

Development at Regis Road, Kentish Town, London, NW5 3EW



External Lighting Proposal

Issue 2 - Dated 27th January 2022

A Submission by



The Chartered Institution
of Building Services Engineers

LOW CARBON CONSULTANTS

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1. Summary

This External Lighting Proposal describes the proposed lighting scheme and calculated results for the new development at 12 Kentish Town Industrial Estate, Regis Road, London, NW5 3EW

The proposed development is described in Section 2.

The parameters for the intended lighting levels and proposed lighting equipment are described in Section 3.

The results are given in Section 4.

The proposed scheme and results of the calculated lighting levels are shown on drawing 5139-LTG-01.

The results show that the target lighting levels have been achieved, and the effect on the surrounding environment has been minimised. Overspill is minimal and there is almost zero direct upward light.

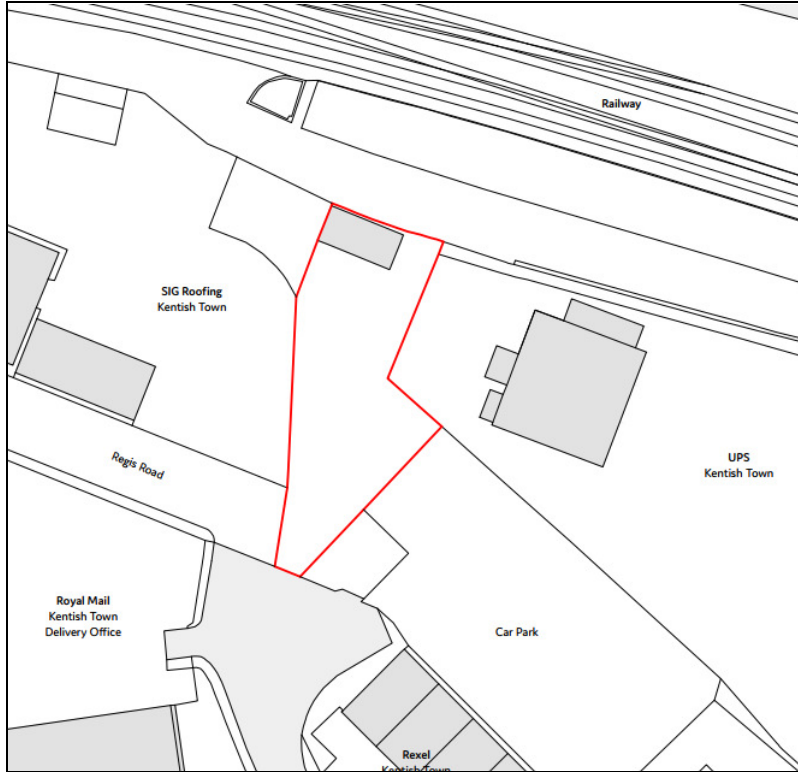
The ecological in the area has been considered but with no specific concerns reported, no additional measures have been included other than the control of light spill off-site.

2. Description of the Project

The proposal is for existing buildings and facilities on the site plot in the Industrial Estate to be demolished/removed and new industrial/commercial semi-permanent units to be constructed.

The new facilities will be prefabricated buildings with car parking and delivery space

The area being developed is shown by the red boundary below.



The majority of the buildings on the site will be single storey, with just 1 being two storey.

For security purposes the area flood lighting shall be provided to the compound as a whole to the common to ensure no areas are in darkness. Each exit door from the individual buildings will be provided with a final exit escape light linked to the internal lighting circuit. Contribution from these lights has not been included in the area calculation.

The surrounding areas area is non-residential.



The neighbouring property can be summarised as:

- A Roofing Supplies warehouse to the West
- A post Office Depot to the South West
- A car park to the South East
- A UPS delivery depot to the East
- An embankment to a multitrack railway screened by trees to the North

3. Proposed Lighting Scheme

Lighting shall consist of the following:

- Column mounted luminaires on the outer perimeter of the yard.

The effect on neighbours have been accommodated by choice of luminaires and light sources to minimise the effect on the surrounding environment.

Lighting levels to the car park and service yard have been selected to meet the requirements of British Standards and recommendations of professional bodies, and the Client's requirement to provide a well-lit car park to promote safety and security.

