

**STREET LIGHTING  
AND ILLUMINATED SIGNS**

**SPECIFICATION AND NOTES FOR GUIDANCE TO CONSULTANTS,  
DEVELOPERS AND CONTRACTORS  
August 2007**

**Contents**

1. This Document is split into sections and covers the following service delivery areas: -
  - Section A** - Lighting of Public Highways, covering carriageways, footway, footpaths not adjacent to carriageways, and cycle ways
  - Section B** - Illuminated signs
  - Section C** - Lighting on new Developments

This document is not exhaustive of the requirements of City of York Council and should be read in conjunction with the current Street Lighting Specification. Any inaccuracies are to be reported to the Engineer. The Councils decision is final.

**Section A**

**LIGHTING OF PUBLIC HIGHWAYS, FOOTPATHS AND CYCLEWAYS**

**Objectives of the service**

2. When installed, public lighting shall contribute to the safe use of the public highway concerned by those on foot and in vehicles and shall not, by its presence, create or contribute in any manner to any pre-existing or new safety hazard on that highway.
3. Lighting equipment shall enhance the streetscape both during the hours of darkness and during the day. Care will be taken to minimise lighting pollution and energy efficient light sources shall be used.

**General Principles**

4. Luminaires are to be mounted on lighting columns. These are to be circular in section and manufactured from steel to BS EN 40, hot dipped galvanised to BS 729 and painted in accordance with paragraphs 20 to 23. Roots shall be bitumen coated.
5. If practicable and approval is granted by the adopting authority, lighting may be provided by the attachment of luminaires to buildings. In this instance, the necessary agreement(s) shall be sought from the owner and tenant(s).

6. When lighting equipment is installed on buildings care shall be taken when selecting and erecting equipment so as to minimise the visual impact caused.
7. Columns and lantern fixings shall be sized to the minimum dimensions required to support the forces generated by the lantern and to resist wind factors, as shown in the table below.

<b>Column Height</b>	<b>Exposure Class</b>	<b>K Factor</b>
5 m	1	2.2
6 m	1	2.2
8 m	1	2.2
10 m	1	2.2
12 m	1	2.2

8. Columns shall be sited in accordance with BS 5489.
9. Where a lighting column is located in a footway the clear width between it and the furthest edge of the footway shall not be less than 1.2m.
10. Columns shall be painted (as specified hereafter) and individually numbered within each street at a height above road level of not less than 1.6 m. Numbers shall be visible to oncoming traffic.
11. Numbers shall be black on a white rectangular patch.
12. Optical compartments of luminaires shall be sealed to IP65 minimum and gear compartments shall be sealed to IP54 minimum.
13. All equipment and work shall be supplied and undertaken in accordance with the current Specification, Codes of Practice and British Standards/European Norms where applicable.
14. Where it is proposed to install new or substantially alter existing lighting the view of the Parish Council and Ward Committee shall be obtained prior to any commitment to a scheme being installed. In the case that the Parish Council or Ward Committee feel that lighting should not be provided, the matter shall be referred to The Executive for resolution.

### **Road lighting – illumination requirements**

15. Generally, lighting shall be operational throughout the hours of darkness (dusk to dawn/70 lux on, 35 lux off).
16. Lantern control shall be by means of photo electronic control units. Where lighting is group controlled a suitable time clock shall be selected to comply with paragraph 15 and be capable of automatically adjusting for British summertime variations and leap years.

### **Level of illumination**

17. New lighting schemes are to comply with BS 5489 and BS EN 13201. Further guidance is given in Appendix 1.

### **Illumination source**

18. Generally, light sources shall be High Pressure Sodium (SON/T+) except where a unit is being replaced in a system of existing units in which event the same type of light source as the rest of the system is to be used. If the existing units are MBFU the replacement luminaire shall be SON/T+ type. The use of sources with a high colour rendering (Ra) are permissible and should be used in accordance with BS5489.

