

**DATE:** 14 January 2025  
**DESIGNER:** Mark Kenny Lighting Consultancy Ltd  
**PROJECT No:** MKL060  
**PROJECT NAME:** Redrow Homes Development - Hook Meadow, Westergate



Spine Road Lighting Classification: P4 (BS 5489-1 2020, Table A.5)

Minimum maintained average illuminance (Eav): >5.00 <7.50 lux

Minimum illuminance (Emin): >1.00 lux

Lighting Uniformity (Emin/Eav): >0.20 (20%)

N.B - Areas lit with low level bollard lighting does not conform to standards as laid out in BS 5489-1 2020, Table A.5

Lighting Design - Revision R5

Base Drawing File Title - Site Layout 19 Stripped Back.dwg

## **Outdoor Lighting Report**

## 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    | 493675.01 | 104758.27 | 138.00    | 34.50     | 1.50       | 1.50       |
| 2  | Grid 2    | 493631.84 | 104824.33 | 66.00     | 21.00     | 1.50       | 1.50       |
| 3  | Grid 3    | 493476.20 | 104803.05 | 161.58    | 34.50     | 1.50       | 1.50       |
| 4  | Grid 4    | 493679.77 | 104784.02 | 67.50     | 27.00     | 1.50       | 1.50       |
| 5  | Grid 5    | 493566.09 | 104825.17 | 136.50    | 67.50     | 1.50       | 1.50       |
| 6  | Grid 6    | 493531.79 | 104826.76 | 27.00     | 65.97     | 1.50       | 1.50       |
| 7  | Grid 7    | 493469.49 | 104831.50 | 34.50     | 57.00     | 1.50       | 1.50       |
| 8  | Grid 8    | 493471.88 | 104763.01 | 21.00     | 43.50     | 1.50       | 1.50       |
| 9  | Grid 9    | 493534.75 | 104763.11 | 24.00     | 58.50     | 1.50       | 1.50       |
| 10 | Grid 10   | 493594.75 | 104762.97 | 22.50     | 58.50     | 1.50       | 1.50       |
| 11 | Grid 11   | 493625.03 | 104764.96 | 37.50     | 46.50     | 1.50       | 1.50       |
| 12 | Grid 12   | 493358.31 | 104722.88 | 473.92    | 209.92    | 1.90       | 1.50       |

### Luminaires



#### Luminaire A Data

|                      |                                                                  |
|----------------------|------------------------------------------------------------------|
| Supplier             | D W Windsor                                                      |
| Type                 | KIRIUM PRO MINI 16LED 3k A1 400mA UM<br>SUG 42 0018 0000 100     |
| Lamp(s)              | 16 x 3k LED                                                      |
| Lamp Flux (klm)      | 2.76                                                             |
| File Name            | KIRIUM PRO MINI 16LED 3k A1_400mA U<br>MSUG 42 0018 0000 100.ies |
| Maintenance Factor   | 0.83                                                             |
| Imax70,80,90(cd/klm) | 741.1, 276.2, 0.0                                                |
| No. in Project       | 13                                                               |

#### Luminaire B Data

|                      |                      |
|----------------------|----------------------|
| Supplier             |                      |
| Type                 | PM1 WW               |
| Lamp(s)              | 9 x LUXEON Tx 3K LED |
| Lamp Flux (klm)      | 1.20                 |
| File Name            | PM1 WW N V2.ies      |
| Maintenance Factor   | 0.83                 |
| Imax70,80,90(cd/klm) | 190.3, 155.7, 117.6  |
| No. in Project       | 36                   |

### Layout

| ID | Type | X         | Y         | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|----|------|-----------|-----------|--------|--------|------|------|-----------|----------|----------|----------|
| 1  | A    | 493693.21 | 104780.62 | 6.00   | 254.00 | 0.00 | 0.00 | 0.30      |          |          |          |
| 2  | A    | 493723.99 | 104780.86 | 6.00   | 269.00 | 0.00 | 0.00 | 0.30      |          |          |          |
| 3  | A    | 493755.93 | 104778.63 | 6.00   | 268.00 | 0.00 | 0.00 | 0.30      |          |          |          |
| 4  | A    | 493789.94 | 104779.68 | 6.00   | 273.00 | 0.00 | 0.00 | 0.30      |          |          |          |
| 5  | A    | 493664.57 | 104793.54 | 6.00   | 35.00  | 0.00 | 0.00 | 0.30      |          |          |          |
| 6  | A    | 493650.54 | 104822.18 | 6.00   | 238.00 | 0.00 | 0.00 | 0.30      |          |          |          |
| 7  | A    | 493618.91 | 104826.61 | 6.00   | 267.00 | 0.00 | 0.00 | 0.30      |          |          |          |
| 8  | A    | 493580.49 | 104819.08 | 6.00   | 90.00  | 0.00 | 0.00 | 0.30      |          |          |          |
| 9  | A    | 493511.65 | 104814.24 | 6.00   | 88.00  | 0.00 | 0.00 | 0.30      |          |          |          |

