

EXTERNAL LIGHTING DESIGN STATEMENT

Project Ref: M2870

Project Title: Glossop Fire Station

Date: 26.06.2023

Report Ref: GFS_ESD_XX_XX_R_E_0001 P1

1.0 Outline:

This report is provided to identify the approach taken when undertaking the external lighting design and the features and considerations included to minimise the impact on adjacent properties.

2.0 Design Standards:

The external lighting scheme has been designed in keeping with the below standards.

- CIBSE Lighting Guide 6: The Outdoor Environment
- The Institute of Lighting Engineers Guidance notes for the reduction of obtrusive light (GN01)
- The access road is private but shall be designed to adoptable standards.
- The access road shall be designed in line with BSEN 13201-2:2015 clause 6.1

The approach follows the Institute of Lighting Engineers 'Think before you light' strategy of – *"The right amount of light, where wanted, when wanted"*.

Target lighting levels to be provided are as follows:

- Car Park – 10 Lux 0.25 Uniformity
- Appliance Access – 50 Lux 0.4 Uniformity
- Building Perimeter – 20 Lux 0.25 Uniformity
- Disabled Parking Bays – 20 Lux 0.25 Uniformity
- Road – 5 – 7.5 Lux 1 Lux Minimum

Levels are provided to allow safe movement of pedestrian and vehicular traffic.

3.0 Design Approach:

Lighting is provided to the building perimeter via wall mounted, hooded, luminaires.

Lighting to the access road and car park is provided via column mounted luminaires.

Pathways to be illuminated by wall mounted luminaires

All luminaires are energy efficient LED luminaires.

Lights are controlled via timeclock and photocells.

The lighting scheme has been designed to minimise light spillage from the site to surrounding properties. The levels have been based on environmental zone E3 – Suburban Area – Medium district brightness – Small town or suburban location.

The lighting strategy, luminaire types, lighting levels and spill lines are indicated on the ESD External Lighting & Power drawing – GFS-ESD-XX-XX-DR-E-6900 PL.

4.0 Environmental Measures:

The lighting approach has been provided to minimise the impact on the neighbouring spaces. The following measures have been taken:-

- The light source selected are LED lamps (as ILE preference).
- All columns and wall lights point their light down with 0% upwards lights output.
- Lights are controlled via timeclocks and photocell and will switch off between 11pm and 7am (this could be amended if preferred).

5.0 Illumination levels:

Lighting calculations have been produced to inform the performance design drawing – GFS-ESD-XX-XX-DR-E-6900 PL.

The lighting spillage off site is illustrated on the above drawings.

Excerpts from the lighting calculation are included on the following pages to illustrate the illumination levels at each area of the site and also includes the anticipated spill lines.

Calculation Results:



Predicted Illumination Levels by Zone:

Calculation Summary									
Grid Ref	Measurement	Units	Eav	E _{max}	E _{min}	U _o	U _d	X Pitch	Y Pitch
Access Road	Illuminance	Lux	13.41	48.1	5.4	0.40	0.11	1.5	1.5
Appliance Access Area 1	Illuminance	Lux	72.50	103.6	47.8	0.66	0.46	1.5	1.5
Appliance Access Area 2	Illuminance	Lux	51.05	110.5	20.2	0.40	0.18	1.5	1.5
Car Park 1	Illuminance	Lux	14.00	50.0	3.8	0.27	0.08	1.5	1.5
Perimeter 1	Illuminance	Lux	31.69	54.0	15.3	0.48	0.28	1.5	1.5
Perimeter 2	Illuminance	Lux	29.44	57.6	9.2	0.31	0.16	1.5	1.5