- **BSEN 12464 Part 2: 2014 – Light and Lighting – Lighting of Work Places, Part 2: Outdoor work Places.**

Lighting equipment has been chosen to meet the requirements of the BSEN 12464-2 recommendation for reduction of obtrusive light.

Target Lighting Levels

The target lighting levels are as follows:

Criteria 1

20 lux average, 0.25 uniformity. (BSEN 12464-2, table 5.9.3 for "Parking Areas").

Table 5.9 — Parking areas

| Ref. no. | Type of area, task or activity | \overline{E}_m lx | U_o – | R_{GL} – | R_a – | Specific requirements |
|----------|---|------------------------|------------|---------------|------------|-----------------------|
| 5.9.1 | Light traffic, e.g. parking areas of shops, terraced and apartment houses; cycle parks | 5 | 0.25 | 55 | 20 | |
| 5.9.2 | Medium traffic, e.g. parking areas of department stores, office buildings, plants, sports and multipurpose building complexes | 10 | 0,25 | 50 | 20 | |
| 5.9.3 | Heavy traffic, e.g. parking areas of major shopping centres, major sports and multipurpose building complexes | 20 | 0,25 | 50 | 20 | |

The chosen lighting level of 20 lux complies with the requirements for "heavy traffic".

The lower level of 10 lux for "medium traffic" (table 5.9.2) was not chosen as the car parks are dual function as service yards where lorries may mix with cars and pedestrians – a higher level will provide enhanced visibility for safety, as well as a better sense of security.

Criteria 2

20 lux average, 0.25 uniformity. (The Society of Light & Lighting Handbook 2018, table 27.2 Lighting Recommendations for Security Lighting of Public Areas)

Table 27.2 Illuminance recommendations for security lighting of public areas

| Application | Minimum maintained mean illuminance (lx) | Illuminance uniformity (minimum/average) | Notes |
|--|--|--|--|
| Light traffic and low crime risk car parks | 5 | 0.25 | The illuminance is measured on the ground, using the method given in BS 5489-1 (BSI, 2013) |
| Medium traffic or medium crime risk car parks | 10 | 0.25 | The illuminance is measured on the ground, using the method given in BS 5489-1 (BSI, 2013) |
| Heavy traffic or high crime risk car parks | 20 | 0.25 | The illuminance is measured on the ground, using the method given in BS 5489-1 (BSI, 2013) |
| Paths in public parks where risk assessment shows the need | 10 | 0.25 | The illuminance is measured on the ground or pathways |
| Service station: pump area | 50 | 0.33 | The illuminance is measured on the ground |
| Service station: storefront | 30 | 0.33 | The illuminance is measured on the ground |

The chosen lighting level of 20 lux complies with the requirements for “heavy traffic” to match BSEN 12464, which is also suitable for high crime risk car parks.

Proposed Lighting Equipment

Luminaires have been chosen to conform to the following requirements:

| |
|--|
| High efficiency/low energy luminaires, by use of LED light sources. |
| The design of luminaires shall be chosen to provide good control of light (i.e. tight beam control) to create minimal stray light, and shall be aimed at the activity area only. |
| Luminaires shall be constructed with recessed LEDs, and aimed downwards, to achieve zero upward light (full horizontal cut off). |
| Location of luminaires shall further reduce the overspill: they shall be only used for, and carefully aimed at, the task area (car parks and service yard). |
| Good colour rendering, CRI Ra>70. (80) |
| Colour temperature of 4000K. |
| Baffles or shields shall be used where necessary to prevent overspill where it may be obtrusive to neighbours. |

Column height has been chosen as 5m. This is high enough to allow the luminaires to be aimed in a downwards direction, reducing sideways aiming which may cause overspill and glare.

The maximum height of an articulated lorry if used for delivery has been taken as 4.5m AFFL.

