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Bury Council Spurr House

220244

External Lighting Statement

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External Lighting Statement

1.0 External Lighting Statement

Couch Perry & Wilkes LLP have written this statement to summarise the external lighting design and calculations for the proposed Bury Council Spurr House development.

Areas on the site that require external lighting are the carpark areas and the pedestrian access surrounding the perimeter of the new building.

The lighting will be controlled via a photocell / timeclock arrangement ensuring that it is operational during school hours and when ambient light levels require it in order to maintain safe lighting levels for students travelling around the site.

The proposed development is located at the following address:

Spurr House
Pole Lane
Bury
BL9 8QL

The proposed site boundary has been identified on the plan adjacent.

When carrying out a design it is important to consult the relevant standards and guides, the following documents were used to aid the design:

- BS 5489-1:2020 Code of practice for the design of road lighting Part 1: Lighting of roads and public amenity areas
- BS EN 12464-2:2014 Light and lighting—Lighting of workplaces Part 2: Outdoor workplaces
- Institute of Lighting Professionals (ILP) Guidance Notes for the Reduction of Obtrusive Light GN01:2021.
- Lighting Guide 6 - The Outdoor Environment
- Bat Conservation Trust: Artificial Lighting and Wildlife
- Bat Conservation Trust: Bats and Lighting in the UK

In summary the main design criteria used to meet the general illuminance requirements are:

- Exclusive to pedestrian walkway lighting to an average of 5 lux with a 0.25 uniformity.
- Parking lighting to an average of 10 lux with a 0.25 uniformity.
- Traffic areas for slow moving vehicles and bicycles to an average of 10 lux and a uniformity of 0.4.

Spurr House



Approximate site boundary shown.

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2.0 Design Guidance

2.1 ILP Guidance Notes for the Reduction of Obtrusive Light GN01:2011

To ensure the proposed new lighting design is considerate of the site context and location then we design in accordance with the relevant guidance and standards provided. One of the main guides that we design to is the ILP Guidance Notes for the Reduction of Obtrusive Light GN01:2021. This guide provides the main point of reference in the industry to ensure that obtrusive light is kept to a minimum.

The tables shown opposite, and the definitions below are all taken directly from the guide for reference.

The site has been assessed against an environmental zone of E3: a Suburban area. This means that the values highlighted in Table 2, shown adjacent, must not be exceeded if the guidance is to be met. As the premises will be switching off the lighting following the operational hours of the school (Curfew time), then the assessment will only need to adhere to the pre-curfew levels as all results will be 0 post-curfew.

2.1.1 Upward Light Ratio

Some lighting schemes will require the deliberate and careful use of upward light, e.g. ground recessed luminaires, ground mounted floodlights, festive lighting, to which these limits cannot apply. However, care should always be taken to minimise any upward waste light by the proper application of suitably directional luminaires and light controlling attachments.

2.1.2 Light Intrusion (into Windows)

These values are suggested maxima and need to take account of existing light intrusion at the point of measurement. In the case of road lighting on public highways where building facades are adjacent to the lit highway, these levels may not be obtainable. In such cases where a specific complaint has been received, the Highway Authority should endeavour to reduce the light intrusion into the window down to the post curfew value by fitting a shield, replacing the luminaire, or by varying the lighting level.

2.1.3 Luminaire Intensity

This applies to each luminaire in the potentially obtrusive direction, outside of the area being lit. The figures given are for general guidance only and for some sports lighting applications with limited mounting heights, may be difficult to achieve.

2.1.4 Building Luminance

This should be limited to avoid over lighting and related to the general district brightness. In this reference building luminance is applicable to buildings directly illuminated as a night-time feature as against the illumination of a building caused by spill light from adjacent luminaires or luminaires fixed to the building but used to light an adjacent area.'

Table 1 – Environmental Zones

Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark	UNESCO Starlight Reserves, IDA Dark Sky Parks
E1	Natural	Intrinsically dark	National Parks, Areas of Outstanding Natural Beauty etc
E2	Rural	Low district brightness	Village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Small town centres or suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

Table 2 – Obtrusive Light Limitations for Exterior Lighting Installations – General Observers

Environmental Zone	Sky Glow ULR [Max %] ⁽¹⁾	Light Intrusion (into Windows) E _v [lux] ⁽²⁾		Luminaire Intensity I [candelas] ⁽³⁾		Building Luminance Pre-curfew ⁽⁴⁾
		Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	Average, L [cd/m ²]
E0	0	0	0	0	0	0
E1	0	2	0 (1*)	2,500	0	0
E2	2.5	5	1	7,500	500	5
E3	5.0	10	2	10,000	1,000	10
E4	15	25	5	25,000	2,500	25

ULR = Upward Light Ratio of the Installation is the maximum permitted percentage of luminaire flux that goes directly into the sky.

E_v = Vertical Illuminance in Lux—measured flat on the glazing at the centre of the window.

I = Light Intensity in Candelas (cd)

L = Luminance in Candelas per Square Metre (cd/m²)

Curfew = the time after which stricter requirements (for the control of obtrusive light) will apply; often a condition of use of lighting applied by the local planning authority. If not otherwise stated - 23.00hrs is suggested.

* = Permitted only from Public road lighting installations

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2.2 Guidance Notes for Lighting for Bats

The following guidance would also have to be considered after the discovery of bats using the site as a foraging location:

- Minimising the spread of light - This would also help to keep the light pollution to a minimum when considering the surrounding residential housing and concerns of local residents.
- Consideration of the height of the columns. Although it could be assumed that shorter would be better, the quality of the light from the columns should be a priority so that it does not interrupt the bats patterns too drastically.
- Blue and white wavelengths should be avoided to minimise bugs being attracted to the lights and as white lights are to be considered then they should be a warmer option at <4,200 kelvin.
- Adequate control system to ensure that the lights are switched off when not being used. This will allow for definite times of dark periods to suits the bats needs.

3.0 Proposed Luminaires

The following table details the proposed external luminaires for each area.

Images	Description
	External road light, extra wide distribution. Aluminium combined with tempered flat glass cover.
	IP66 wall mounted luminaires. High-pressure die-cast aluminium body.
	High performance LED bollard. Extruded aluminium with die-cast head unit and full polyester powder graphite finish. Pathway distribution



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