### Layout Continued

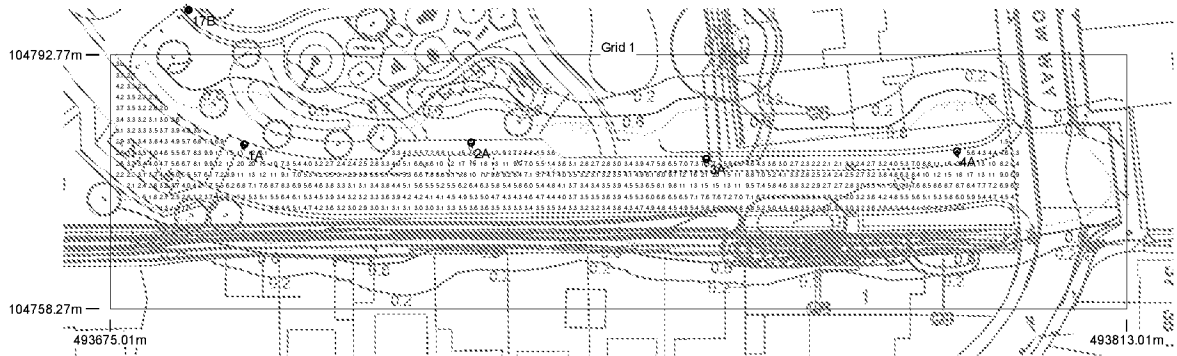
| ID | Type | X         | Y         | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|----|------|-----------|-----------|--------|--------|------|------|-----------|----------|----------|----------|
| 10 | A    | 493551.33 | 104818.34 | 6.00   | 97.00  | 0.00 | 0.00 | 0.30      |          |          |          |
| 11 | A    | 493481.06 | 104820.92 | 6.00   | 358.00 | 0.00 | 0.00 | 0.30      |          |          |          |
| 12 | B    | 493542.15 | 104832.76 | 1.00   | 358.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 13 | B    | 493488.08 | 104801.58 | 1.00   | 178.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 14 | B    | 493487.51 | 104779.78 | 1.00   | 179.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 15 | B    | 493487.15 | 104767.81 | 1.00   | 179.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 16 | B    | 493715.35 | 104822.44 | 1.00   | 127.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 17 | B    | 493685.64 | 104798.86 | 1.00   | 130.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 18 | B    | 493696.26 | 104807.32 | 1.00   | 132.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 19 | B    | 493705.78 | 104814.89 | 1.00   | 128.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 20 | B    | 493549.33 | 104848.62 | 1.00   | 182.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 21 | B    | 493544.49 | 104863.43 | 1.00   | 0.00   | 0.00 | 0.00 | 0.00      |          |          |          |
| 22 | B    | 493544.43 | 104876.68 | 1.00   | 359.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 23 | B    | 493489.91 | 104841.31 | 1.00   | 177.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 24 | B    | 493481.87 | 104855.64 | 1.00   | 358.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 25 | B    | 493490.29 | 104869.70 | 1.00   | 180.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 26 | B    | 493548.94 | 104768.70 | 1.00   | 184.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 27 | B    | 493540.84 | 104787.41 | 1.00   | 0.00   | 0.00 | 0.00 | 0.00      |          |          |          |
| 28 | B    | 493549.37 | 104815.16 | 1.00   | 179.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 29 | B    | 493549.40 | 104801.88 | 1.00   | 180.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 30 | B    | 493610.23 | 104769.16 | 1.00   | 182.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 31 | B    | 493609.84 | 104783.75 | 1.00   | 182.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 32 | B    | 493602.27 | 104799.67 | 1.00   | 0.00   | 0.00 | 0.00 | 0.00      |          |          |          |
| 33 | B    | 493608.78 | 104814.83 | 1.00   | 180.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 34 | B    | 493643.31 | 104776.68 | 1.00   | 180.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 35 | B    | 493636.14 | 104792.87 | 1.00   | 328.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 36 | B    | 493654.63 | 104800.13 | 1.00   | 136.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 42 | A    | 493632.44 | 104840.04 | 6.00   | 0.00   | 0.00 | 0.00 | 0.30      |          |          |          |
| 43 | A    | 493633.21 | 104868.26 | 6.00   | 359.00 | 0.00 | 0.00 | 0.30      |          |          |          |
| 44 | B    | 493689.03 | 104868.72 | 1.00   | 224.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 45 | B    | 493686.64 | 104880.16 | 1.00   | 311.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 46 | B    | 493640.49 | 104883.77 | 1.00   | 270.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 47 | B    | 493677.27 | 104873.66 | 1.00   | 40.00  | 0.00 | 0.00 | 0.00      |          |          |          |
| 48 | B    | 493655.95 | 104883.82 | 1.00   | 270.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 49 | B    | 493666.33 | 104878.50 | 1.00   | 89.00  | 0.00 | 0.00 | 0.00      |          |          |          |
| 50 | B    | 493626.84 | 104877.91 | 1.00   | 90.00  | 0.00 | 0.00 | 0.00      |          |          |          |

**Layout Continued**

| ID | Type | X         | Y         | Height | Angle  | Tilt | Cant | Out-reach | Target X | Target Y | Target Z |
|----|------|-----------|-----------|--------|--------|------|------|-----------|----------|----------|----------|
| 51 | B    | 493600.87 | 104883.44 | 1.00   | 269.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 52 | B    | 493588.76 | 104883.36 | 1.00   | 271.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 53 | B    | 493590.88 | 104873.82 | 1.00   | 136.00 | 0.00 | 0.00 | 0.00      |          |          |          |
| 54 | B    | 493614.64 | 104883.55 | 1.00   | 269.00 | 0.00 | 0.00 | 0.00      |          |          |          |

