

DATE: 14/06/2023
DESIGNER: James Duffin BA (Hons) IEng MILP
PROJECT No: EVO20010364-AC-001-B
PROJECT NAME: Lower Acre Spine Road, OHH

ENERVEO

Lower Acre Spine Road
One Horton Heath

Spine Road Lighting Class - P3
Remote Footpaths - P5
Footpath Link to Segment 3 - P4

Lantern - Urbis Schreder Axia 3.1
Colour Temperature - 3000K
Maintenance Factor - 0.85

Outdoor Lighting Report

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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 - Spine Road - P3	448839.80	116276.85	187.00	213.00	1.50	1.50
2	Grid 2 - Footpath (Section...	448851.77	116297.44	27.00	15.00	1.00	1.00
3	Grid 3 - Footpath (Section...	448887.29	116302.45	81.00	36.00	1.00	1.00
4	Grid 4 - Vertical Plots 30...	448896.07	116314.51	36.88	5.00	1.48	1.25
5	Grid 5 - Vertical plot 2...	448923.09	116301.58	38.08	5.00	1.46	1.25
6	Grid 6 - Vertical Block ...	448945.63	116307.96	14.41	5.00	1.44	1.25
7	Grid 7 - Vertical Plots 30...	448938.88	116328.31	27.32	5.00	1.44	1.25
8	Grid 8 - Vertical Plots 28...	448973.59	116348.47	17.64	5.00	1.47	1.25
9	Grid 9 - Vertical Plots 24...	448965.92	116328.73	16.57	5.00	1.38	1.25
10	Grid 10 - Vertical Plots 2...	448984.65	116378.07	11.68	5.00	1.46	1.25
11	Grid 11 - Vertical Plots 2...	448979.26	116366.46	11.81	5.00	1.48	1.25
12	Grid 12 - Footpath - P5	448950.05	116360.18	20.00	106.00	1.00	1.00
13	Grid 13 - Vertical Plots 3...	448954.46	116364.92	39.21	5.00	1.45	1.25
14	Grid 14	449000.19	116427.32	11.12	5.00	1.39	1.25
15	Grid 15 - Vertical Plots 2...	448851.70	116315.99	25.17	5.00	1.01	0.20
16	Grid 16 - Vertical Plots 22...	448870.97	116280.12	12.57	5.00	1.40	1.25
17	Grid 17 - Road S1 - P5	448950.30	116288.20	18.00	30.00	1.50	1.50

Luminaires

Luminaire A Data



Supplier	Urbis Schreder
Type	AXIA 3.1 5267 Integrated lenses Rear louvers 16 OSLO SQUARE
Lamp(s)	16 OSLO SQUARE GIANT@700mA WW 730 230V 00-53-397
LampFlux(klm)/Colour	3.14 WW 3000K/70
File Name	AXIA 3.1 5267 16 OSLO SQUARE GIANT 700mA WW 730 35.6W 457672 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1281.8, 174.5, 0.0
No. in Project	7

Luminaire B Data



Supplier	Urbis Schreder
Type	AXIA 3.1 5270 Integrated lenses - 16 OSLO SQUARE GIANT@480m
Lamp(s)	16 OSLO SQUARE GIANT@480mA WW 730 230V 00-56-615
LampFlux(klm)/Colour	3.23 WW 3000K/70
File Name	AXIA 3.1 5270 16 OSLO SQUARE GIANT 480mA WW 730 25.1W 429112 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1022.0, 99.2, 0.0
No. in Project	4

Luminaire C Data



Supplier	Urbis Schreder
Type	AXIA 3.1 5296 Integrated lenses Rear louvers 8 OSLO SQUARE G
Lamp(s)	8 OSLO SQUARE GIANT@300mA WW 730 230V 01-37-041
LampFlux(klm)/Colour	0.82 WW 3000K/70
File Name	AXIA 3.1 5296 8 OSLO SQUARE GIANT 300mA WW 730 8.4W 457602 Integrated ...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1285.9, 28.2, 0.0
No. in Project	5