### **Inspection of Units**

19. Inspections shall be undertaken as follows: -
  - The lanterns and base compartments shall be cleaned as described in the current maintenance contract
  - A visual inspection of the condition of all columns, brackets and lanterns, fixings and associated wiring shall be undertaken at each maintenance visit (reactive or routine)
  - A full structural condition survey of all columns shall be undertaken upon the instruction from the Street Lighting Engineer
  - A full electrical test of all equipment shall be undertaken at least every 6 years.

### **Painting of road lighting units**

20. Columns and brackets shall be painted and the following is a general guide to painting. The Street Lighting Engineer will be able to issue instructions relating to specific locations.
21. With decorative units, or with units in conservation areas, painting will be undertaken within 10 working days of erection. In other locations, where newly galvanised units are used, painting will be carried out 5 years from the time of installation. This will enable full use of the benefits of the galvanised process and will also allow the galvanising to 'weather' sufficiently to accept the paint.
22. Where, due to maintenance works or a vehicle knockdown replacement a single column is replaced in a system of street lighting, that column will be painted to match those in the rest of the street. Alternatively, where those columns are not painted then the replacement column will be left unpainted.
23. Paint shall have a required durability of: -

- No maintenance up to eight years
- Minor maintenance after eight years
- Major maintenance after fifteen years

**Road lighting units – electrical supply**

24. It is assumed that most road lighting equipment is sited in low risk areas; therefore, a Regional Electricity Company supply shall be necessary. For further guidance contact the Street Lighting Engineer.

## Section B

### **ILLUMINATED SIGNS**

#### **Objectives of the service**

25. This policy is not exhaustive of the requirements of City of York Council and is to be read in conjunction with the current Street Lighting Specification and City of York Council Signs Policy. Any inaccuracies are to be reported to the Engineer. The Council's decision is final.
26. When installed an illuminated sign shall contribute to the safe use of the footway, cycleway or road concerned by those on foot, on cycles and in vehicles and shall not, by its presence, create or contribute in any manner to any pre-existing or new safety hazard.
27. Illuminated signs shall enhance the streetscape, both during the hours of darkness and during the day. Care will be taken to minimise lighting pollution. Energy efficient light sources will be used.

#### **General principles**

28. All traffic signs are to comply with the Traffic Signs Regulations and General Directions.
29. Signs that require illumination under the above Regulations will be internally illuminated where possible.
30. Sign faces and associated luminaires are to be mounted on appropriately sized sign poles. These are to be circular in section and manufactured from steel to BS EN 40, hot dipped galvanised to BS 729 and painted in accordance with paragraphs 44 to 46. Roots are to be bitumen coated.
31. If practicable and approval is granted by the adopting authority, signs may be attached to buildings. In this case, the necessary agreement(s) shall be sought from the owner and tenant(s).
32. When signs and associated cabling are installed on buildings care shall be taken when selecting and erecting equipment so as to minimise the visual impact.
33. Traffic signposts shall be sized to the minimum dimensions required to support the forces generated by the sign and associated wind pressure.
34. Illuminated traffic signs shall be sited in accordance with paragraphs 8 and 9.
35. Traffic signposts shall be painted (subject to the proviso in paragraphs 44 to 46) and individually numbered within each street at a height above ground level of not less than 1.6 m. Numbers shall be visible to oncoming traffic. See the current Street Lighting Specification for further guidance.

36. Numbers shall be black on a white rectangular patch.
37. External illumination units shall have a minimum ingress protection rating of IP56.
38. Internal illumination units shall have a minimum ingress protection rating of IP65.
39. All Equipment and work shall be supplied and undertaken in accordance with the current Street Lighting Specification, Codes of Practice and British Standards/European Norms.
40. Externally illuminated signs will be Retro reflective to Class 1 minimum and manufactured from aluminium in accordance with the requirements of The Traffic Signs Regulations and General Directions.

#### **Traffic signs – illumination requirements**

41. Where signs are to be illuminated they shall be operational as described in paragraphs 15 and 16.

#### **Mounting of illumination units**

42. Where external illumination units are used, these are to be mounted directly over the centre of the sign being illuminated. Unless the size of the sign is such that illumination from above is not suitable, illumination from below may be permitted. Mounting arrangements for all luminaires mounted on sign posts are to be agreed with the Street Lighting Engineer.
43. Overhead mounted illumination units shall be placed as close as practically possible to the top of the sign being illuminated with no part of the column or supporting fixings protruding above the top line of the illuminating unit. See the current Street Lighting Specification for further guidance.