Column mounted car park luminaire:

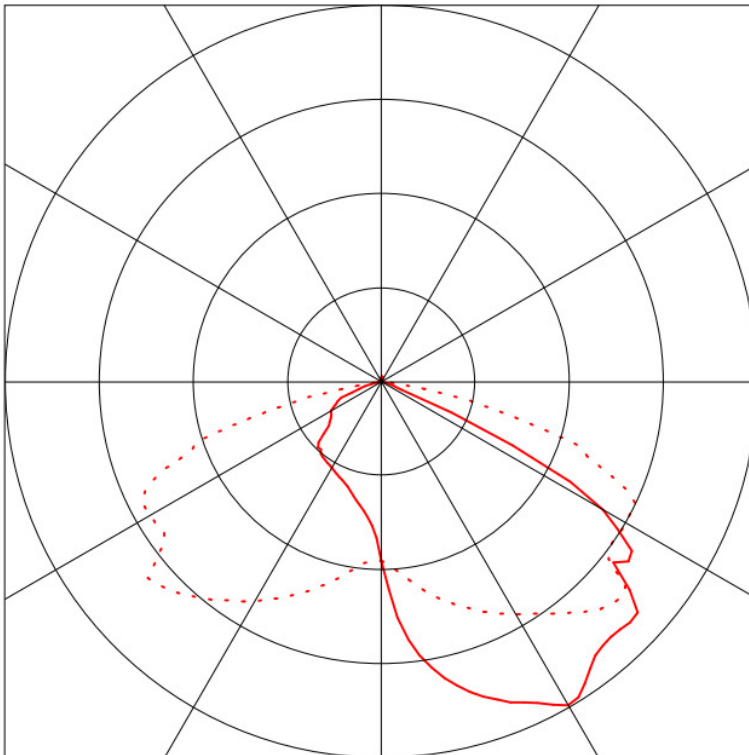
Edge Lighting Services Ltd "Parq Area AF 840"

Colour temperature: 4000K

Wattage: 37W

Output: 4653 lumens

Column Height: 5m



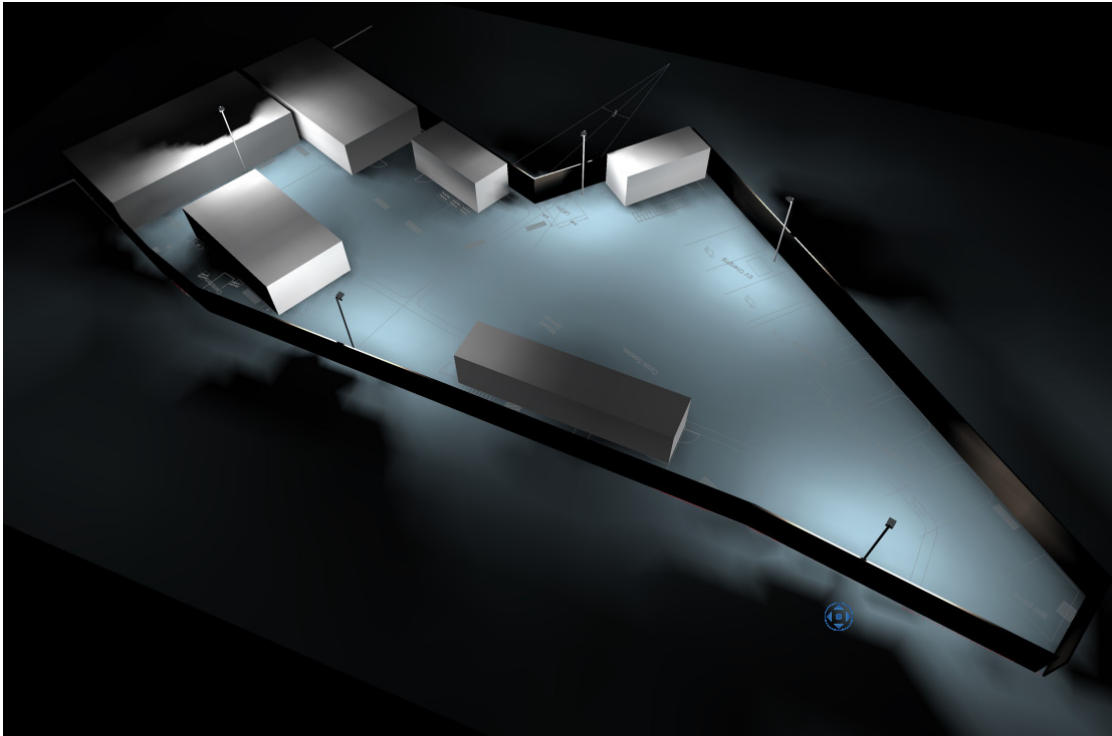
Note: Light output is defined as 99.3% down (below horizontal), 0.7% up (above horizontal)

