

**DATE:** 26 February 2021  
**DESIGNER:** Loveday Lighting Limited  
**PROJECT No:** LL1171  
**PROJECT NAME:** M606 Bradford



External Lighting Design

Lighting classification: (As taken from BS 5489-1:2020 (Table A.4),  
ILP PLG 02 & BS EN 12464-2:2014 (Table 5.9))

HGV loading area

Table 5.7 BS EN 12464-2:2014

Minimum maintained average illuminance (Eav): >20.00 lux  
Emin/Eav (Uniformity) => 0.25 (25%)

Access Road

Table 2 BS EN 12464-2:2014

Lighting Classification: C3

Minimum maintained average illuminance (Eav): >15.00 lux  
Emin/Eav (Uniformity) => 0.40 (40%)

## **Access Road and Rear HGV.**

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## Layout Report

### General Data

Dimensions in Metres Angles in Degrees  
Local Origin at 418063390.50m x 427572290.27m

### Calculation Grids

| ID | Grid Name | X      | Y       | X' Length | Y' Length | X' Spacing | Y' Spacing |
|----|-----------|--------|---------|-----------|-----------|------------|------------|
| 1  | Grid 1    | 641.80 | 1138.47 | 200.00    | 54.00     | 1.50       | 1.50       |
| 2  | Grid 2    | 619.72 | 1446.09 | 300.00    | 150.00    | 1.50       | 1.50       |

### Luminaires

#### Luminaire A Data

|                      |                                                                     |
|----------------------|---------------------------------------------------------------------|
| Supplier             |                                                                     |
| Type                 | BGP703 DW50 BL2                                                     |
| Lamp(s)              | LED-HB 5.2S 730                                                     |
| Lamp Flux (klm)      | 12.00                                                               |
| File Name            | Luma Gen2 Mini_BGP703_DW50 BL2_120<br>00_40LED_5.2S_CLO_L90_730.ies |
| Maintenance Factor   | 0.83                                                                |
| Imax70,80,90(cd/klm) | 576.2, 41.2, 0.0                                                    |
| No. in Project       | 4                                                                   |

#### Luminaire B Data

|                      |                                                                |
|----------------------|----------------------------------------------------------------|
| Supplier             |                                                                |
| Type                 | BVP651 DX10 BL1                                                |
| Lamp(s)              | LED-HB 5.1S                                                    |
| Lamp Flux (klm)      | 58.00                                                          |
| File Name            | Clearflood Large_BVP651_DX10 BL1_5800<br>0_5.1S_L90_CLO_WW.ies |
| Maintenance Factor   | 0.83                                                           |
| Imax70,80,90(cd/klm) | 478.5, 68.7, 0.0                                               |
| No. in Project       | 13                                                             |

