

## **Part A      Design and Adoption Procedures**

### **1.0      *General Procedures***

- 1.1      The preferred procedure for adoption will be in accordance with the provisions of Section 38 of the Highways Act, 1980 and Developers are encouraged to enter into a formal agreement with the Council.
- 1.2      Where works associated with new developments involve work within an adopted highway which cannot be included in a Section 38 agreement, a further agreement under Section 278 of the Highways Act, 1980 must be obtained. This agreement must be agreed with the Council.
- 1.3      Where works associated with construction involve electrical work being undertaken within an area which is maintained by the Council's Street Lighting Section and such work is being carried out by a Section or Department of the Council or any other authority which cannot enter into a Section 38 or 278 agreement and who are not normally involved with the maintenance of such equipment, the works shall be designed, approved and constructed in accordance with this document.

### **2.0      *Design of Lighting Installations***

- 2.1      The design of lighting installations shall be in accordance with the latest edition of the following publications, incorporating any amendments issued:
  - ❖ British Standard and British Standard European Specifications:
    - Code of Practice for the Design of Road Lighting BS 5489-1:2013 & BS5489-2:2003.
    - Road Lighting (Performance Requirements) CEN/TR 13201-1:2004, BS EN 13201-2:2003, BS EN 13201-3:2003 & BS EN 13201-4:2003.
    - Lighting of Work Places (Outdoor work places) BS EN 12464-2:2007.
    - Requirements for Electrical Installations BS 7671.
    - Specification for Clarification of Degrees of Protection provided by Enclosures BS EN 60529.
    - Luminaries for Road and Street Lighting BS EN 60598 – 2 – 3: 1994.

- ❖ Health and Safety Publications:
  - Construction (Health, Safety and Welfare) Regulations, 1996.
  - Construction (Design and Management) Regulations 2007.
  - Disability Discrimination Act 2005.
  - Engineering Recommendations 'G39' of the Electricity Association.
  - Memorandum of Guidance on the Electricity at Work Regulations 1989.
  - Management of Health and Safety at Work Regulations, 1992.
  - New Road and Streets Work Act 1991.
  - Road Hump Regulations 1990.
  - The Electricity at Work Regulations 1989.
  - The Health and Safety at Work Act, 1974.
  - Traffic Sign Regulations and General Directions 1991.
  
- ❖ The Institution of Lighting Professionals publications:
  - Code of Practice for Electrical Safety in Highway Electrical Operations.
  - Guidance Notes for the Reduction of Light Pollution.
  - Technical Report No. 12 – Lighting for Pedestrian Crossings.
  - Technical Report No. 23 – Lighting of Cycle Tracks.
  - Technical Report No. 25 – Lighting for Traffic Calming Schemes.
  
- ❖ Other Publications:
  - Regional Electricity Company Requirements.
  - NJUG and Arboriculture Association Guidelines for trenching near trees
  - Highways Act 1980.
  - County Surveyors Society (CSS) Road Lighting Maintenance Code of Good Practice.

- 2.2 It is advisable to contact the Street Lighting Manager in the first instance to obtain a design brief. This can be used in order to assist in the provision of a design and will outline the Council specification. Consideration should be taken to ensure all existing hazards are taken into account in order to reduce/eliminate the hazards identified e.g. overhead lines. Street Lighting Design Risk Checklist form VS-HM-SL-FM83 is to be used for this purpose.
- 2.3 The street lighting design should take into consideration all relevant environmental factors, energy consumption and the reduction of CO2 emissions.
- 2.4 The Council's Planning and Conservation departments must be consulted on areas of a sensitive, historical, conservation and listed buildings status.

