ABLEY LETCHFORD PARTNERSHIP
Consulting Engineers

TECHNICAL NOTE

Project Title:	**Webbs Court, Lyneham**
Project No/ Document Reference:	**HD012-R010 A**
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STREET LIGHTING PRINCIPLES

1 Context

1.1. This Technical Note outlines the design principles surrounding the proposed street lighting for Webbs Court, Lyneham.

1.2. The site is located east of MOD Lyneham, on the Southern side of South View, A3102. The site is split in two different parcels.

1.3. The site proposals comprise up to 56 dwellings, residential development together with new vehicular and pedestrian access, associated infrastructure, public open space and landscaping.

1.4. The proposed lighting design reflects national and latest local Wiltshire County Council standards for lighting in accordance with British Standards BS 5489-1:2020.

1.5. In order to mitigate the effect on sensitive receptors the following measures should be applied:

- Wherever possible, ensuring the use of controlled light distribution, minimal tilt, optimised optics (flat glass-controlled light distribution below the horizontal) and considered luminaire positioning/minimal heights are employed;
- Modern, LED luminaires should be employed throughout the site to minimise the obtrusive light spill footprint and be as energy efficient as possible;
- All luminaires used around the perimeter of the site should be mounted within the Site, so that the main photometric distribution of the luminaire will be towards the task area, keeping all light within the boundary of the development and preventing artificial light spilling outside of this;
- The implementation of a lighting scheme that is sensitive to the habitats identified within the ecology report;
- Wherever necessary, adopting a light quality that minimises disruption to existing ecological systems.

1.6. This report should be read in conjunction with drawing reference HD012-RM-11 Lighting Lux Layout for drawing information.

2 Environmental Zone Classification

2.1. Table 2: Environmental Zones of The Guidance Note for the reduction of obtrusive light Guidance Note 01/20 was referred to determine the appropriate Environmental Zone for the site at Webbs Court, Lyneham.

Table 2: Environmental Zones

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Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

Notes:

1. Where an area to be lit lies on the boundary of two zones the obtrusive light limitation values used should be those applicable to the most rigorous zone.
2. Rural zones under protected designations should use a higher standard of policy.
3. Zone E0 must always be surrounded by an E1 Zone.
4. Zoning should be agreed with the local planning authority and due to local requirements a more stringent zone classification may be applied to protect special/specific areas.
5. SQM (Sky Quality Measurements) referenced by the International Dark-Sky Association (IDA), the criteria for E0 being revised in mid 2019 but not retrospective.
6. Astronomical observable dark skies will offer clearer views of the Milky Way and of other objects such as the Andromeda galaxy and the Orion Nebula.
7. Although values of SQM 20 to 20.5 may not offer clear views of astronomical dark sky objects such as the Milky Way, these skies will have their own relative intrinsic value in the UK.

2.2. Having reviewed the setting of the proposed site, which will be Rural in nature. The new proposed development is situated in a relatively dark outer suburb. Therefore, the site is classed as E2.

3 Lighting Class

3.1. The proposed site comprises subsidiary roads with typical speed of main user v ≤ 30 mph.

Table A.5 (from BS 5489-1:2020)

Table A.5 — *Lighting classes for subsidiary roads*

Traffic flow	Lighting class		
	E1 to E4[A]	E1 to E2[A]	E3 to E4[A]
	Pedestrian and cyclists only	Speed limit $v \leq 30$ mph	Speed limit $v \leq 30$ mph
Busy [B]	P5	P4	P3
Normal [C]	P5	P5	P4
Quiet [D]	P6	P5	P4

NOTE 1 Table A.5 assumes no parked vehicles; see risk assessment in A.3.3.2.

NOTE 2 An EV lighting class using vertical illuminance, from BS EN 13201-2:2015, Table 6, can be specified in addition to the general lighting class when there are particular concerns about crime and personal safety. EV is calculated at the typical height of a human face (1.5 m) and in relevant viewing orientations.

NOTE 3 To ensure adequate uniformity, the actual value of the maintained average illuminance is not to exceed 1.5 times the value indicated for the class.

NOTE 4 The actual overall uniformity of illuminance, U_o, needs to be as high as reasonably practicable (see 7.2.6).

NOTE 5 The ambient luminance descriptions E1 to E4 refer to the environmental zone as defined in ILP GN01 [N2].

NOTE 6 The illuminance classes are suggested minimum levels. A risk assessment needs to be carried out to ensure that the light levels are adequate, particularly for pedestrians and cyclists.

[A] Environmental zone, as given in ILP GN01 [N2].

[B] Busy traffic flow refers to areas where the traffic usage is high and can be associated with local amenities such as clubs, shopping facilities, public houses, etc.

[C] Normal traffic flow refers to areas where the traffic usage is of a level equivalent to a housing estate access road.

[D] Quiet traffic flow refers to areas where the traffic usage is of a level equivalent to a residential road, and is mainly associated with the adjacent properties or properties on other equivalent roads accessed from this road.

Table A.1 (from BS 5489-1:2020)

Table A.1 — *Lighting classes of comparable level*

M class	C class	P class
—	C0	—
M1	C1	—
M2	C2	—
M3	C3	P1
M4	C4	P2
M5	C5	P3
M6	—	P4
—	—	P5
—	—	P6

NOTE The data in this table are extrapolated from PD CEN/TR 13201-1:2014.

3.2. In line with BS 5489-1:2020, using the E2 Environmental Zone classification and design speed of roads of speed limit v ≤ 30mph and the traffic flows are likely to be Quiet to Normal. This gives a Lighting Class of P5.

3.3. Therefore, the Lighting Class for the onsite adoptable roads is P5.