## Horizontal Illuminance (lux)

Grid 1

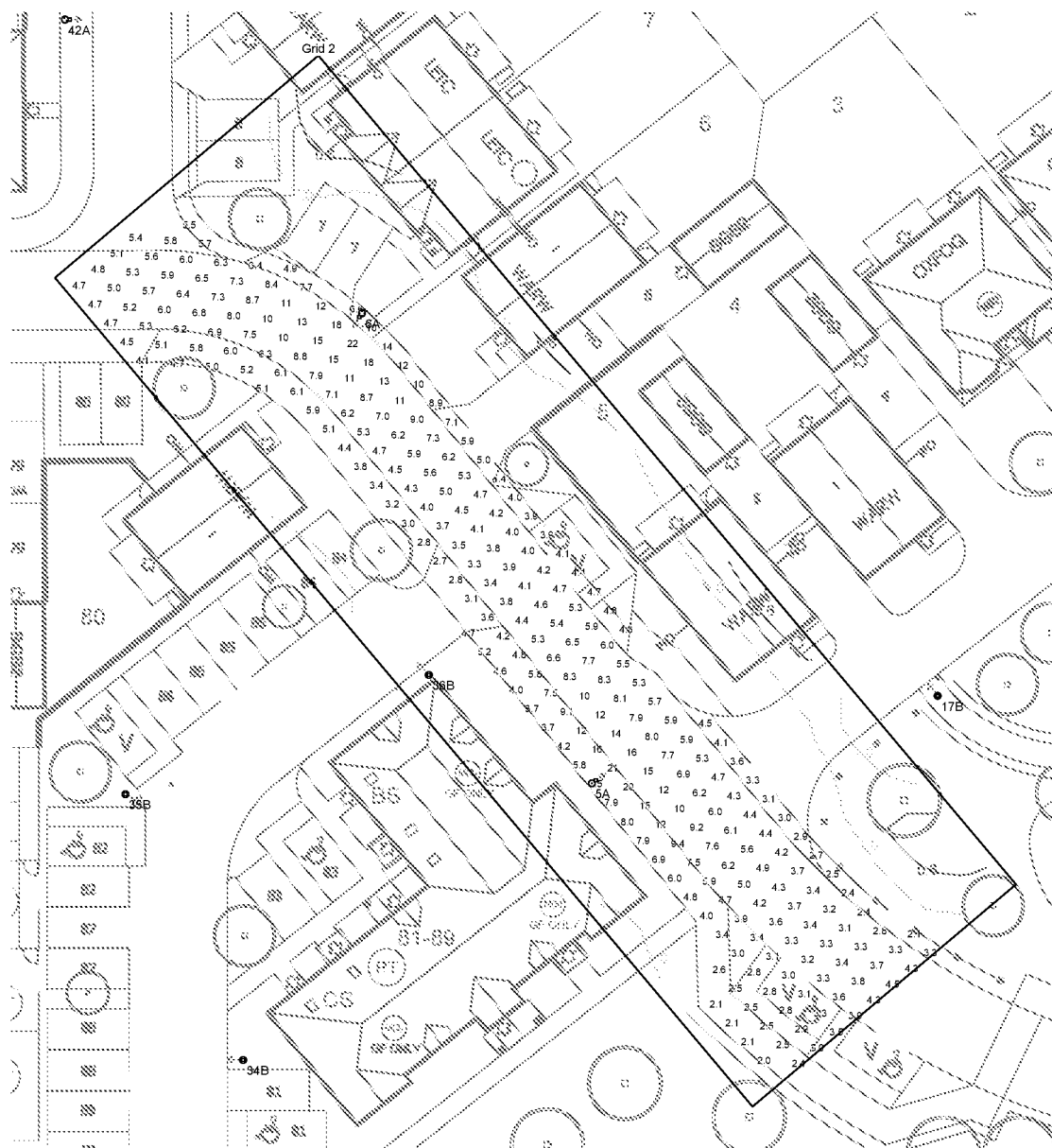


### Results

|           |       |
|-----------|-------|
| Eav       | 5.75  |
| Emin      | 1.29  |
| Emax      | 21.05 |
| Emin/Emax | 0.06  |
| Emin/Eav  | 0.23  |
|           |       |

## Horizontal Illuminance (lux)

Grid 2

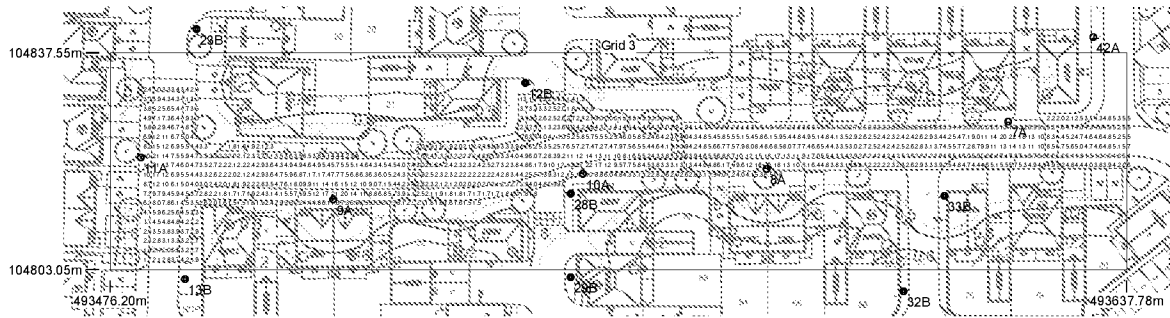


### Results

|           |       |
|-----------|-------|
| Eav       | 5.95  |
| Emin      | 2.04  |
| Emax      | 21.68 |
| Emin/Emax | 0.09  |
| Emin/Eav  | 0.34  |
|           |       |

## Horizontal Illuminance (lux)

Grid 3



### Results

|           |       |
|-----------|-------|
| Eav       | 5.27  |
| Emin      | 1.29  |
| Emax      | 21.78 |
| Emin/Emax | 0.06  |
| Emin/Eav  | 0.25  |
|           |       |