- 2.5 After design and before applying for a Section 38 agreement, the proposed installation shall be submitted for approval to the Street Lighting Manager. The submission shall comprise of the following:
- ❖ Scaled electronic location plan of the development and its surrounding area.
  - ❖ Scaled electronic general layout plan showing:
    - The detailed layout of the development.
    - The dimensioned widths of carriageways, footways, link paths, cycle routes and service margins.
    - The identified limit of adoption.
    - The location of street lighting columns and feeder pillars, including existing lighting installations together with the positions of any existing or proposed tree planting which might affect the illumination of the road.
    - Identified existing overhead services.
    - Numbered building plots, existing streets/roads and properties, named or numbered.
    - Proposed traffic calming measures.
  - ❖ Copies of lighting design calculations and where necessary, cable size design calculations.
  - ❖ Where the design information is supplied in the form of a site drawing showing Isolux contours, any minimum point or average values shall relate to each road and not to the site as a whole.
  - ❖ Where a private cable network is necessary and has received the prior approval of the Street Lighting Manager, a copy of the plan indicating the mains cable layout and a separate plan indicating the ducting network and location of inspection chambers and feeder pillars.
- 2.6 When dealing with the limitation of obtrusive light from the proposed lighting installation in accordance with the Institution of Lighting Professionals guidance notes, the Street Lighting Manager shall be consulted before any design is undertaken if there is doubt as to which Environmental Zone is applicable to the development.
- 2.7 Luminaires fixed to buildings or structures, are not usually considered for adoption. However, this is at the Street Lighting Manager's discretion and early consultation should be sought. The Street Lighting Manager will require written confirmation from the designer of the building or structure or an independent structural engineer of the suitability of the building to support the weight of the luminaire and bracket if a decision has been permitted to attach the luminaire to the building.

- 2.8 The luminaire maintenance factor used in the design calculations shall be taken from Annex B, Table B.1 in BS 5489-1:2013 and shall equate to the cleaning interval as advised by the Council's Street Lighting Manager. The lamp flux maintenance factor shall be obtained from the manufacturer of the lamp and shall be based on the figure quoted for lumen maintenance after 8000 burning hours. The Maintenance Factor to be used in the design calculations shall be the product of the luminaire maintenance factor and the lamp maintenance factor. For LED luminaires, the maintenance factor used in the design calculations shall be obtained from Annex C in BS 5489-1:2013 and shall equate to the cleaning interval as advised by the Council's Street Lighting Manager.
- 2.9 Electricity supplies to lighting columns shall normally be provided by the Distribution Network Operator (Western Power Distribution), via an individual un-metered supply. Early consultation should be undertaken with the Distribution Network Operator.
- 2.10 Where it is necessary to provide private underground cables, the proposed location of the lighting columns shall be agreed with the Street Lighting Manager prior to any cable design being undertaken. The overall scheme shall be submitted to the Street Lighting Manager for approval on completion of any underground cabling layout and design.
- 2.11 When designing the street lighting installation, particular attention should be given to the requirements of Section 5 of BS 5489-1:2013 concerning the site location of columns. Lighting columns will be of the hinged type when situated in areas where vehicular access is limited.
- 2.12 If new lighting is to be installed near to a railway line or in any other sensitive location, as defined in Section 12 of BS 5489-1:2013, the appropriate Authority must be consulted at an early stage concerning possible interference from the lighting. Copies of consultation correspondence must be provided with the submission to the Street Lighting Manager.
- 2.13 The lighting installation for outdoor car parks may be considered for adoption by the Council. The lighting of such features shall be designed in accordance with Section 10.7 of BS 5489-1:2013 and will involve the use of a white light source.
- 2.14 Any proposed tree or shrub planting within the highway boundary shall be located no closer than 5 metres from any street light or illuminated traffic sign and no closer than 2 metres from any feeder pillar. Where the Developer provides landscaping or planting on land adjacent to the highway, the minimum distances stated above should be complied with in order to avoid obstruction of highway electrical equipment.
- 2.15 Columns are to be sited away from the windows and doors of houses and similar properties and installed on the boundary of properties where it is possible to do so.
- 2.16 Columns are to be sited away from trees, cellars, gullies, drains, culverts, bridges, the roof of buildings, overhead telephone lines, utilities underground apparatus and overhead power lines, where possible to do so.

- 2.17 Unless otherwise specified, the door opening shall face away from oncoming traffic. On footpaths, the door opening shall face outwards if sufficient clearance exists for safe working. For columns on central reserves, the doors shall face in the same direction and be as agreed with the Street Lighting Manager.