Luminaire V Data



Supplier	Urbis Schreder
Type	AXIA 3.1 5295 Integrated lenses Rear louvers 8 OSLO SQUARE G
Lamp(s)	8 OSLO SQUARE GIANT@850mA WW 730 230V 00-53-394
LampFlux(klm)/Colour	1.94 WW 3000K/70
File Name	AXIA 3.1 5295 8 OSLO SQUARE GIANT 850mA WW 730 22.8W 457592 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	842.8, 11.9, 0.0
No. in Project	3

Luminaires**Luminaire W Data**

Supplier	Urbis Schreder
Type	AXIA 3.2 5279 Integrated lenses - 24 OSLO N SQUARE GIANT@1000
Lamp(s)	24 OSLO N SQUARE GIANT@1000mA W W 730 230V 00-49-490
LampFlux(klm)/Colour	8.49 WW 3000K/70
File Name	AXIA 3.2 5279 24 OSLO N SQUARE GIAN T 1000mA WW 730 76W 430122 Integrat...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	758.9, 149.6, 0.0
No. in Project	1

Luminaire X Data

Supplier	Urbis Schreder
Type	AXIA 3.1 5266 Integrated lenses Rear louv ers 8 OSLO N SQUARE G
Lamp(s)	8 OSLO N SQUARE GIANT@700mA WW 730 230V 01-37-041
LampFlux(klm)/Colour	1.74 WW 3000K/70
File Name	AXIA 3.1 5266 8 OSLO N SQUARE GIANT 700mA WW 730 19.4W 457662 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1216.3, 169.4, 0.0
No. in Project	2

Luminaire Y Data

Supplier	Urbis Schreder
Type	AXIA 3.2 5267 Integrated lenses - 32 OSLO N SQUARE GIANT@800m
Lamp(s)	32 OSLO N SQUARE GIANT@800mA WW 730 230V 00-49-490
LampFlux(klm)/Colour	9.61 WW 3000K/70
File Name	AXIA 3.2 5267 32 OSLO N SQUARE GIAN T 800mA WW 730 78W 430092 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1001.2, 151.3, 0.0
No. in Project	1

Luminaire Z Data

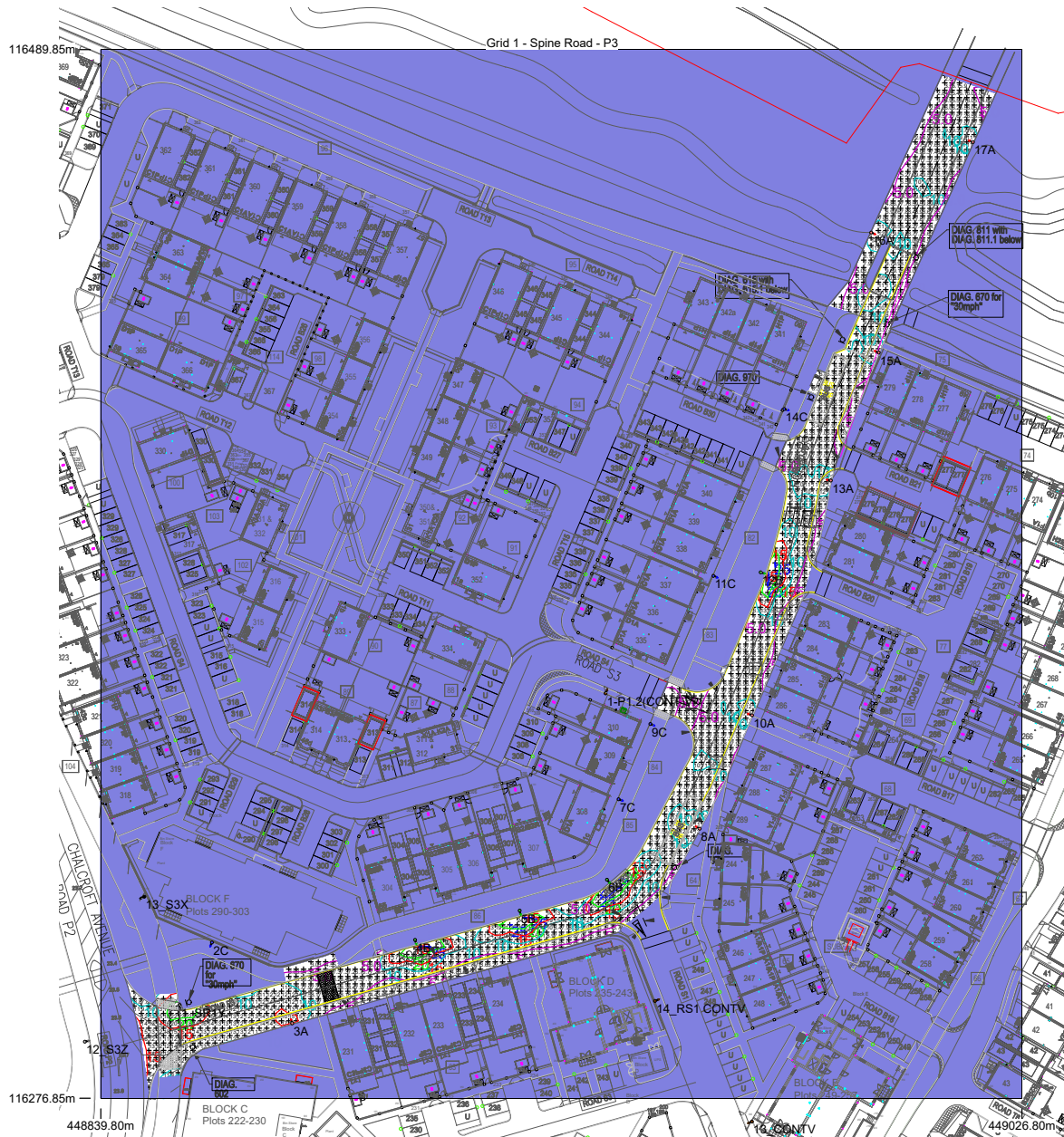
Supplier	Urbis Schreder
Type	AXIA 3.2 5295 Integrated lenses Rear louv ers 32 OSLO N SQUARE
Lamp(s)	32 OSLO N SQUARE GIANT@800mA WW 730 230V 01-50-748
LampFlux(klm)/Colour	7.96 WW 3000K/70
File Name	AXIA 3.2 5295 32 OSLO N SQUARE GIAN T 800mA WW 730 78W 479062 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	723.7, 21.7, 0.0
No. in Project	2

