
Highway Street Lighting

The County Council provides a comprehensive street lighting design expertise using the latest specifications and computer aided design facilities. These designs will show the minimum number of lights to meet the appropriate category of lighting laid down in the B.S. 5489 taking into consideration the most economical and cost effective installation, keeping both the capital cost and the ongoing maintenance and energy cost to a minimum. The County Council is particularly concerned with the ongoing maintenance and reliability of equipment; therefore we have standardised on the type of equipment that is specified. At present the County Council are maintaining approximately 53,023 street lights and 6,090 illuminated signs (30th April 2002).

The County Council have resolved to make a charge for design work which it carries out for third parties, for the fee is based on 5% of the estimated capital cost of the installation/erection works, subject to a maximum & minimum charge for each section 38 or 278 Agreement. If a Developer/Consultant wishes to make arrangements to carry out their own street lighting design a specific design brief must be obtained from Oxfordshire County Council Electrical Services Lighting Section. The design must then be submitted to A Palman-Brown telephone number 01865 810408 Electrical Services-Lighting Department for approval prior to any installation work commencing on site.

Please note that lighting designs submitted on more than two occasions that an administration charge of £50.00 for each subsequent submission will be required before approval can be given. Failure to seek approval of the street lighting design will prevent adoption taking place.

All schemes whether designed by the Consultant/Developer or ourselves must meet the following criteria:

1. Schemes shall be designed in accordance with relevant British Standards (BS 5489) & the County Council's street lighting design brief.
2. Schemes must be within the adoptable highway boundary, (i.e. an area agreed with the developer to be adopted and maintained by the County Council) and this must include any new additional street lights where necessary at the existing junction or the proposed new access. Design drawings must show alterations/removal of existing columns on site, including details of identification numbers of existing lighting to remain or to be removed.
3. Schemes shall be accompanied by computer printouts giving the following information.
 - a) For installations designed to BS 5489 Part 2 (columns of 8 metre mounting height and above).
 - i) Average Luminance: The average amount of light reflected from the road surface to an observer (measured in cd/m²).
 - ii) Overall Uniformity: The ratio of minimum to the average luminance over a defined area of road surface viewed from a specified observer position.
 - iii) Longitudinal Uniformity: (UL) The ratio of the minimum to the maximum luminance along a longitudinal line through the observed position on the carriageway.
 - iv) Threshold Increment: Classification applied to a lantern given the expected glare from the lantern.

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- b) For installations designed to BS 5489 Part 3 (Columns of 5/6 metre mounting height).
 - i) Average illuminance: The average amount of light which is falling on the road surface (which is measured in LUX a measure of illumination, one LUX equals one lumen per square metre).
 - ii) Minimum point illuminance: The minimum amount of light at any particular spot on the road surface.
- c) For Roundabouts.
 - i) Illuminance values for the whole roundabout and its immediate approaches, these are represented by ISO-LUX diagrams. (similar to gradient contours on maps).

All plans submitted showing the lighting design shall be to a scale of at least 1/500, with Column positions marked on the plans using the appropriate standard lighting symbols shown on the schedule Ref DB3. Two copies of plan will be required in order that when the scheme has been checked and approved one set can be returned showing the required identification numbers, which must be painted, on the columns in accordance with the Specification.

4. **Equipment Requirements.**

a) **Columns**

Tubular Steel

To BS 5649, BD 26/94 K factor of 1.8. Column finish to be G2a system AMENDED Oxfordshire County Council specification (Appendix 19.3) with 4th and a 5th coat being applied on site, 4th coat to be Dacrylate Silicone Alkyd undercoat ref: 90-33. 5th coat to be Dacrylate Silicone Alkyd Gloss finish ref: 90-line. RAL 6013 - Reed Green 90-260.

Each column and bracket shall carry a unique identification mark which indicates the column manufacturer, year of production and column and bracket data sheet reference number.