## Horizontal Illuminance (lux)

Grid 4

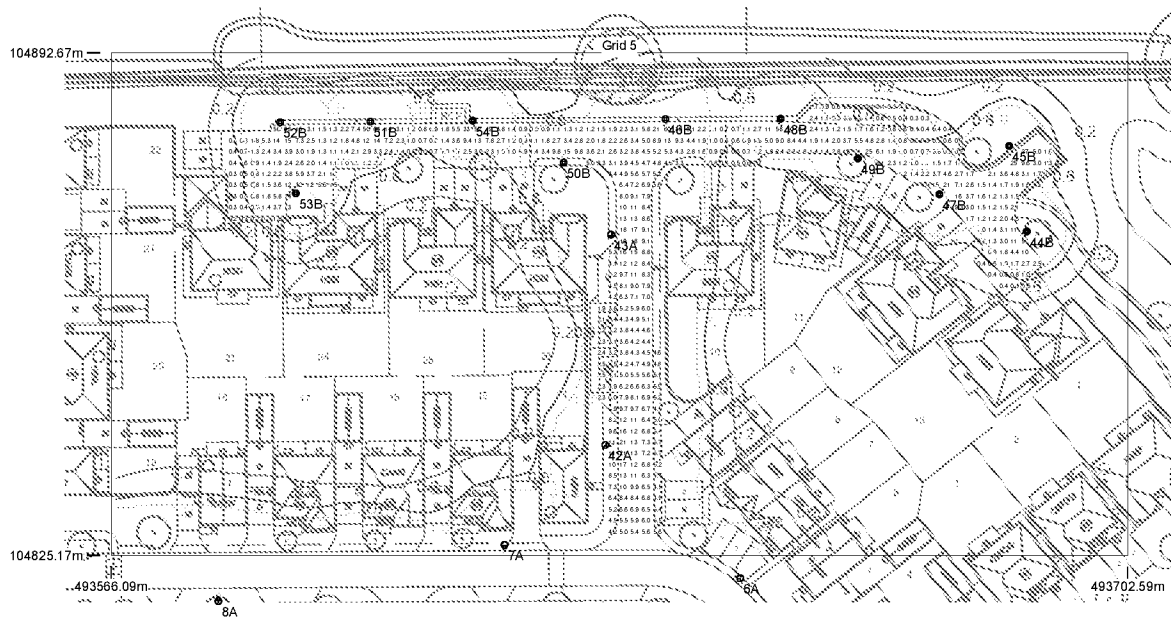


### Results

|                       |       |
|-----------------------|-------|
| Eav                   | 3.56  |
| Emin                  | 0.35  |
| E <sub>max</sub>      | 27.77 |
| Emin/E <sub>max</sub> | 0.01  |
| Emin/Eav              | 0.10  |
|                       |       |

## Horizontal Illuminance (lux)

Grid 5

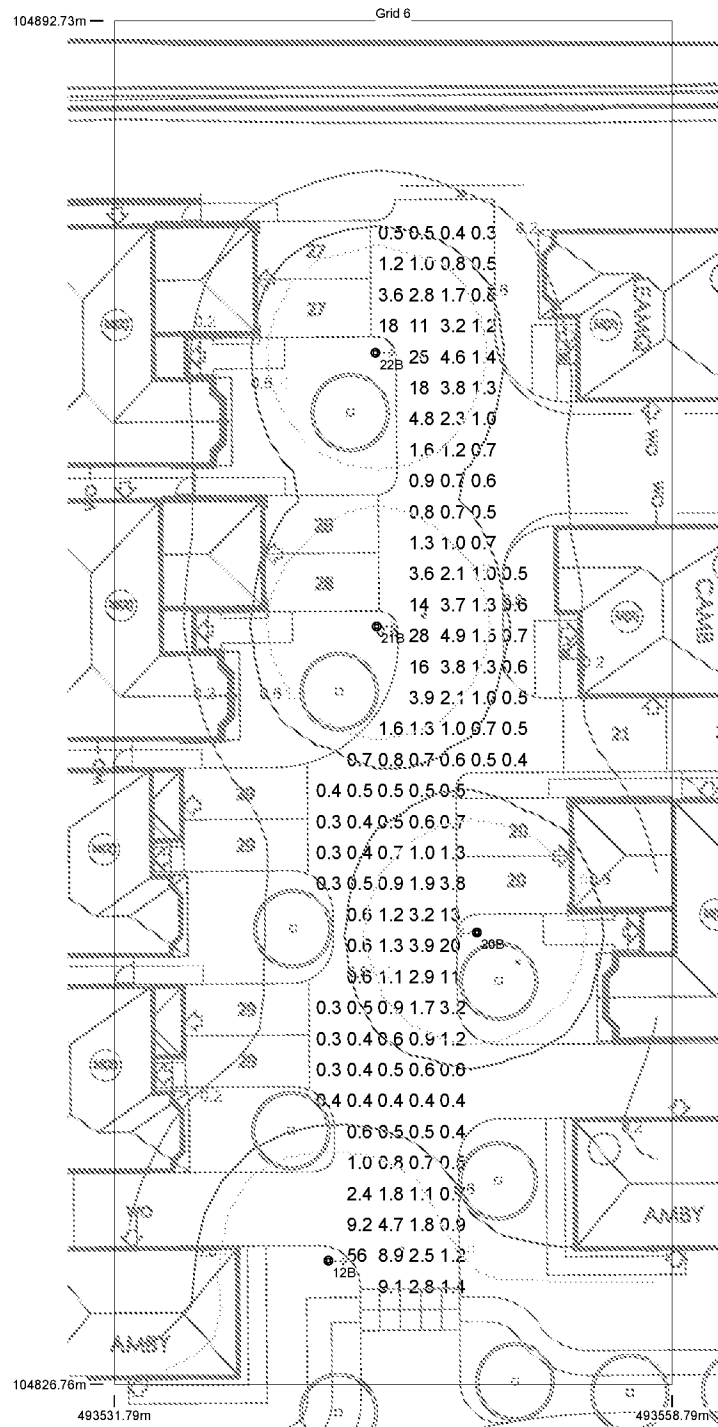


### Results

|           |       |
|-----------|-------|
| Eav       | 5.57  |
| Emin      | 0.21  |
| Emax      | 63.90 |
| Emin/Emax | 0.00  |
| Emin/Eav  | 0.04  |

