

Beck Lane External lighting Strategy

Location

Beck Lane,
Heckmondwike,
WF16 0JZ
Grid reference SE 21343 23239

Proposed development.

This report has been prepared to outline the external lighting strategy at Kirklees Council's proposed new storage facility at Beck Lane, the site is to be used for vehicle access and egress, parking, cleaning and storage of landscaping equipment and machinery.

Design Strategy

General illumination will be provided by column and wall mounted asymmetric flood lights along the boundary with Beck Lane and attached to the external wall of the storage shed.

Performance Objectives & Design criteria

Provide general exterior lighting to the areas agreed with the client. Provide a cost effective, sustainable and energy efficient system, in terms of initial capital costs and continuing operational use.

Lighting as proposed will not exceed recommended levels or cause excessive glare to neighbouring properties from this site. An adequate and safe level of lighting will be provided for site tasks and security, whilst maintaining a minimal impact on the site's surrounding environment.

The lighting scheme will consider and where necessary implement any good practice guidelines and recommendations made in the environmental impact assessment reports.

The following mandatory, legislative, and regulatory requirements, British Standards, Codes of Practice and Best Practice professional guidance publications have formed the parameters of the lighting installation:

- BS EN 12464-2:2014 Lighting of workplaces Part 2: Outdoor workplaces
- Guidance Notes for the Reduction of Obtrusive Light - GN01:2011, ILP, 2011
- The SLL Lighting Handbook, 2018
- ILP Guidance Note 08/18 - Bats and artificial lighting in the UK.

Also considered are the following reports commissioned by Kirklees Council.

- Construction Environment Management Plan: Biodiversity February 2023
- Biodiversity net gain assessment November 2022
- Preliminary Ecological Appraisal Report November 2022

Design

Table 5.1 ref 5.1.4 shows recommended levels for the type of activity and task likely to occur at Beck Lane

5.4 Lighting requirements for areas, tasks and activities

Table 5.1 — General requirements for areas and for cleaning at outdoor work places

Ref. no.	Type of area, task or activity	\bar{E}_m lx	U_o –	R_{GL} –	R_a –	Specific requirements
5.1.1	Walkways exclusively for pedestrians	5	0,25	50	20	
5.1.2	Traffic areas for slowly moving vehicles (max. 10 km/h), e.g. bicycles, trucks and excavators	10	0,40	50	20	
5.1.3	Regular vehicle traffic (max. 40 km/h)	20	0,40	45	20	At shipyards and in docks, R_{GL} may be 50
5.1.4	Pedestrian passages, vehicle turning, loading and unloading points	50	0,40	50	20	
5.1.5	Cleaning and servicing	50	0,25	50	20	All relevant surfaces

BS EN 12464-2:2014 Part 2 Outdoor workplaces ©bsi 2014

Attached to this document is a lighting simulation data showing the expected output from the flood lights.

E_m (lx) Average illuminance 115 lx
 E_{min} (lx) Minimum illuminance 48 lx
 E_{max} (lx) Maximum illuminance 225 lx

U_o (Uniformity) Uniformity falls a little short of the recommendation, this likely due to the shape of area, there is greater uniformity in the expected task areas.

R_{GL} (Glare rating) not measured here and not expected to be an issue with the asymmetric flood lights being proposed.

R_a (Colour render index) exceeds recommendation at 70

ULR (upward light ratio) 0%

The lighting simulation also shows the probable light spill from the site and at what level. The flood lights are mounted relatively low at 8m and the fittings do have a degree of adjustment.

Applying the mitigating recommendations made in the Preliminary Ecological Appraisal Report the flood lights will have a colour temperature of 2700K (warm white) with peak wavelengths greater than 500nm.

Installation

Column lighting

The external column lighting circuits shall be controlled via a round pattern electronic time clock, as Sangamo E854 range, external photo-cell (North facing) and lighting contactors. The time clock will be mounted at eye level and will have, as a minimum, the following functions:

- i. Manual override
- ii. BST/GMT auto change over
- iii. Holiday mode
- iv. Battery back up

The operating times for the external lighting shall be from 06:30 – 9:30 in the morning, and again from 15:00 – 18:00 in the afternoon/evening.

The wall mounted flood lights are positioned for particular task areas and are individually switch within the building.

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