### **3.0 Lighting of Roads**

- 3.1 The lighting installation for Traffic Routes including industrial estates and retail parks shall generally be designed to meet the requirements of Section 7 of BS 5489-1:2013 and a usual mounting height of either 8m or 10m aluminium type is expected. Unless specified to the contrary, the light source will be white light LED type. Information on the selection of an appropriate lighting class is given in Annex A of BS 5489-1:2013. However, prior to any design being undertaken, the Developer should discuss the particular requirements for the site under consideration with the Street Lighting Manager.
- 3.2 The lighting installation for subsidiary roads and associated areas, footpaths and cycle ways shall generally be designed to meet the requirements of Section 7 of BS 5489-1:2013 and a usual mounting height of 5m or 6m aluminium type is expected. On residential roads, unless specified to the contrary, the light source will be white light LED type. Information on the selection of an appropriate lighting class is given in Annex A of BS 5489-1:2013. If there is any doubt as to the standard to be applied having regard to the road's location and anticipated usage, this must be agreed with the Street Lighting Manager prior to any design being undertaken.
- 3.3 The lighting of conflict areas i.e. road junctions, roundabouts and pedestrian crossings shall be designed in accordance with Section 7.5 of BS 5489-1:2013. Information on the selection of an appropriate lighting class is given in Annex A of BS 5489-1:2013.
- 3.4 The locations and types of illuminated signs where required, shall be approved by the Traffic Section prior to the submission of a Section 38/278 agreement. The Street Lighting Manager shall be consulted as to the type of illumination to be used on those signs which are required to be illuminated.
- 3.5 The position of all columns and illuminated furniture will be shown on the approved plan. However before installation, the exact positions shall be agreed with the Street Lighting Manager on site. Care shall be taken over the location of the column door to ensure that maintenance operations can be carried out safely and easily.
- 3.6 Columns shall generally be sited at the rear of the footway so as to avoid obstruction to pedestrian movement. In all cases the minimum clearance from the edge of carriageway to the face of the column shall comply with that recommended in Section 4 of BS 5489-1:2013. On residential developments, columns sited in service margins or grassed areas may be erected with a clearance of 800mm. In cases of doubt, the Developer should seek clarification from the Street Lighting Manager.

3.7 Lighting columns installed on private property (with approval) will require a metre square of material similar to the existing footpath constructed around the column, complete with kerbstone boundary which is then to be linked to the existing footpath and form part of the section 38 agreement.

3.8 Lighting columns installed in a grassed area will require a working platform for ease of maintenance.

#### **4.0 *Lighting of Cycle Routes***

4.1 Cycle routes shall be lit in accordance with the Institution of Lighting Professionals Technical Report No. 23 – Lighting of Cycle Tracks, and shall have regard to the Environmental Zone in which the route is located. In Environmental Zones E1 and E2, or where after-dark usage is not likely to be high and a suitable alternative route is available which is lit, it is recommended that the cycle route should be unlit. It is further recommended that the lighting of any cycle route should be discussed with the Street Lighting Manager prior to the design being undertaken.

#### **5.0 *Non-Standard Installations***

5.1 Whilst there is some flexibility to allow choice in the type of materials to be used, the Council must impose some restriction in order that future maintenance costs, including the necessity to stock a multitude of replacement parts, are reduced to a minimum. Not with-standing this, the Council is prepared to consider schemes which utilise non-standard highway lighting luminaires where the Developer considers that on aesthetic or other reasonable grounds, a decorative or heritage-style lantern and/or column should be used. In all such cases the Developer should make early contact with the Street Lighting Manager to discuss the proposal.

5.2 The Council will require the payment by the Developer of a commuted sum, which will be calculated by the Council, to cover the increased maintenance and/or energy costs of the non-standard items as specified in the relevant Section 38/278 agreement.

#### **6.0 *Lighting of Traffic Calming Schemes***

6.1 Streets containing road humps/traffic calming measures are to be lit throughout the hours of darkness as per the Highway (Road Hump) Regulations 1999.