#### **Painting of traffic sign posts, brackets and illumination units**

44. The standard colour will be Black (ACC Ref LO:10:10) in Conservation areas and the City Centre and Traffic Grey elsewhere.
45. Where, due to maintenance works or a vehicle knockdown replacement, a single traffic signpost is replaced in a system of street lighting, then that signpost will be:
  - Painted black to match existing black equipment
  - Painted traffic grey in all other installations.
46. Paint shall have a required durability of: -
  - No maintenance up to eight years
  - Minor maintenance after eight years
  - Major maintenance after fifteen years

### **Illuminated signs – electrical supply**

47. Each sign included in the scheme is to be assessed as to whether it would be a safer option to supply the sign via a private cable network. If the sign is considered to be in a low risk location the supply is to be obtained from the Regional Electricity Company. For further guidance contact the Street Lighting Engineer.

### **Illuminated bollards**

48. Illuminated bollards will be of the base lit type and fitted with a flexible shell. The base light assembly shall have an ingress protection rating of IP67.

### **Illuminated bollards – illumination requirements**

49. Bollards shall be illuminated in the hours of darkness.

### **Illuminated bollards – electrical supply**

50. It is assumed that all illuminated bollards are located in high-risk areas; therefore, supply via a private cable network shall be required. For further guidance contact the Street Lighting Engineer.

### **Inspection of illuminated signs and bollards**

51. Inspections shall be undertaken as follows: -
  - The lanterns and base compartments shall be cleaned as described in the current maintenance contract
  - A visual inspection of the condition of all posts, brackets and lanterns, fixings and associated wiring shall be undertaken at each maintenance visit (reactive or routine)
  - A full structural condition survey of all signposts and brackets shall be undertaken upon instruction for the Street Lighting Engineer.
  - A full electrical test of all equipment shall be undertaken at least every 6 years.

## **Section C**

### **LIGHTING ON NEW DEVELOPMENTS**

#### **Objectives of the service**

52. When required under Planning conditions and or agreements, installed lighting on New Developments shall comply in all respects with the provisions of the preceding sections and the current Street Lighting Specification. Any inaccuracies are to be reported to the Street Lighting Engineer. The Council's decision is final.
53. Where a development extends to an existing road upon which there is an existing system of street lighting the developer is to seek guidance from the Street Lighting Engineer as to the requirements of the proposed extension.

#### **Design of the lighting system**

54. The City of York Council offers an in house design and installation service.
55. The developer may design and install his own lighting scheme. In which case the developer shall submit details of the proposed system for approval to the Council. No lighting will be adopted by the Council until such approval has been obtained and a Section 38 Agreement entered into by the Developer. See Appendix 1 for further guidance.
56. Appendix 1 lists the standard range equipment which all persons providing new lighting or new illuminated signs will be expected to adhere to wherever possible. Any departures from these standards are to be agreed in writing with the Street Lighting Engineer prior to work commencing. Where no such prior agreement has been made the City Council reserves the right not to adopt the lighting or illuminated signs concerned
57. Where a Developer or Ward Committee elects to use equipment which is different to that currently in use by City of York Council, then this will be permitted, subject to the following: -
  - The equipment is approved for installation by the Street Lighting Engineer
  - Spare equipment i.e. lanterns, bollard bases etc. is to be supplied to the Council at no cost. The quantity to be supplied shall be 10% (rounded up) of that installed.