Proposed Lighting Control

Lighting shall be switched using programmable timers to only switch on the lighting for pre-determined hours, and photocell sensors to only allow the lighting to operate during hours of darkness.
(The hours of operation are to be agreed with the client).

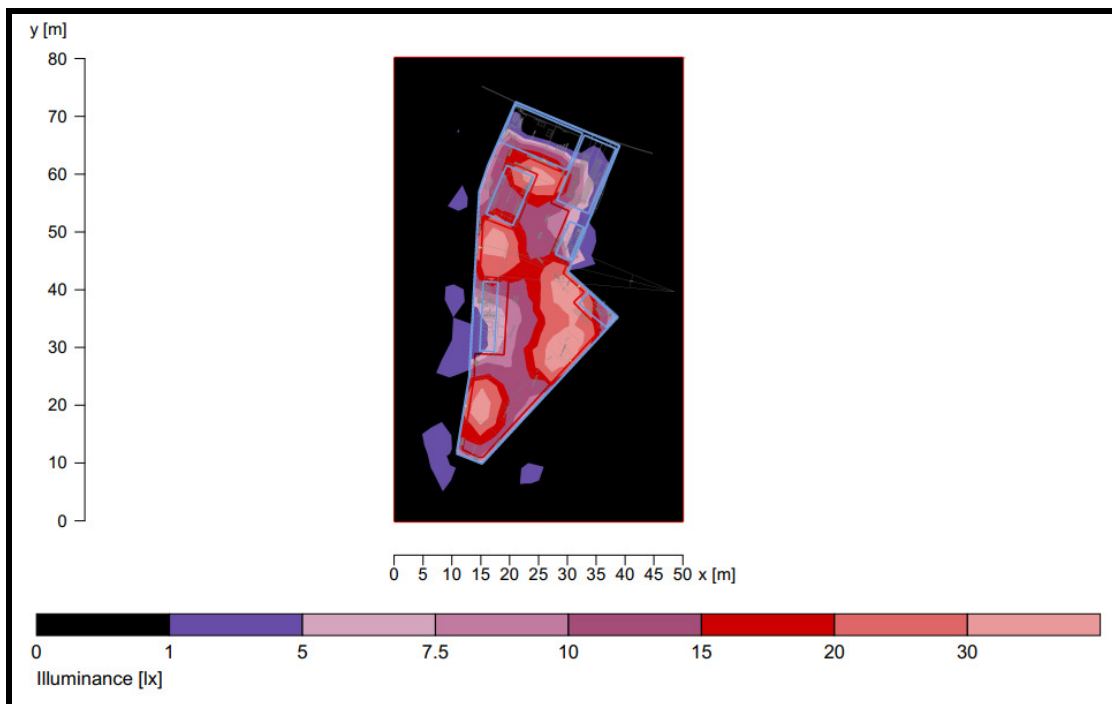
4. Lighting Calculation Results

Proposed External Lighting Layout drawing, showing the proposed lighting column and luminaire positions, and a rendering of the calculated lighting levels achieved.



The calculation shows that the predicted lighting levels are:

20.5lux average, 8 lux minimum, 38.2 lux maximum, 0.39 uniformity
(Target: 20 lux, 0.25 uniformity)



Comments:

The calculated lighting levels are very close to the target levels. The difference is considered to be not significant.

Uniformity levels are better than the target values.

Overspill is kept to a minimum by the optical control of the luminaires, and the aiming and positioning, but will be further cut off by the fitting of baffles

The plot shows minimal intrusion into the surrounding areas, with only very low levels of light traveling a short distance over the boundary.

There are no residential properties within the light-fall area. Therefore the requirement for the reduction of obtrusive light, as defined in BSEN 12464-2, which sets a maximum of 2 lux measured at the nearest residential buildings is not a concern.