## Horizontal Illuminance (lux)

Grid 6

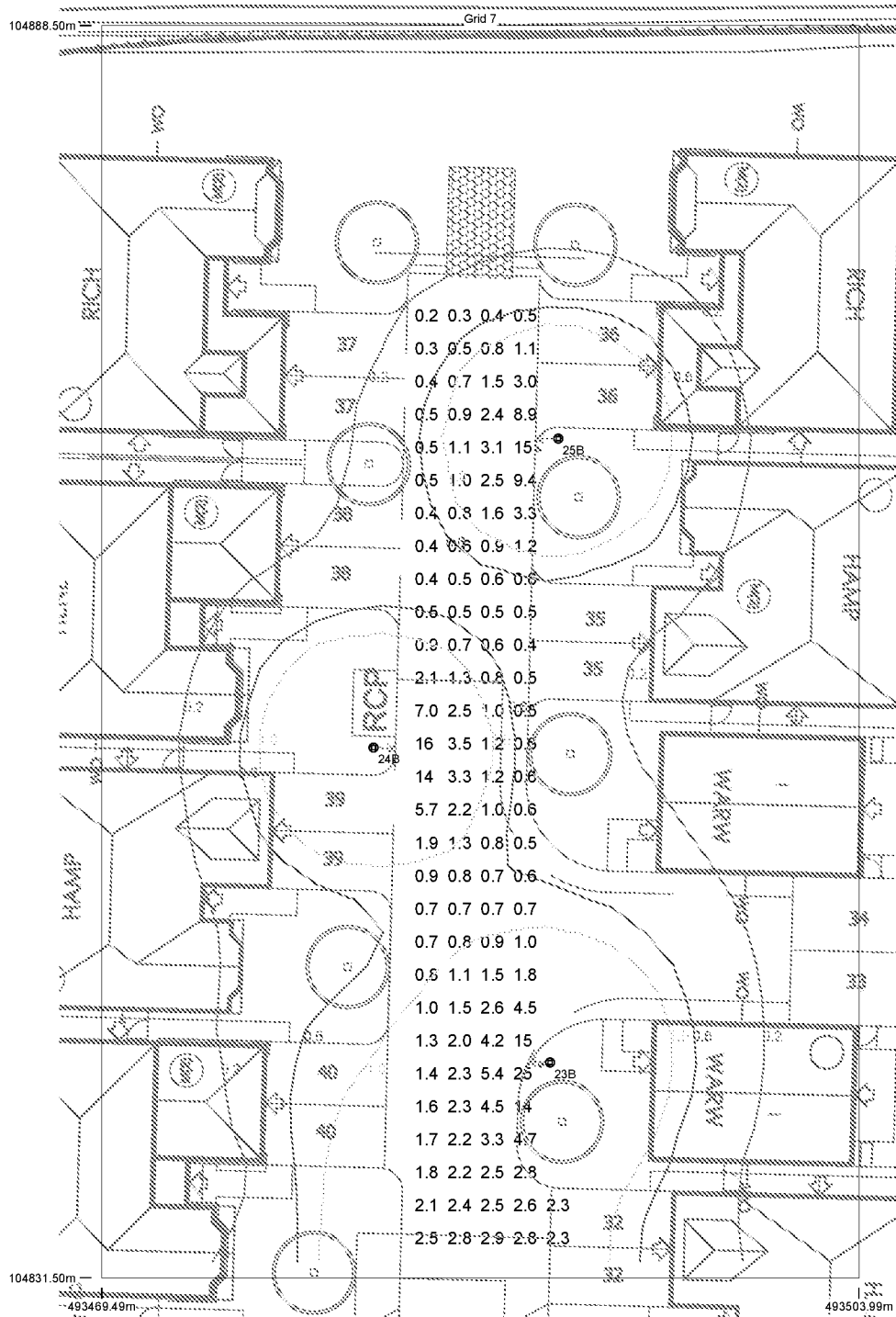


### Results

|           |       |
|-----------|-------|
| Eav       | 2.93  |
| Emin      | 0.30  |
| Emax      | 55.79 |
| Emin/Emax | 0.01  |
| Emin/Eav  | 0.10  |
|           |       |