#### **Electrical Supplies**

58. Refer to paragraphs 24, 47 and 50.



### **Maintenance of the unadopted lighting system including illuminated traffic signs**

59. The developer shall be responsible for the maintenance (including replacement for damaged columns and the like) of the new equipment and any existing equipment affected by the works from the date of commencement of works up to and including the date of adoption.
60. The developer shall be responsible for the purchase of energy of the newly installed lighting system from the date of equipment being energised up to and including the date of adoption.
61. Immediately prior to the final adoption certificate being issued a bulk lamp change and clean shall be carried out by the developer. Dependant on the age of the installation, the Council may request electrical testing etc. The Council will require the columns or brackets to be painted prior to adopting even if the units are galvanised and less than 5 years old. Where units have already been painted, the Council may request repainting depending on the condition or age of the existing paint finish. All of the above works shall be carried out by the developer at his own expense.
62. The adoption of the illuminated equipment shall be subject to an inspection carried out by the Council. All remedial works arising from such an inspection shall have to be rectified before adoption.

### **Maintenance Operations**

63. **Outage inspections** - All units shall be scouted in accordance with current Street Lighting Specification.
64. **Bulk lamp changes** - Lamps are to be replaced as described in the current Street Lighting Specification.
65. **Fault reporting** - Reports of faults may be made by: -
  - Telephone, or
  - By letter

In all events a record is to be made of the date the fault report was received and the date it was rectified.

**REQUIREMENTS OF NEW STREET LIGHTING PROVIDED BY DEVELOPERS OR OTHERS WHICH IS INTENDED TO BE ADOPTED BY THE CITY COUNCIL**

Street lighting and illuminated traffic signing scheme proposals shall have to satisfy the requirements listed below.

1. The submission must include a detailed specification and layout plan showing the units to be installed, removed or altered.
2. The design shall comply with BS 5489 and BS EN 13201
3. Lighting and power calculations shall be submitted where appropriate
4. Schematic drawings detailing cable types and sizes, fusing arrangements and associated control equipment shall be submitted where appropriate
5. A redesign will have to be submitted where changes have been made which affect the original submission. As built drawings and test certificates in accordance with BS 7671 will also have to be submitted to the authority.
6. Arrangements must be made with the regional electricity company to obtain electricity supplies to the proposed street furniture, including across road ducting where appropriate. You must notify your Section 38 Engineer when this is in place
7. Equipment should be sited in the public highway. If unavoidable then proposals affecting private property must include the land owners (and if applicable the tenants) written consent in the form of a wayleave
8. The developer shall be responsible for all power supply costs and maintenance of the equipment until the final certificate is issued
9. Set out below is the standard range of equipment used. If other products are preferred by the developer please contact the Section 38 Engineer
10. Immediately prior to the final certificate being issued a bulk lamp change and clean shall be carried out. Dependant on the age of the installation, the authority may also request repainting, electrical test and inspection etc. which shall be carried out by the developer at his own expense.

### Standard Range of Associated Street Lighting Equipment

<b>Item</b>	<b>Manufacturer</b>	<b>Model</b>
Paint system		Permoglaze Gloss Colour Black/ YorkGreen
Illuminated Traffic Bollards	Haldo	Base Lit Bollard with 2 x 11w PL lamps and Reflex Shell
Illuminated Traffic Signs	Simmons signs	
	Externally Illuminated	Type 'A' Signlight with 1 x 11w PL lamp
	Internally Illuminated	Invinca with 2 x 11w PL lamp
Zebra Crossing Beacon	Signature Safe Post	3 white/black bands with standard gallery and fluorescent lamp, yellow flexiglobe with Zebra flash, post 3.1m height above ground level with planted foundation.
Centre Island Beacon	Signature Safe Post	2 white/grey bands with standard gallery and fluorescent lamp, opal flexiglobe, post Abacus Hinged 4.7m length, 3.8m height above ground level with planted foundation.
Feeder Pillars	Haldo	Haldopillar with Tri-head Screw
Photo Cell	S.E.L.C. Cableform	841 one part PECU mounted in Nema socket
Cut Outs	SMK Tofco	DPI with BS 88 Fuse(s). Cut out to be rated up to 32A
Underground Cable		XLPE / SWA / PVC 2 Core Copper Cable