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
10_S3	Z	448847.56	116261.65	8.00	164.00	0.00	0.00	0.40			
11_S3	X	448825.24	116268.39	6.00	339.00	0.00	0.00	0.40			
12_S3	Z	448836.56	116288.36	8.00	13.00	0.00	0.00	0.40			
13_S3	X	448848.62	116317.82	6.00	204.00	0.00	0.00	0.40			
14_S3	W	448829.79	116309.23	8.00	14.00	0.00	0.00	0.40			
1_SR1	Y	448855.80	116295.81	8.00	279.00	0.00	0.00	0.40			
3	A	448878.64	116292.06	6.00	106.00	0.00	0.00	0.40			
4	B	448903.59	116309.03	6.00	287.00	0.00	0.00	0.40			
5	B	448924.82	116314.98	6.00	284.00	0.00	0.00	0.40			
6	B	448942.55	116321.25	6.00	310.00	0.00	0.00	0.40			
8	A	448961.35	116331.62	6.00	150.00	0.00	0.00	0.40			
10	A	448971.99	116354.64	6.00	159.00	0.00	0.00	0.40			
12	B	448973.73	116383.68	6.00	344.00	0.00	0.00	0.40			
13	A	448988.00	116402.32	6.00	168.00	0.00	0.00	0.40			
15	A	448997.71	116428.32	6.00	158.00	0.00	0.00	0.40			
16	A	448996.17	116452.69	6.00	337.00	0.00	0.00	0.40			
17	A	449016.83	116471.05	6.00	156.00	0.00	0.00	0.40			
7	C	448944.90	116337.59	6.00	341.00	0.00	0.00	0.40			
9	C	448951.34	116352.87	6.00	339.00	0.00	0.00	0.40			
11	C	448964.16	116382.96	6.00	336.00	0.00	0.00	0.40			
14	C	448978.53	116416.85	6.00	344.00	0.00	0.00	0.40			
2	C	448862.36	116308.51	6.00	246.00	0.00	0.00	0.40			
1-P1.2(CONT)	V	448942.25	116359.10	6.00	66.00	0.00	0.00	0.40			
14_RS1 CONT	V	448952.30	116296.63	6.00	23.00	0.00	0.00	0.40			
13_CONT	V	448971.98	116272.13	6.00	201.00	0.00	0.00	0.40			