6.2 The road shall be illuminated to the correct level as per BS 5489-1:2013 and the Institution of Lighting Professionals Report Number 25 – Lighting for Traffic Calming Schemes, for the particular type and use of the road on which the traffic calming is placed. The lighting shall cover the approaches to and the position of all traffic calming features.

6.3 A suitable white light source shall be used to illuminate the immediate area containing the traffic calming measures.

6.4 The provision of a single lighting point positioned at a road hump or speed cushion is not recommended, due to the increased risk to the motorist of the traffic calming feature not being adequately revealed.

## **7.0 Lighting of Pedestrian Crossings**

7.1 Pedestrian Crossings shall be illuminated to the requirements of:-

- ILP Technical Report No. 12 - Lighting of Pedestrian Crossings
- BS 5489-1:2013
- BS EN 13201 Part 2.

7.2 Supplementary lighting shall be provided to illuminate the full carpet of the crossing and the light source to be used to illuminate the crossing carpet shall be Metal Halide or other suitable white light type as agreed by the Street Lighting Manager.

## **8.0 Procedure for Adoption of Street Lighting**

8.1 Prior to adoption, the Developer must submit the following to the Street Lighting Manager in respect of the street lighting installation:

- ❖ The original completed test certificates must be submitted as required by BS 7671. Test certificates which are current must be provided, i.e. the tests must have been carried out not more than 3 months before the roads are submitted for adoption and must show actual values measured during electrical tests.
- ❖ A specific scaled layout plan indicating the position and identifying number of each street lighting unit and the routes and depths of any private underground street lighting cable network. The unit identification numbers must be cross-referenced to the test certificates.

8.2 Following receipt of the documentation listed in 8.1, the Street Lighting Manager will arrange to inspect the installation to ensure that it fully complies with the specification. Failure on the part of the Developer to comply with any requirement of the specification may prejudice adoption. The Developer will then be required to verify the adequacy of the works undertaken entirely at their own expense and to the satisfaction of the Street Lighting Manager.

8.3 If another inspection is required due to non-compliance from the initial inspection, a charge will be incurred by the Developer for every subsequent site visit thereafter by the Council.

8.4 When the Street Lighting Manager considers that the installation fully complies with the approved drawings and the specification, a completion certificate will be issued. If the installation is covered by a Section 38 or Section 278 Agreement, the completion certificate will be sent to the Council Officer responsible for the Agreement, otherwise a copy of the completion certificate will be sent to the Developer.

8.5 The Developer shall remain fully responsible for the public lighting installation, including payment of energy charges and continuing maintenance, until the date of formal adoption of the public lighting by the Council. It must be noted that the lighting may be adopted by the Council prior to formal adoption of the highway itself.

8.6 In instances where emergency situations arise i.e. vehicle impact, column doors missing etc and the Developer cannot be contacted or is unable to arrange attendance by his electrical sub contractor within an agreed suitable timescale, the Council reserves the right to undertake any works necessary to make the situation safe and to recover any appropriate costs from the Developer.

### **9.0 Programme and Inspections**

9.1 In addition to any requirements within the Section 38 Agreement for the submission of a programme of work for road construction, the Developer shall advise the Street Lighting Manager when they intend to install any highway electrical equipment.

### **10.0 Inspections**

10.1 The Street Lighting Manager shall be advised by the Developer at least 7 days in advance of their intention to install highway electrical equipment, in particular any installations below ground level, in order to allow the Street Lighting Manager the opportunity to undertake an inspection of the installation before it is covered. The Developer shall confirm that the installation will take place by giving at least 48 hours notice of the installation of any works which will not be visible above ground. Failure to comply with this instruction may result in the Developer having to excavate trial holes at their expense in order to confirm that the installation fully complies with the specification.

### **11.0 Traffic Signs**

11.1 Where works affect traffic movement on the existing highway network and where it is necessary in the interests of public safety, then traffic safety measures for road works shall be implemented in accordance with Chapter 8 of the Traffic Signs Manual.