### Standard Range of Street Lighting Columns

<b><u>Manufacturer</u></b>	<b><u>Model</u></b>	<b><u>Mounting Height</u></b>	<b><u>Material</u></b>	<b><u>Bracket Arrangement</u></b>
Stainton	Metro	5m	Tubular Steel	Post Top
Stainton	Metro	5m	Tubular Steel	0.3m Web Style
Abacus	R & L	5m	Tubular Steel	Post Top
Urbis	Chatsworth	5m	Ornate	Post Top
Urbis	Blenhiem	5m	Ornate	0.8m Hooped Style
Stainton	Metro	6m	Tubular Steel	Post Top
Stainton	Metro	6m	Tubular Steel	0.8m Web Style
Abacus	R & L	6m	Tubular Steel	Post Top
Urbis	Chatsworth	6m	Ornate	Post Top
Urbis	Blenhiem	6m	Ornate	1.0m Hooped Style
Stainton	Metro	8m	Tubular Steel	Post Top
Stainton	Metro	8m	Tubular Steel	1.5m Web Style
Abacus	R & L	8m	Tubular Steel	Post Top
Urbis	Blenhiem	8m	Ornate	1.5m Hooped Style
Stainton	Metro	10m	Tubular Steel	2.0m Web Style
Stainton	Metro	12m	Tubular Steel	2.5m Web Style

Other column types and manufacturers may be used upon agreement with the Engineer.

**Standard Range of Street Lighting Lanterns**

<b>Manufacturer</b>	<b>Model</b>	<b>Mounting Height</b>	<b>Lamp Wattage</b>	<b>Source</b>
WRTL	Arc	5m	50W	SON/T+
WRTL	Arc	6m	70W	SON/T+
Urbis	ZX2	8m	100W	SON/T+
Urbis	ZX2	10m	150W	SON/T+
Urbis	ZX2	12m	250W	SON/T+
Holophane	QSM (IP54 Sealed)	All	All	SON/T+
Urbis	Abbey Medium	5m	50W	SON/T+
Urbis	Abbey Medium	6m	70W	SON/T+
Urbis	Abbey Large	8m	100W	SON/T+
Urbis	Opalo	Up to 6m	42W	PL
Holophane	QSS	All	Up to 150W	SON/T+

Currently CYC use the QSM and QSS on all standard installations pre-wired with electronic gear.

Other equipment specified may be used after confirmation by the Street Lighting Engineer and other items are currently being trialled within CYC for full approval.

## **STREET LIGHTING DESIGN GUIDE**

This text is a guide to the general principles, which are to be adopted when designing street lighting for installation within the boundary of City of York Council.

The comments are open to discussion and any irregularities are to be reported to the Engineer.

If further guidance is required contact the Engineer.

### **1. Lighting of Traffic Routes**

- 1.1 The surround ratio is to adhere to BS 5489:2003 where footways, cycle ways, verges etc are up to 5m in width beyond the effective width of the carriageway.
- 1.2 Where the adjacent footways, cycle ways and verges are greater than 5m in width beyond the effective width of the carriageway, a suitable CE Class is to be selected from BS 13201:2003.
- 1.3 If a scheme consists of numerous crests which, after the installation of new lighting may cause unnecessary glare to road users the entire installation is to meet G5 requirements or greater as specified in BS 5489:2003

### **2. Conflict areas and Junctions**

- 2.1 T-junctions are generally not considered as conflict areas. Only where an array of T-junctions may cause difficulty in placing columns as described in BS 5489:2003 Annex J conflict area status is to be assigned.
- 2.2 Major T-junctions (both roads being traffic routes) are to be as specified in BS 5489:2003 Annex J where practicable
- 2.3 T-junctions of any type, both major and minor roads, are to have column 'B' and 'D' installed as specified in BS 5489:2003 Annex J where practicable
- 2.4 Cross roads, roundabouts and major intersections are to be treated as conflict areas and the suitable levels to light such areas shall be extracted from table B3 of BS 5489:2003
- 2.5 Extents of conflict area are to cover intersecting roads, building line to building line and extended to include pedestrian crossings within 10m of the boundary of the area. See section 3 for further guidance on the lighting of pedestrian crossings.
- 2.6 Conflict area's are to include adjacent footpaths and cycle ways where appropriate.
- 2.7 Where a conflict area is located on or at the end of roads with no other street lighting equipment, a suitable lighting class shall be selected for that road and the approach shall be lit within at least 60m either side of the conflict area.
- 2.8 Conflict areas are to be illuminated to a higher class than the approach roads in accordance with BS 5489 Table B3.