## Horizontal Illuminance (lux)

Grid 7

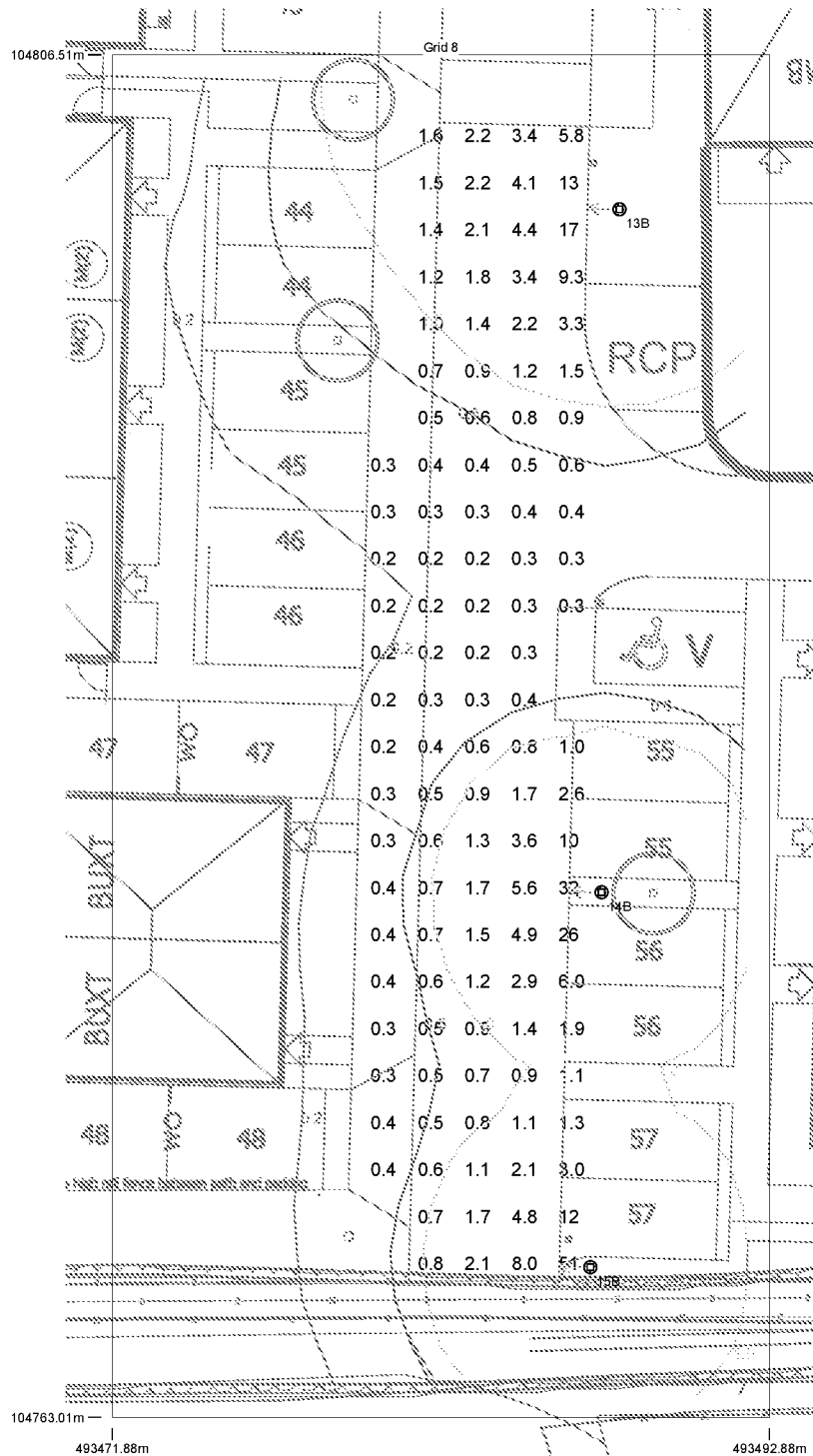


### Results

|           |       |
|-----------|-------|
| Eav       | 2.46  |
| Emin      | 0.22  |
| Emax      | 24.90 |
| Emin/Emax | 0.01  |
| Emin/Eav  | 0.09  |