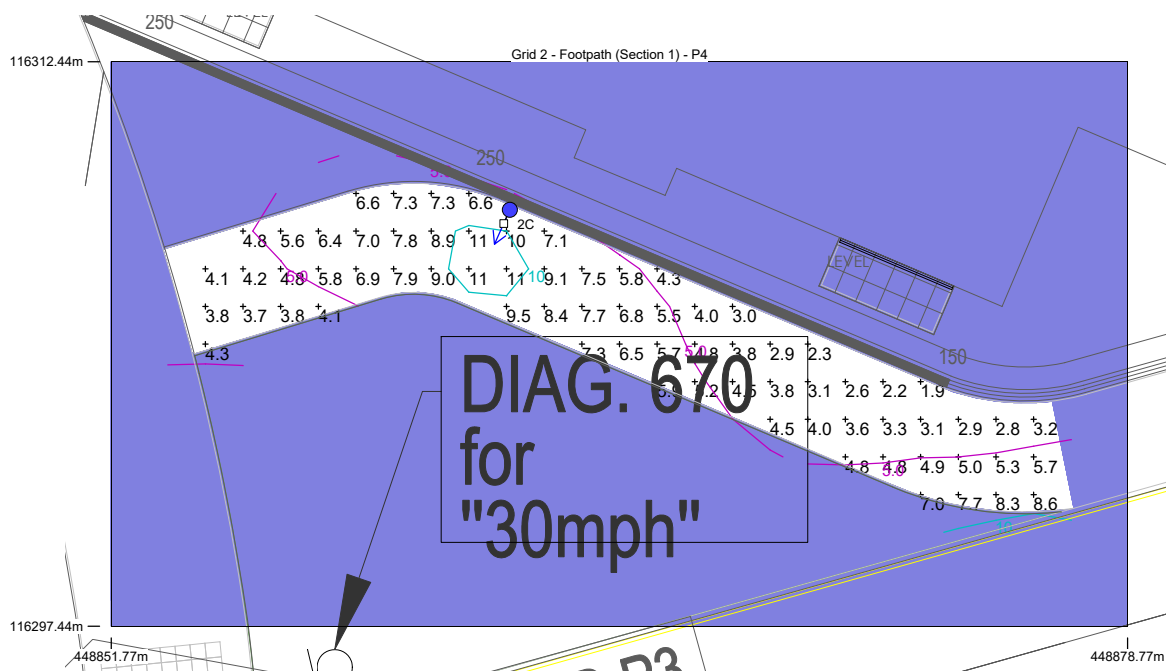
Horizontal Illuminance (lux)

Grid 1 - Spine Road - P3



Horizontal Illuminance (lux)