### **3. Pedestrian Crossings**

- 3.1 Pedestrian crossings within the boundary of a conflict area shall be illuminated to no lesser degree than the conflict area itself

- 3.2 Zebra crossings are the only crossings where 'Zebra' type lanterns are to be used
- 3.3 Crossings not covered by the above comment are to be illuminated by means of negative contrast.

#### **4. Equipment in the vicinity of Aerodromes, Railways, Harbors and Waterways**

- 4.1 Equipment is to be selected and sited in accordance with BS 5489:2003.

#### **5. General Lighting Levels**

- 5.1 As a general rule, residential areas shall be designed to BS 13201:2003 and the relevant "S" category.
- 5.2 Where a residential road is used as a distributor to other residential roads, Classes S2 or S3 may be applied. The Engineer shall advise the use of these classes.
- 5.3 Back alleys shall be designed to BS 13201:2003 Class S4.
- 5.4 Traffic routes are to have the appropriate lighting class selected for the particular road(s) in question.
- 5.5 Light source for all installations is to be SON/T+ unless specified otherwise by the Project Engineer.

### **A1237 Moor Lane Roundabout – Street lighting design**

1. The design of the street lighting was carried out to comply with the correct design guidance and standards for the provision of street lighting and took due account of City of York Council's aims to minimise its environmental impact.
2. The initial design was challenged by a group of experienced officers and appraised using the procedure set out in proposed Policy SSL5 in the Sustainable Street Lighting Strategy, to ensure that every element of the proposed scheme was fully justified and the environmental impacts had been fully assessed.
3. The challenge process looked at all the options and variable elements of the scheme, and judgements were made to ensure the use of the lowest acceptable lighting levels that minimised energy use and light pollution.
4. An independent road safety audit had recommended the provision of lighting throughout the scheme. It was agreed, in the challenge process, that from a safety viewpoint the roundabout and its immediate approaches needed to be lit, noting that it is best practice to provide a minimum of 3 to 4 lighting columns on each approach. The extent of lighting on each approach was carefully analysed, taking into account public safety and the risk of dark accidents.
5. The outcome of this process is that on both the A1237 approaches the lighting will commence in the vicinity of the existing pedestrian refuge islands to illuminate the crossing points and the approaches to the roundabout. On Moor Lane it will link to the existing lighting and provide continuous lighting through to the roundabout which will help improve the safety of the bends. On Askham Lane the lighting includes the bend on the immediate approach to the roundabout and the pedestrian / cycle link to the A1237 crossing but does not extend through to the existing Askham Lane. Similarly on Askham Bryan Lane it includes the bend on the immediate approach to the roundabout but does not extend through to the existing Askham Bryan Lane.
6. The number and height of lighting columns was carefully considered. As it would be difficult to screen the lighting by planting, irrespective of whether the columns were 8m, 10m or 12m high, it was agreed to proceed with a design that minimised the number of lighting columns and hence lighting heads. This not only gives the cheapest solution in construction terms, but also produces the best value in operation and maintenance costs, and minimises the visual intrusion when viewed from a distance. The resultant scheme has 12m columns on the roundabout and A1237 approaches with 8m and 10m on the other side road approaches.

7. The proposed lighting units are Philips Iridium, which are considered to be to be one of the most highly efficient on the market. They are dark sky compliant with a flat glass head to reduce light pollution to an absolute minimum. The equipment is also designed for full disassembly at end of life and recycling.
8. The technology that would allow lowering of the initially high levels of illumination from the 250 watts luminaires cannot be included straight away in the scheme design because the products currently on the market have reliability problems. However, it is understood that a suitable product will be on the market in January 2008 and the design allows for these products to be retrofitted at a nominal cost when they become available.