## Horizontal Illuminance (lux)

Grid 8

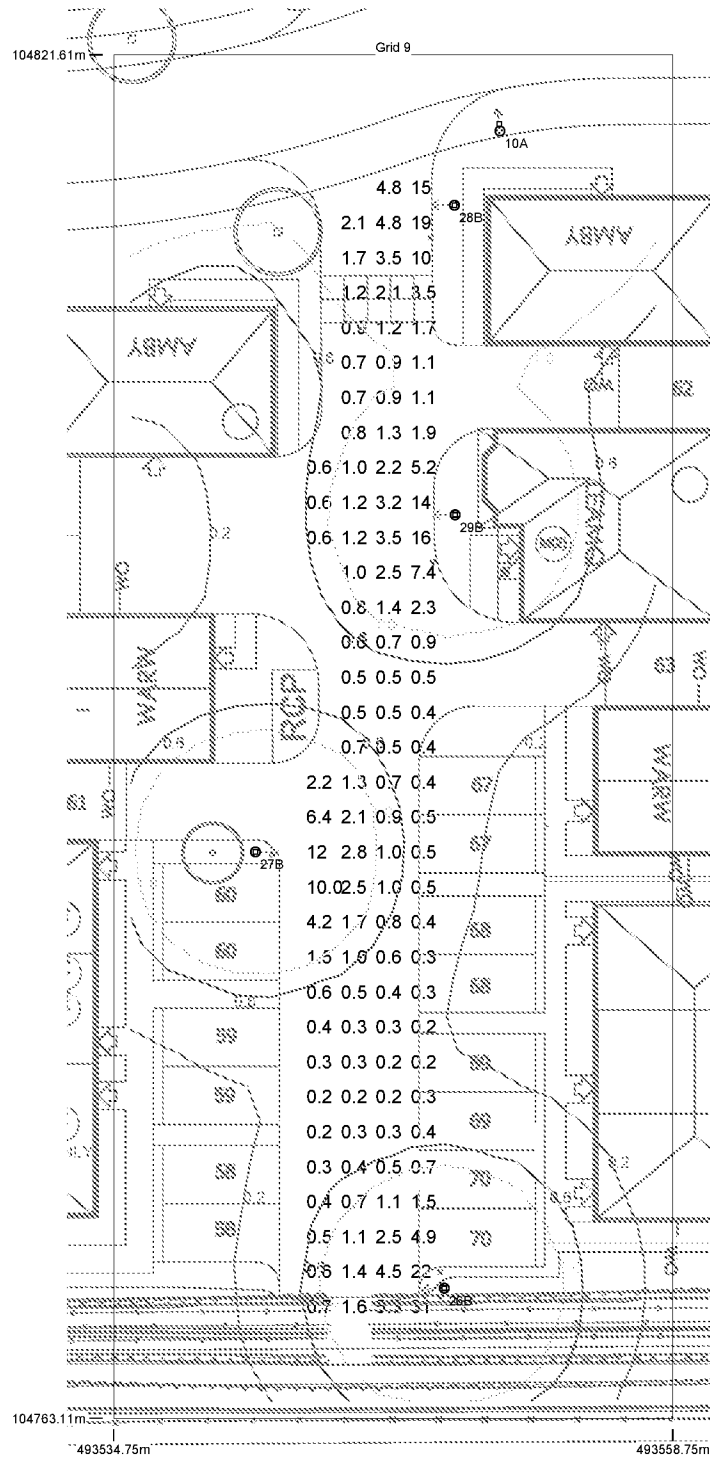


### Results

|           |       |
|-----------|-------|
| Eav       | 2.72  |
| Emin      | 0.18  |
| Emax      | 50.98 |
| Emin/Emax | 0.00  |
| Emin/Eav  | 0.07  |
|           |       |

## Horizontal Illuminance (lux)

Grid 9

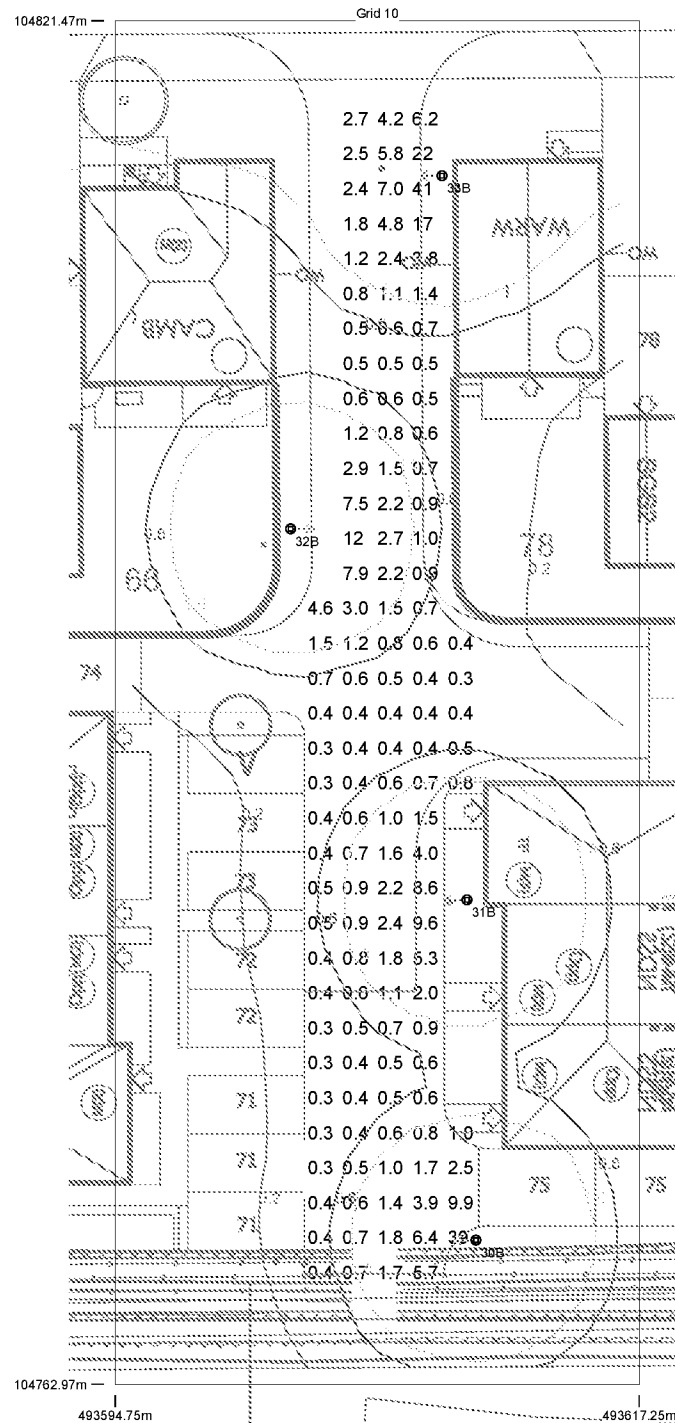


### Results

|           |       |
|-----------|-------|
| Eav       | 2.53  |
| Emin      | 0.22  |
| Emax      | 30.75 |
| Emin/Emax | 0.01  |
| Emin/Eav  | 0.09  |
|           |       |