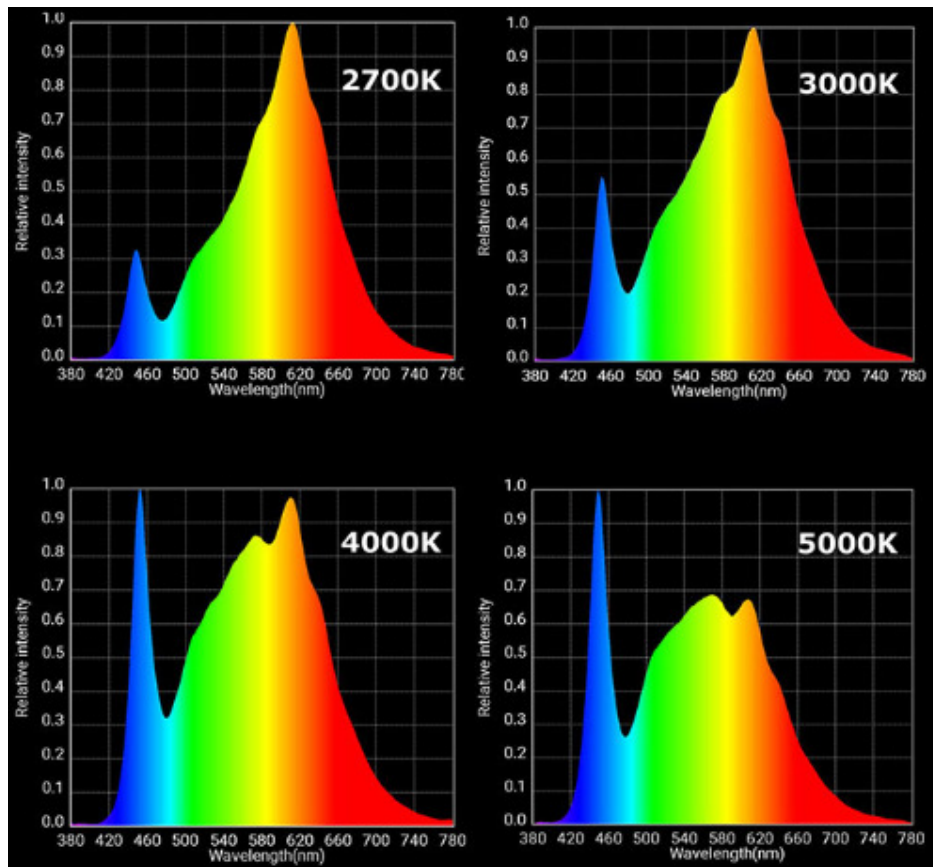
The polar chart the luminaire show that there is limited light output at shallow angles, and there is almost no direct upward light (0.7%). Suitable for Environmental Zone 1 use as defined in BSEN 121464-2 clause 4.5, Table 2

Table 2 — Maximum obtrusive light permitted for exterior lighting installations

| Environmental zone | Light on properties | | Luminaire intensity | | Upward light ratio | Luminance | |
|--|-------------------------|-------------|---------------------|-------------|--------------------|-----------------------------|-----------------------------|
| | E_v lx | | I cd | | R_{UL} % | L_b cd·m ⁻² | L_s cd·m ⁻² |
| | Pre-curfew ^a | Post-curfew | Pre-curfew | Post-curfew | | Building facade | Signs |
| E1 | 2 | 0 | 2 500 | 0 | 0 | 0 | 50 |
| E2 | 5 | 1 | 7 500 | 500 | 5 | 5 | 400 |
| E3 | 10 | 2 | 10 000 | 1 000 | 15 | 10 | 800 |
| E4 | 25 | 5 | 25 000 | 2 500 | 25 | 25 | 1 000 |
| <p>where</p> <p>E1 represents intrinsically dark areas, such as national parks or protected sites;</p> <p>E2 represents low district brightness areas, such as industrial or residential rural areas;</p> <p>E3 represents medium district brightness areas, such as industrial or residential suburbs;</p> <p>E4 represents high district brightness areas, such as town centres and commercial areas;</p> <p>E_v is the maximum value of vertical illuminance on properties in lx;</p> <p>I is the light intensity of each source in the potentially obtrusive direction in cd;</p> <p>R_{UL} is the proportion of the flux of the luminaire(s) that is emitted above the horizontal, when the luminaire(s) is (are) mounted in its (their) installed position and attitude, and given in %;</p> <p>L_b is the maximum average luminance of the facade of a building in cd·m⁻²;</p> <p>L_s is the maximum average luminance of signs in cd·m⁻².</p> | | | | | | | |
| <p>^a In case no curfew regulations are available, the higher values shall not be exceeded and the lower values should be taken as preferable limits.</p> | | | | | | | |