Grid 2 - Footpath (Section 1) - P4

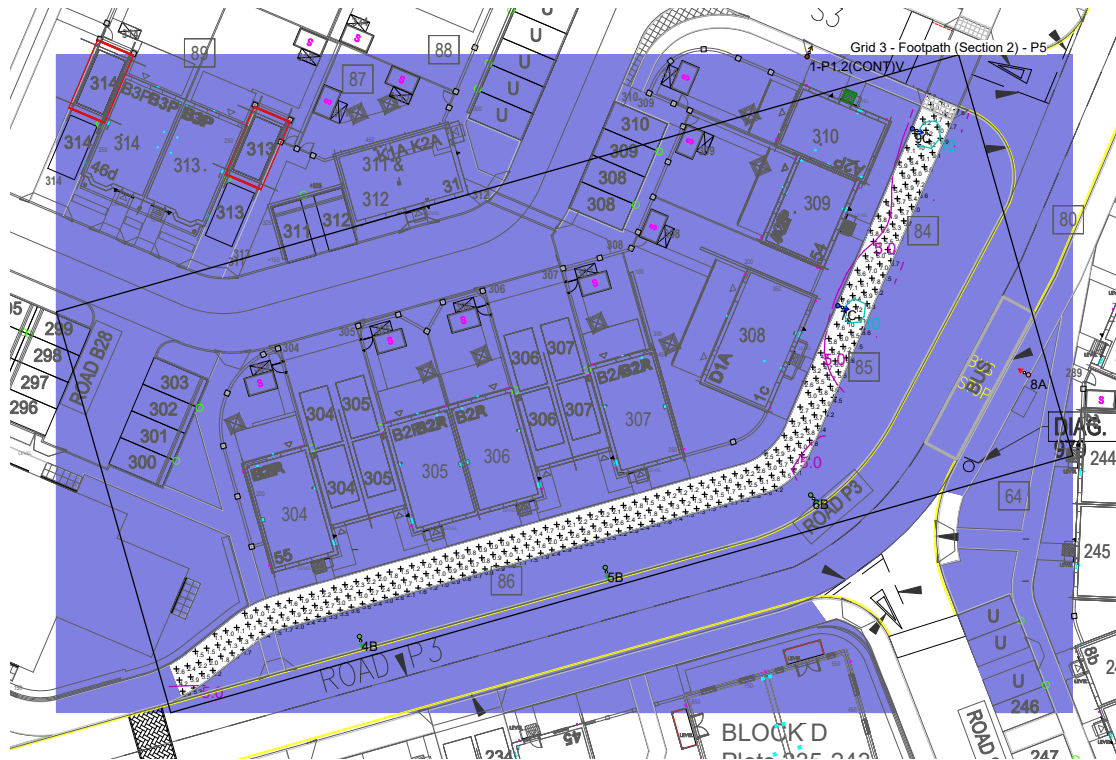


Results

Eav	5.70
Emin	1.94
Emax	11.33
Emin/Emax	0.17
Emin/Eav	0.34

Horizontal Illuminance (lux)

Grid 3 - Footpath (Section 2) - P5



Results

Eav	3.65
Emin	0.73
Emax	11.97
Emin/Emax	0.06
Emin/Eav	0.20

Illuminance (lux)

Grid 4 - Vertical Plots 304-307

0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
0.4	0.5	0.5	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.5	0.4	0.4	0.3	0.3
0.8	1.1	1.3	1.3	1.4	1.3	1.1	0.8	0.7	0.6	0.5	0.5	0.6	0.6	0.7	0.9	1.1	1.3	1.3	1.3	1.2	1.0	0.8	0.6	0.5
1.3	1.6	1.8	2.0	2.0	1.8	1.5	1.2	1.0	0.8	0.7	0.7	0.7	0.8	1.0	1.3	1.5	1.8	1.9	1.8	1.7	1.4	1.2	0.9	0.8

Results

Eav	0.71
Emin	0.05
Emax	1.98
Emin/Emax	0.03
Emin/Eav	0.07

Illuminance (lux)

Grid 5 - Vertical plot 231-234

0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	
0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.5	
0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.7
0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.9	1.1

Results

Eav	0.37
Emin	0.10
E _{max}	1.15
Emin/E _{max}	0.09
Emin/Eav	0.27

Illuminance (lux)

Grid 6 - Vertical Block D

0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.5	0.5
0.6	0.6	0.6	0.6	0.6	0.9	1.5	1.5	1.5	1.1
1.2	1.3	1.4	1.6	1.9	2.8	4.0	5.2	5.3	4.1

Results

Eav	1.10
Emin	0.12
E _{max}	5.33
Emin/E _{max}	0.02
Emin/Eav	0.11

Illuminance (lux)

Grid 7 - Vertical Plots 308-310

0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.9	0.5	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.6
0.3	0.2	0.2	0.2	0.2	0.3	0.5	0.8	0.5	0.3	0.2	0.3	0.6	0.5	0.3	0.2	0.2	0.4	0.5
0.8	0.5	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.4
1.1	0.8	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5

Results

Eav	0.39
Emin	0.06
Emax	1.13
Emin/Emax	0.06
Emin/Eav	0.16

Illuminance (lux)

Grid 8 - Vertical Plots 287-289

0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4
0.4	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.5	0.6
0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.7	0.9

Results

Eav	0.24
Emin	0.07
E _{max}	0.88
Emin/E _{max}	0.08
Emin/Eav	0.29

Illuminance (lux)

Grid 9 - Vertical Plots 244-245

0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.6	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.2	0.7	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Results