The column data sheet/advice note should also indicate Oxfordshire County Council amended G2A paint finish, of which a copy is to be provided.

See Drawing HSD/13/010 & HSD/13/015 for styles of columns and special notes. Generally requirements are as follows: -

5 metre	Style 2 with post top spigot adapter.
6 metre	Style 2 with post top spigot adapter.
8 metre	Style 1 c/w 0.3m projection bracket generally or Style 2 with post top spigot adapter.
10 metre	Style 1 c/w 0.3m projection bracket generally or Style 2 with post top spigot adapter.

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12 metre Style 1 c/w 0.3m projection bracket generally or Style 2 with post top spigot adaptor

The height of the proposed columns shall take into account the surrounding buildings etc. In order to establish appropriate column heights it will be necessary for you to contact the County Council in each case prior to design. Alternatively a separate schedule example DB1 is attached identifying the column heights appropriate to each type of road.

b) **Octagonal Columns**

To BS 5649, BD 26/94 K factor of 1.8. Column finish to be G2a system AMENDED Oxfordshire County Council specification (Appendix 19.3) with 4th and a 5th coat being applied on site, 4th coat to be Dacrylate Silicone Alkyd undercoat ref: 90-33. 5th coat to be Dacrylate Silicone Alkyd Gloss ref: 90-line finish. RAL 6013 - Reed Green. 90-260.

Each column and bracket shall carry a unique identification mark which indicates the column manufacturer, year of production and column and bracket data sheet reference number.

The column data sheet/advice note should also indicate Oxfordshire County Council amended G2A paint finish, of which a copy is to be provided.

See Drawing HSD/13/021 for style of column and special notes. Generally requirements are as follows: -

8 metre Style 9 Thames (Ayr if double arm) c/w 0.75m projection bracket

10 metre Style 9 Thames (Ayr if double arm) c/w 0.75m projection bracket.

12 metre Style 9 Thames (Ayr if double arm) c/w 0.75m projection bracket.

15 metre Style 9 Thames (Ayr if double arm) c/w 0.75m projection bracket.

c) **Approved Lanterns (All lanterns to be IP65 minimum)**

i) **SON Lanterns (Flat Glass or Curved Tempered or Dish Poly)**

Philips	SGS 203	100W	SON/T lantern - position 3
Philips	SGS 203	150W	SON/T lantern - position 3
Philips	SGS 203	250W	SON/T lantern - position 3
Urbis	Sapphire1	50W	SON/T lantern - mid position
Urbis	Sapphire1	70W	SON/T lantern - mid position
Urbis	Sapphire 2	100W	SON/T lantern - mid position
Urbis	Sapphire 2	150W	SON/T lantern - mid position
Urbis	ZX3	150W	SON/T lantern - mid position
Urbis	ZX3	250W	SON/T lantern - mid position

All Urbis lanterns to have lantern bodies finished in factory applied Reed Green RAL 6013

All SON lamps to be tubular type. Base design on standard SON/T lamps **not** SON plus, with the exception of the 50 & 100 watt SON/T.

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All SON lanterns must have integral gear, with miniature electronic PECU fitted.

ii) **SOX Lanterns**

Philips MA90 GOS 90W SOX lantern - position 3

Philips MA50 GOS 135W SOX lantern - position 3

All SOX lanterns must have integral gear, with NEMA socket and one piece electronic PECU fitted.

d) **Switch Control**

SON Lanterns

Solar Enterprises Ltd SELC 849. Miniature Bulkhead One piece photo cell set at 100 LUX.

SOX Lanterns

Solar Enterprises Ltd SELC 841. One piece plug in photo cell set at 100 LUX

5. **Erection of Equipment**

- a) All equipment installation and wiring must be carried out in accordance with the standard details drawings listed below.

HSD/13/005 Column Erection

HSD/14/035 Fusing Requirements

HSD/14/045 Wiring Requirements

Any other relevant drawing provided with this design brief.