5. Notes

(1) Typical LED spectra shown below: 4000K is to be used.



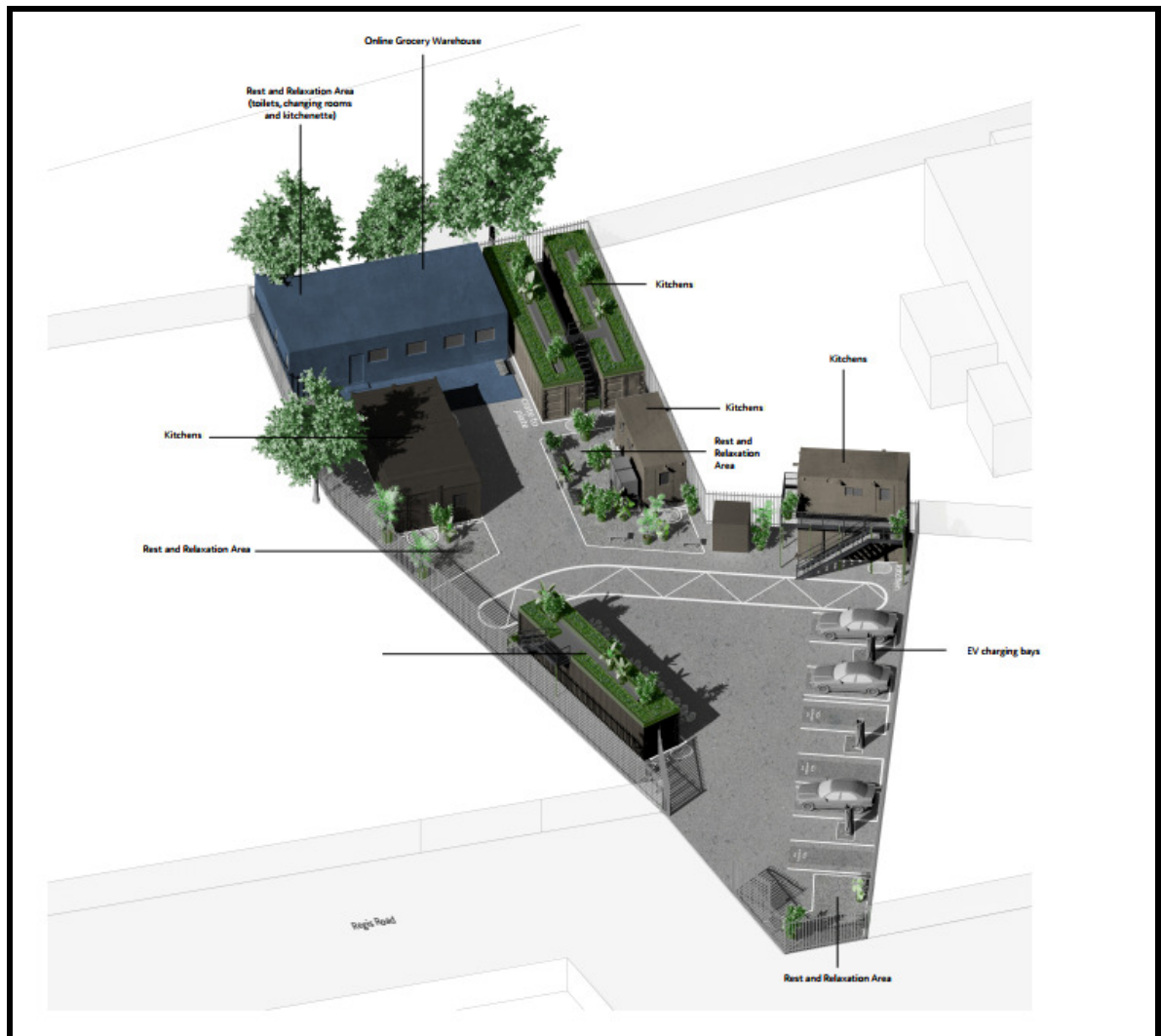
Note: the preferred colour temperature for reducing effect on wildlife is “3000K or lower”. There are no Ecological issues reported as being a consideration for this site. Hence 4000K has been opted for.