Eav	0.17
Emin	0.04
E _{max}	1.17
E _{min} /E _{max}	0.03
E _{min} /E _{av}	0.23

Illuminance (lux)

Grid 10 - Vertical Plots 283-284

0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1
0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2
0.6	0.6	0.8	0.8	0.7	0.7	0.6	0.6

Results

Eav	0.34
Emin	0.06
Emax	0.82
Emin/Emax	0.07
Emin/Eav	0.17

Illuminance (lux)

Grid 11 - Vertical Plots 285-286

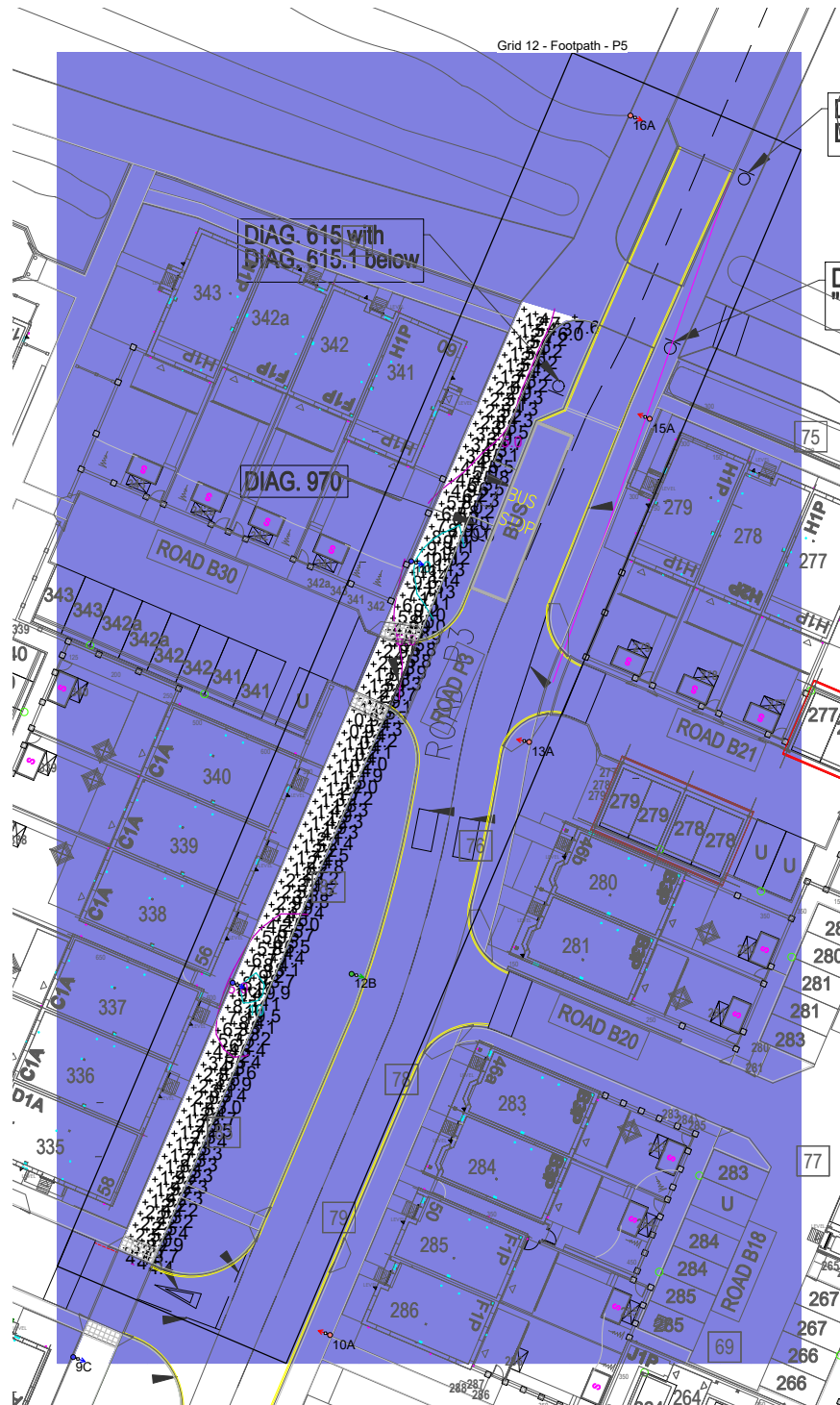
0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.9
0.1	0.1	0.1	0.2	0.2	0.4	0.6	1.2
0.2	0.2	0.2	0.3	0.3	0.5	0.7	1.2
1.0	1.2	1.4	1.1	0.8	0.8	0.8	0.9

