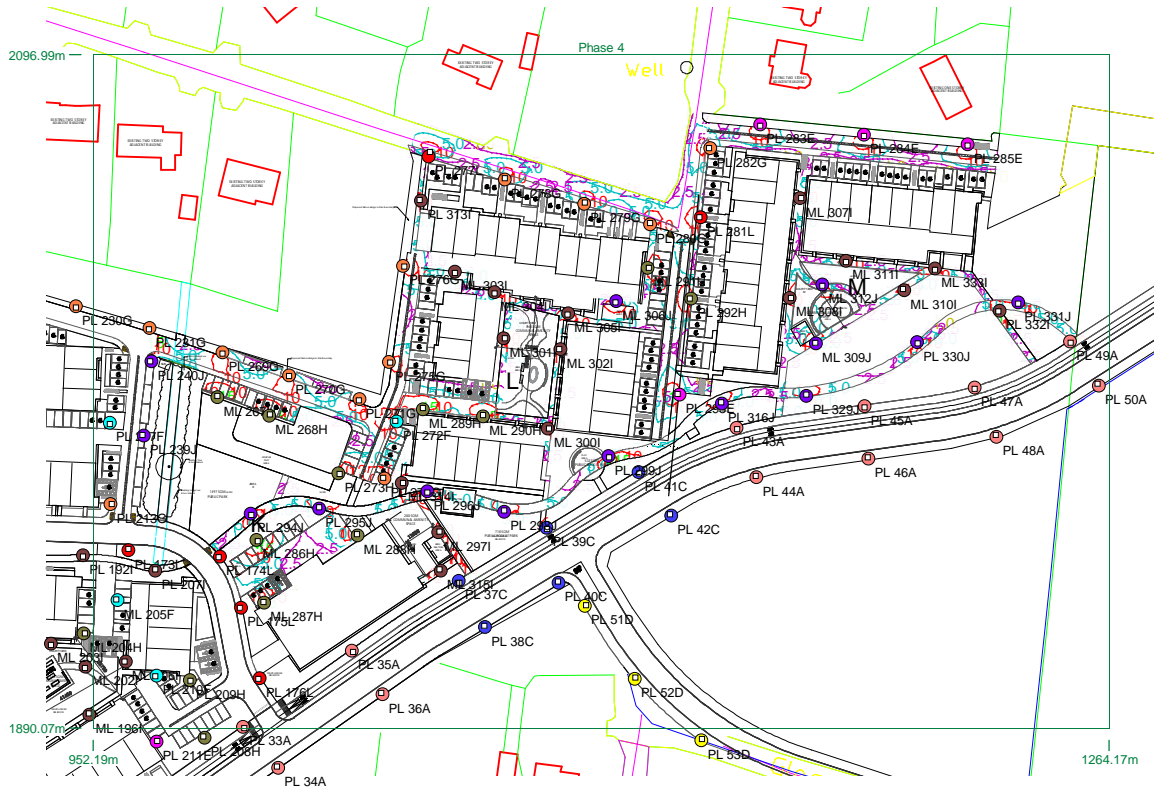


## Results

Eav	5.78
Emin	1.14
Emax	15.77
Emin/Emax	0.07
Emin/Eav	0.20

# Horizontal Illuminance (lux)

Phase 4



## Results

Eav	6.32
Emin	1.25
Emax	16.39
Emin/Emax	0.08
Emin/Eav	0.20

# Horizontal Illuminance (lux)

## Phase 2 Carpark



### Results

Eav	6.80
Emin	1.80
E <sub>max</sub>	17.22
E <sub>min</sub> /E <sub>max</sub>	0.10
E <sub>min</sub> /E <sub>av</sub>	0.27