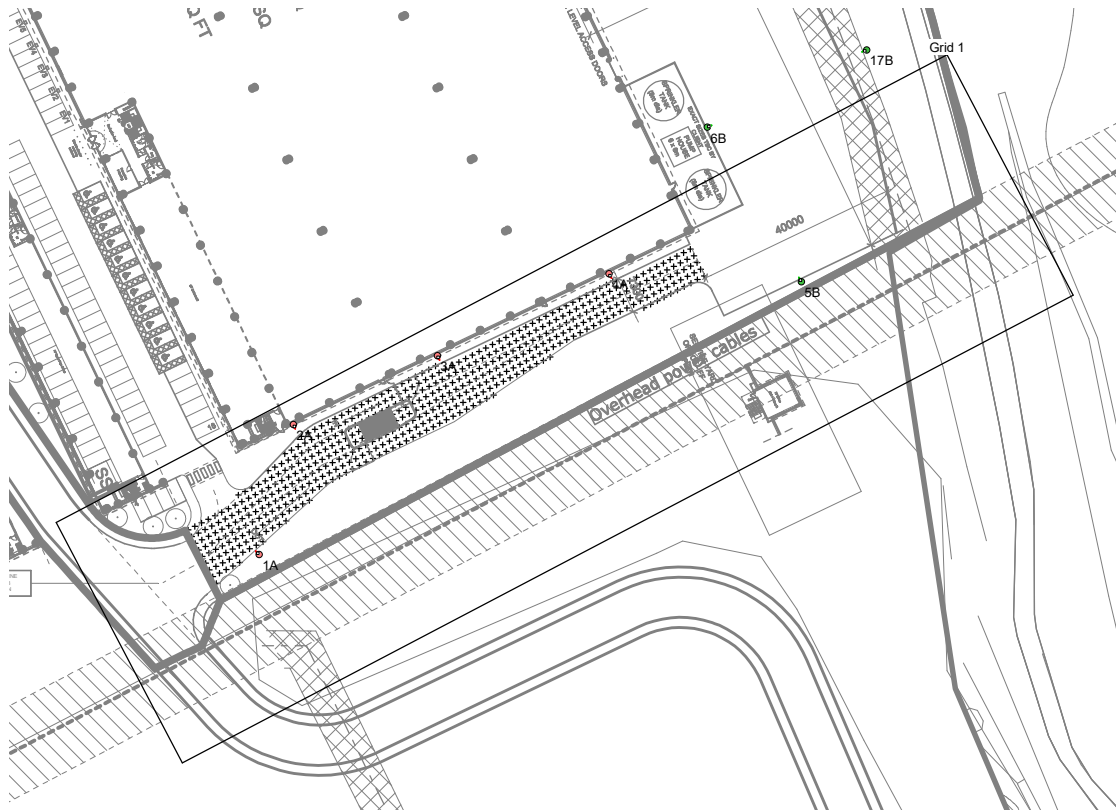
### Layout

| ID | Type | X      | Y       | Height | Angle  | Tilt | Cant | Out-<br>reach | Target<br>X | Target<br>Y | Target<br>Z |
|----|------|--------|---------|--------|--------|------|------|---------------|-------------|-------------|-------------|
| 1  | A    | 657.05 | 1179.89 | 8.00   | 134.00 | 0.00 | 0.00 | 0.40          |             |             |             |
| 2  | A    | 663.86 | 1205.76 | 8.00   | 293.00 | 0.00 | 0.00 | 0.40          |             |             |             |
| 3  | A    | 692.46 | 1219.44 | 8.00   | 298.00 | 0.00 | 0.00 | 0.40          |             |             |             |
| 4  | A    | 726.63 | 1235.72 | 8.00   | 297.00 | 0.00 | 0.00 | 0.40          |             |             |             |
| 5  | B    | 764.82 | 1234.10 | 10.00  | 117.00 | 5.00 | 0.00 | 0.40          |             |             |             |
| 6  | B    | 746.12 | 1264.84 | 8.00   | 25.00  | 5.00 | 0.00 | 0.40          |             |             |             |
| 7  | B    | 722.37 | 1288.46 | 8.00   | 21.00  | 5.00 | 0.00 | 0.40          |             |             |             |
| 8  | B    | 705.97 | 1322.61 | 8.00   | 25.00  | 5.00 | 0.00 | 0.40          |             |             |             |
| 9  | B    | 690.61 | 1354.76 | 8.00   | 25.00  | 5.00 | 0.00 | 0.40          |             |             |             |
| 10 | B    | 678.69 | 1379.83 | 8.00   | 26.00  | 5.00 | 0.00 | 0.40          |             |             |             |
| 11 | B    | 662.78 | 1413.23 | 8.00   | 24.00  | 5.00 | 0.00 | 0.40          |             |             |             |
| 12 | B    | 686.16 | 1444.96 | 10.00  | 290.00 | 5.00 | 0.00 | 0.40          |             |             |             |
| 13 | B    | 718.33 | 1431.80 | 10.00  | 205.00 | 5.00 | 0.00 | 0.40          |             |             |             |
| 14 | B    | 734.60 | 1400.59 | 10.00  | 204.00 | 5.00 | 0.00 | 0.40          |             |             |             |
| 15 | B    | 751.18 | 1359.41 | 10.00  | 197.00 | 5.00 | 0.00 | 0.40          |             |             |             |
| 16 | B    | 763.06 | 1317.58 | 10.00  | 207.00 | 5.00 | 0.00 | 0.40          |             |             |             |
| 17 | B    | 777.83 | 1280.18 | 10.00  | 202.00 | 5.00 | 0.00 | 0.40          |             |             |             |