Results

Eav	0.52
Emin	0.05
E _{max}	1.40
Emin/E _{max}	0.04
Emin/Eav	0.10

Horizontal Illuminance (lux)

Grid 12 - Footpath - P5



Results

Eav	4.50
Emin	0.92
E _{max}	14.31
Emin/E _{max}	0.06
Emin/Eav	0.20

Illuminance (lux)

Grid 13 - Vertical Plots 335-340

0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.7	0.8	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.3	0.4	0.6	0.6	0.4	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2
0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.6	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.4	0.3	0.3
0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.7	0.6	0.6	0.5	0.5

Results

Eav	0.33
Emin	0.05
E _{max}	0.90
Emin/E _{max}	0.05
Emin/Eav	0.14

Illuminance (lux)

Grid 14

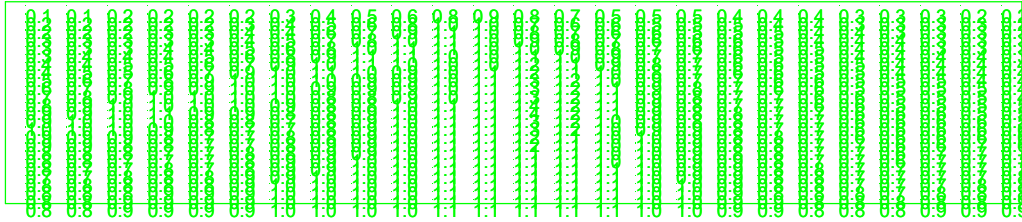
1.0	0.8	0.5	0.3	0.2	0.1	0.1	0.1
1.9	1.3	0.7	0.5	0.3	0.2	0.1	0.1
1.6	1.3	0.9	0.5	0.3	0.2	0.2	0.1
1.5	1.2	0.9	0.7	0.5	0.3	0.3	0.2

Results

Eav	0.58
Emin	0.05
E _{max}	1.90
Emin/E _{max}	0.03
Emin/Eav	0.09

Illuminance (lux)

Grid 15 - Vertical Plots 290-303

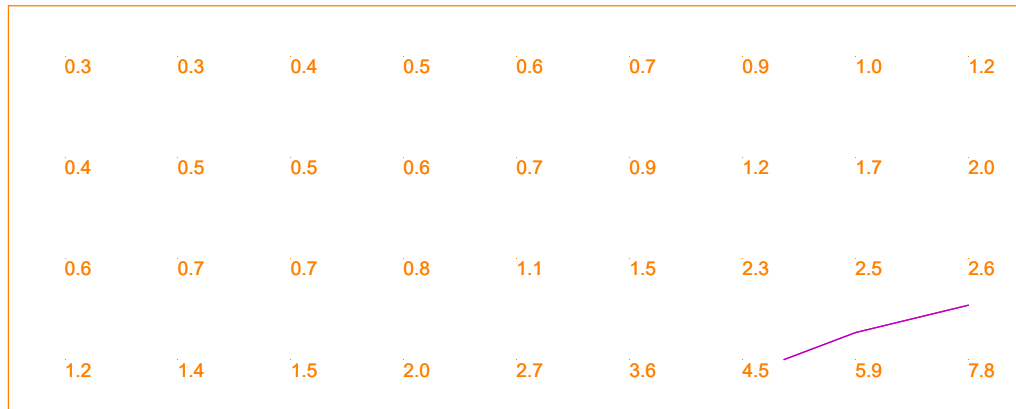


Results

Eav	0.77
Emin	0.14
Emax	1.39
Emin/Emax	0.10
Emin/Eav	0.18

Illuminance (lux)

Grid 16 - Verical Plots 222-230

**Results**

Eav	1.60
Emin	0.26
Emax	7.84
Emin/Emax	0.03
Emin/Eav	0.16