- b) Erection work to be carried out by an Oxfordshire County Council approved Contractor. (See attached List of Approved Contractors).
- c) Columns to be sited at the rear and within the footpath and within adoptable area.
- d) All columns are to be numbered, in accordance with the approved street lighting drawing at 3 metres from ground level in accordance with Oxfordshire County Council Specification.
- e) All electrical equipment shall comply with Oxfordshire County Council Current Technical Specification, which can be obtained from Electrical Services - Lighting Department.
- f) Regional Electricity Company statutory owned services must be installed into each street lighting column and illuminated signs. Private underground cable networks are not acceptable.

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6. **Setting Out Column Positions**

It will be the responsibility of the Consultant/Developer, depending on who carries out the initial design, to mark out on site final column positions in accordance with the approved design with the street lighting contractor and to deal with any correspondence/queries that may arise either with the Developer or members of the public etc, but copies of correspondence/responses should be forwarded to the street lighting section of Oxfordshire County Council for our records.

7. **Electrical Testing**

The Street Lighting erection contractor must test all installations; generally the testing must be in accordance with BS7671 current at time of installation and in accordance with the requirements of Oxfordshire County Council (notes for guidance on electrical testing are available from the County Council). A copy of the completed Test Certificate must be sent to the Street Lighting section of Oxfordshire County Council. E.g. Ref DB4

8. **Final Inspections**

The County Council will carry out a full inspection of the street lighting installation prior to handing over. Any defects noted up on inspection will be identified and referred back to the Consultant or Developer. The defects must be remedied within eight weeks of the defect report being issued to the Consultant or Developer.

9. **Commuted Sums**

The developer will be required to make a one off payment to the County Council Development Control Section for the following:-

a) **Section 38 Agreements**

The cost for installing replacement lamp in each street light on completion of adoption. This cost will apply to each street light that is subject to a Section 38 Agreement.

b) **Section 278 Agreements**

The cost of maintenance and replacement for each street light based on a 30 year design life period. The cost will apply to each street light that is subject to a Section 278 Agreement.

An up-to-date Scale of Charges can be obtained from Oxfordshire County Council (Development Control).

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Schedule DB1

Name of Developer/Consultant:-ABC Consulting Engineers

Location:- Carterton A40 Link Road Extension

(Off Northern Avenue Roundabout)


























A File Reference Number:- A3295

Road Type	Column Height	Column Type	Lantern Type	Light Source	BS5489 Part	Lighting Category
Existing Highway Equipment	10m	Style 9	Urbis ZX3 (Oxford Spec) Ref:-ZX3NB/250/1289/FG/ SELC849/RAL6013/GR/881451/LP	SON	2	2
Existing Highway Equipment	10m	Style 9	Urbis ZX3 (Oxford Spec) Ref:-ZX3NB/250/1289/FG/ SELC849/RAL6013/GR/881451/LP	SON	2	2
Intermediate Road						
Minor Access						
Cycleway						
Roundabouts	10m	Style 9	Urbis ZX3 (Oxford Spec) Ref:- ZX3NB/250/1289/FG/SELC849/ RAL6013/GR/881451/LP	SON	4	2/3
Other (Specify):						

Comments: i) All designs are based on a standard SONT Lamp unless specified
ii) Maintenance Factor - 0.87

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Standard Lighting Symbols - Schedule DB3

	5m with bracket		10m post top
	5m post top		10m wall mounting with bracket
	5m wall mounting with bracket		10m wall mounting
	5m wall mounted		12m with bracket
	6m with bracket		12m post top
	6m post top		12m wall mounting with bracket
	6m wall mounting with bracket		12m wall mounting
	6m wall mounting		15m with bracket
	8m with bracket		15m post top
	8m post top		School crossing flashing signal
	8m wall mounting with bracket		Bollard
	8m wall mounting		Sign
	10m with bracket		