## Horizontal Illuminance (lux)

Grid 1



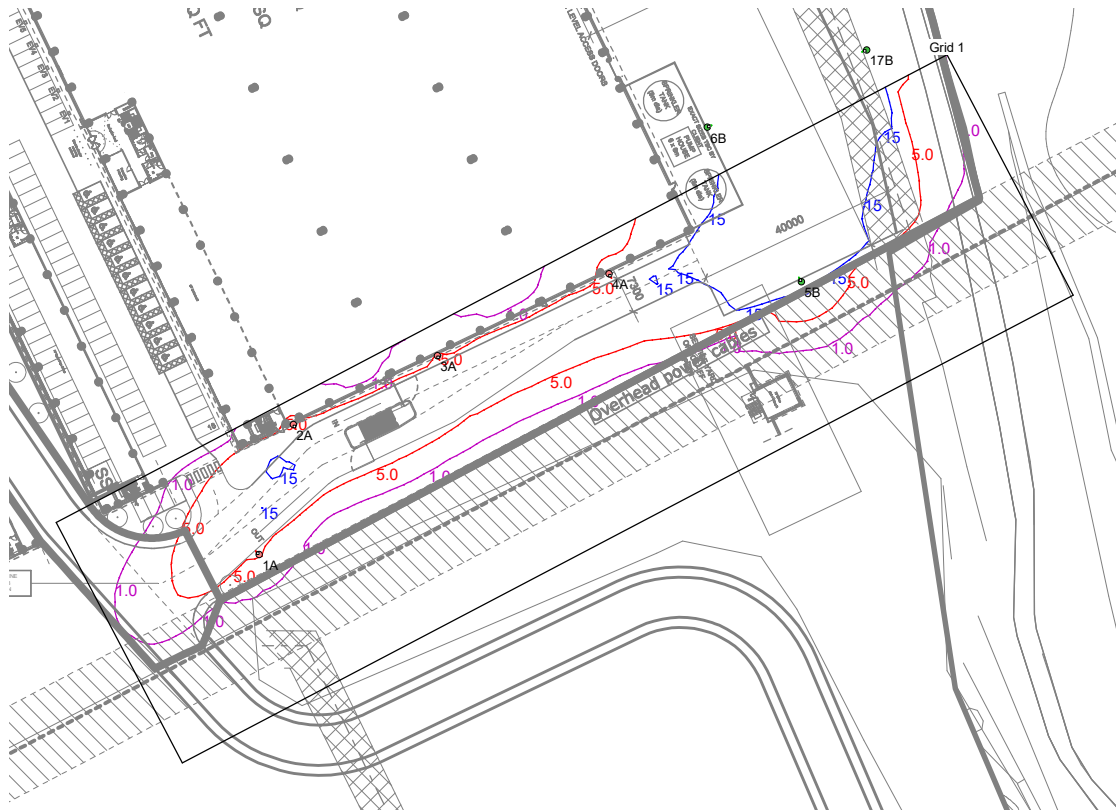
### Results

|           |       |
|-----------|-------|
| Eav       | 10.75 |
| Emin      | 5.89  |
| Emax      | 17.55 |
| Emin/Emax | 0.34  |
| Emin/Eav  | 0.55  |
|           |       |



## Horizontal Illuminance (lux)

Grid 1



### Results

|           |       |
|-----------|-------|
| Eav       | 10.75 |
| Emin      | 5.89  |
| Emax      | 17.55 |
| Emin/Emax | 0.34  |
| Emin/Eav  | 0.55  |
|           |       |



## Horizontal Illuminance (lux)

Grid 2



### Results

|           |       |
|-----------|-------|
| Eav       | 27.98 |
| Emin      | 8.13  |
| Emax      | 76.01 |
| Emin/Emax | 0.11  |
| Emin/Eav  | 0.29  |
|           |       |



## Horizontal Illuminance (lux)

Grid 2



### Results

|           |       |
|-----------|-------|
| Eav       | 27.98 |
| Emin      | 8.13  |
| Emax      | 76.01 |
| Emin/Emax | 0.11  |
| Emin/Eav  | 0.29  |
|           |       |