## Horizontal Illuminance (lux)

Grid 10

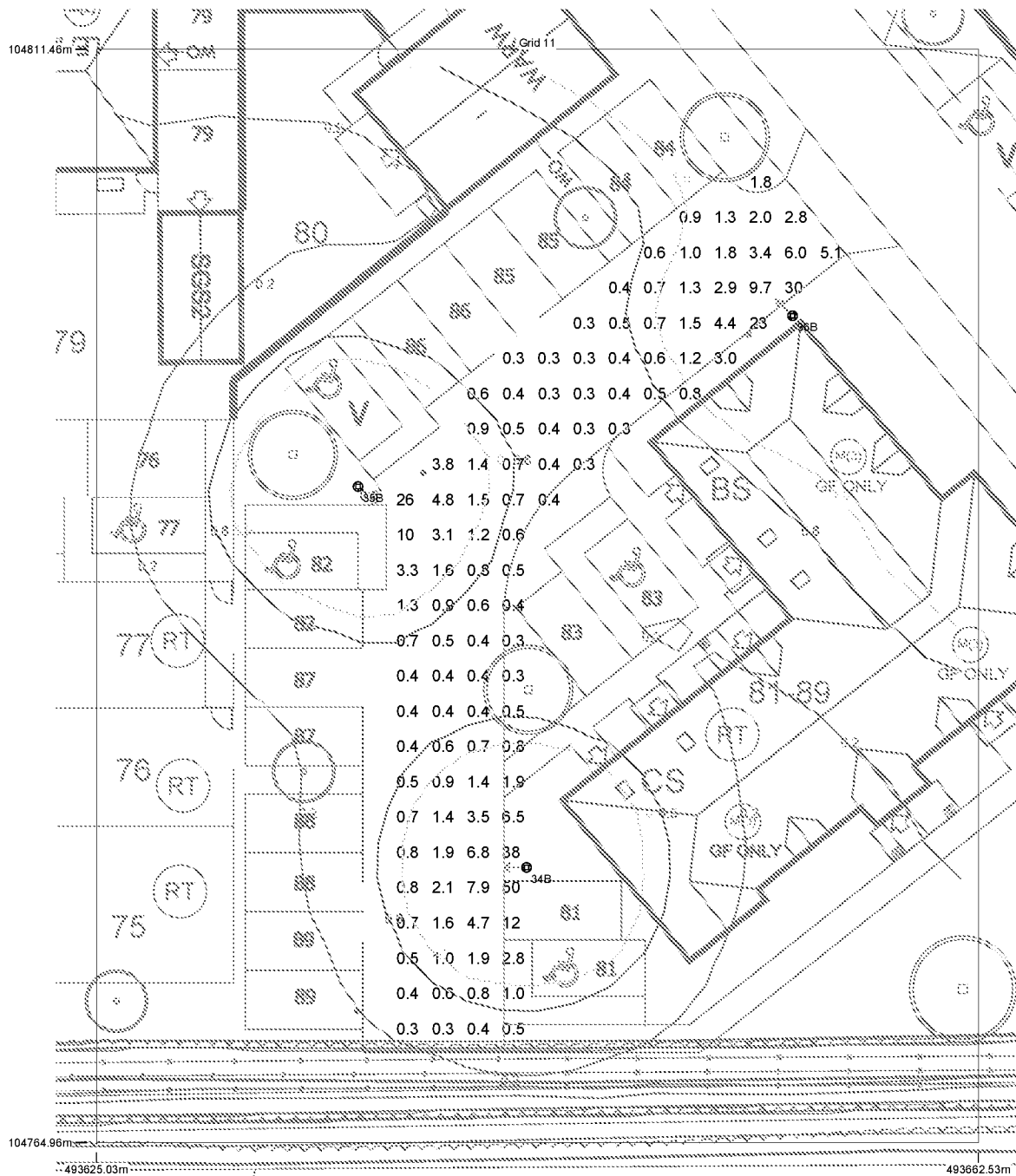


### Results

|           |       |
|-----------|-------|
| Eav       | 2.58  |
| Emin      | 0.29  |
| Emax      | 40.86 |
| Emin/Emax | 0.01  |
| Emin/Eav  | 0.11  |
|           |       |

## Horizontal Illuminance (lux)

Grid 11

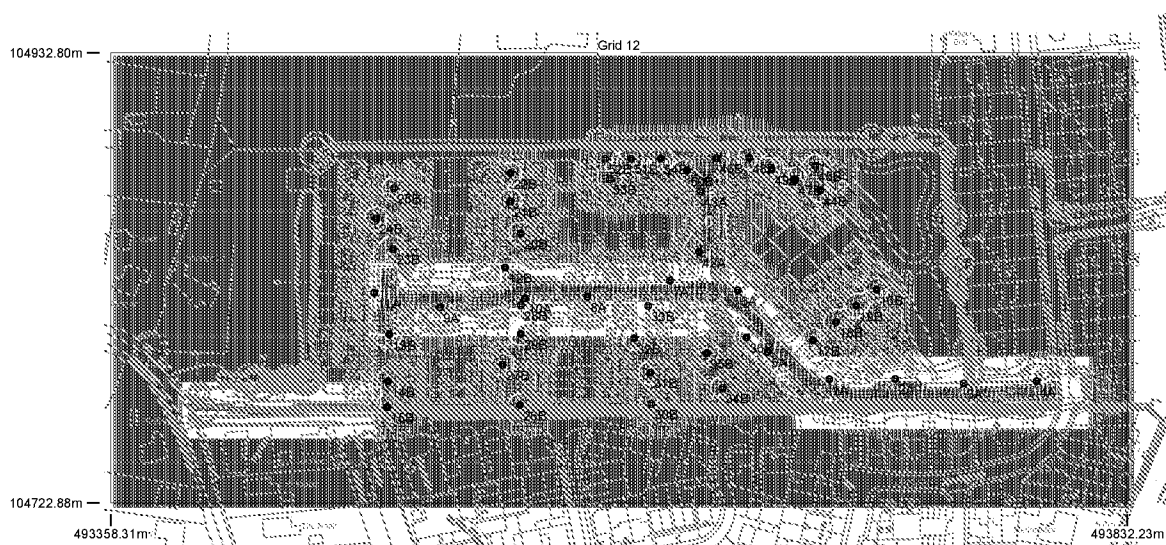


### Results

|           |       |
|-----------|-------|
| Eav       | 3.05  |
| Emin      | 0.26  |
| Emax      | 50.43 |
| Emin/Emax | 0.01  |
| Emin/Eav  | 0.08  |
|           |       |

## Horizontal Illuminance (lux)

Grid 12



### Results

|           |       |
|-----------|-------|
| Eav       | 0.53  |
| Emin      | 0.00  |
| Emax      | 68.18 |
| Emin/Emax | 0.00  |
| Emin/Eav  | 0.00  |
|           |       |