(2) Baffles/shields to be tailor-made and fitted where required for each location.



(3) Exclusions

Some of the buildings are intended to have planting on the roof to soften the visual impact. Access is provided for maintenance, watering. It has been assumed such tasks will be undertaken during day light and illumination dedicated to this higher level is not required.



It is assumed displays and instruction with small text on the BP EV chargers will be self-illuminated and the general level of illumination will be sufficient to facilitate use of the facility.

Lighting External to the main gate.

Policy A1 Managing the impact of development

The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.

We will:

- a. seek to ensure that the amenity of communities, occupiers and neighbours is protected;
- b. seek to ensure development contributes towards strong and successful communities by balancing the needs of development with the needs and characteristics of local areas and communities;
- c. resist development that fails to adequately assess and address transport impacts affecting communities, occupiers, neighbours and the existing transport network; and
- d. require mitigation measures where necessary.

The factors we will consider include:

- e. visual privacy, outlook;
- f. sunlight, daylight and overshadowing;
- g. **artificial lighting levels;**
- h. transport impacts, including the use of Transport Assessments, Travel Plans and Delivery and Servicing Management Plans;
- i. impacts of the construction phase, including the use of Construction Management Plans;
- j. noise and vibration levels;
- k. odour, fumes and dust;
- l. microclimate;
- m. contaminated land; and
- n. impact upon water and wastewater infrastructure.

Visual privacy and outlook

- 6.4 A development's impact upon visual privacy, outlook and disturbance from artificial light can be influenced by its design and layout. These issues can affect the amenity of existing and future occupiers. The Council will expect that these elements are considered at the design stage of a scheme to prevent potential harmful effects of the development on occupiers and neighbours. Further detail can be found within our supplementary planning document Camden Planning Guidance on amenity.

Artificial lighting levels

- 6.6 Camden's dense character means that light pollution can be a bigger problem in the borough than in lower density areas where uses are not so close together. Artificial lighting should only illuminate the intended area and not affect or impact on the amenity of neighbours.
- 6.7 Developments in sensitive areas, such as those adjacent to sites of nature conservation, should employ a specialist lighting engineer accredited by the Institute of Lighting Engineers to ensure that artificial lighting causes minimal disturbance to occupiers and wildlife. For further information please see our supplementary planning document Camden Planning Guidance on amenity.

- 6.34 The success and viability of open spaces is closely linked to the scale, character and quality of the adjacent townscape and development. We will resist proposals which would affect the use and enjoyment of an open space through detrimental changes to its setting. This includes changes to the space's appearance or character, effects on the microclimate, levels of external light or noise pollution and overshadowing, overlooking or disruption to views in or out of the space.

Secure design and crime prevention through urban design

- 7.18 Design should create safe and attractive places and be designed to prevent crime and antisocial behaviour. The impacts of proposals on crime and community safety should be considered and addressed from an early stage in the design process to prevent the need for reactive security measures. Access and movement routes, the layout of buildings, overlooking and active frontages, lighting, the clear delineation of spaces and ownership and the creation of activity all play a role in designing out crime. The Council will seek to maintain good accessibility in urban areas to foster flows of movement which produce vitality and natural surveillance and in doing so increase safety. Gating as a solution to crime and antisocial behaviour problems will be resisted unless there are exceptional circumstances. Further details are set out in supplementary planning document Camden Planning Guidance on design and in the document Safer Places – The Planning System and Crime Prevention (ODPM April 2004). Please refer to Policy C5 Safety and security for further information.