Committee: Sustainable Communities Overview and Scrutiny Panel

Date: 5th September 2011

Agenda item: 11

Wards: ALL

Subject: Lighting Policy

Lead officer: Chris Lee, Director of Environment & Regeneration

Lead member: Councillor Andrew Judge, Cabinet Member for Environmental Sustainability and Regeneration

Forward Plan reference number:

Contact officer: Mario Lecordier x 3202

Reason for Urgency:

The Chair has agreed to the submission of this report as a matter of urgency in order to allow the Panel to consider and comment on the policy before it is submitted to Cabinet for decision on 17 October 2011.

Recommendations:

A. That the Panel note the content of this report and the draft lighting policy attached as Appendix 1.

B. That the Panel refers any comments or recommendations that they may have on the attached draft Lighting Policy to the Cabinet meeting of 17th October 2011.

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1 PURPOSE OF REPORT AND EXECUTIVE SUMMARY

1.1. This report proposes a structured and coherent approach to the future provision of new and the maintenance of existing street lights and illuminated street furniture (excluding traffic signals) in Merton through a Lighting Policy. The Policy seeks to define Service Standards that meets the needs of Merton's residents, comply with British and European regulations, meet Codes of Practice recommendations, support the Council's Priorities, particularly in meeting its Carbon Reduction Targets, reducing energy consumption and reducing the fear of crime. The Policy will also contain an Investment Strategy and an Action Plan, which will identify savings in energy and maintenance costs.

2 DETAILS

2.1. There is no statutory requirement on highway authorities to provide public lighting but the Council has a statutory duty to improve road safety and combat crime. Therefore Street lighting is provided to ensure the safety of all road users, reduce the fear of crime and increase the feeling of security when it is dark.

2.2. Merton Council does not currently have an agreed lighting policy. The provision of street lighting has in the past been based on good practice and available budgets. A clear policy document is therefore needed to identify service standards and provide designers with guidance on the most appropriate and cost effective lighting source to be used on Council land on or off the public highway.

2.3. The Lighting Policy has been developed taking into account the Council's wider Corporate Policy Objectives contained in the Council's Community Plan 2009 -2019, in particular to reduce crime and the fear of crime, the Merton's Climate Change Strategy which is seeking to reduce energy consumption and Carbon emissions and the Local Implementation Plan (LIP) which seeks to improve road safety for all road users.

2.4. Merton's Traffic and Highways Services maintains in excess of 16,000 illuminated street furniture, which includes 12,220 lamp columns. Street lights in Merton consume approximately 12,800,000 kWh of electricity annually. This equates to 5600 tons of Carbon emission annually. Street lighting accounted for 43% of the Council's overall electricity consumption in 2010/11. The majority of Merton's street light meets current lighting standards.

3 CONSULTATION UNDERTAKEN OR PROPOSED

3.1. It is proposed to consult neighbouring boroughs, Transport for London and other interested stakeholders on this draft policy.

4 FINANCIAL, RESOURCE AND PROPERTY IMPLICATIONS

4.1. An Investment Strategy and Action Plan aimed at meeting savings targets and reducing energy consumption is being developed in line with the Lighting Policy to be agreed by Cabinet on 17th October 2011.

4.2. An Investment Strategy and Action Plan is being developed as part of this Policy which will detail

5 LEGAL AND STATUTORY IMPLICATIONS

5.1. There is no legal requirement for Highway Authorities to provide street lights. However S 97 of the Highways Act 1980 states:

1.) ".... every local highway authority may provide lighting for the purposes of any highway or proposed highway for which they are or will be the highway authority, and may for that purpose -

(a) contract with any persons for the supply of gas, electricity or other means of lighting; and

(b) construct and maintain such lamps, posts and other works as they consider necessary

5.2 The Council has a statutory responsibility to provide a safe and efficient highway network for the benefit and safety of all road users.

6 HUMAN RIGHTS, EQUALITIES AND COMMUNITY COHESION IMPLICATIONS

6.1. The provision and effective maintenance of the Street lights plays an essential role in providing safe access on Merton's Highway, particularly for the disadvantaged groups such as those with mobility difficulties and the elderly.

7 CRIME AND DISORDER IMPLICATIONS

7.1. Section 17 of the Crime and Disorder Act 1998 requires all Local Authorities to consider crime and disorder while exercising their duties. The provision of street lights will assist the council in discharging this duty.

8 RISK MANAGEMENT AND HEALTH AND SAFETY IMPLICATIONS

8.1. Effective maintenance and improvement of street lights will minimise insurance or injury risks to the Council by ensuring that the public highway is safe and serviceable.

9 APPENDICES – THE FOLLOWING DOCUMENTS ARE TO BE PUBLISHED WITH THIS REPORT AND FORM PART OF THE REPORT

- Draft Lighting Policy

10 BACKGROUND PAPERS

10.1. None

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Foreword

Insert directors words about why document has been written

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1 Introduction

Merton is dedicated to enhancing the quality of its streets and spaces, with the aim of developing its role as a pre-eminent and sustainable place for living and working in London.

Merton intends to create a better environment from dusk to dawn. The increased safety, greater security and enhancement of the night time visual scene provided by well conceived and well maintained lighting, help to achieve this objective.

There is no statutory requirement to provide street lighting. However there is a duty to improve road safety and to combat crime. The provision and good maintenance of well defined lighting are recognised contributories to meeting these duties.

The statutes that empower Merton to provide lighting are the Highways Act 1980 and the Public Health Act 1875.

The purpose of this document is to provide the information required to maintain and improve the quality of all lighting in Merton and achieve these aims and objectives.

This policy is to be read in conjunction with the “Streetscene design guide” and the “Public realm strategy”.

This policy will be reviewed annually by the Network Maintenance Manager (Lighting) for compliance with changes to legislation. An overall review of the policy will be carried out by the Traffic and Highway Services Manager every 5 years

[Insert Picture of well known Merton landmark with lighting]

2 Overview

Merton recognises that a structured and coherent approach to the provision of lighting on public highways is essential. There are British and European standards which provide guidance on the correct levels for the various types of road, footpaths, pedestrian areas and cycle tracks. The current standards covering these are;

- BS5489
- BS EN 13201

In addition to the standards there are codes of practice and technical reports produced by the Institution of Lighting Professionals. These provide further guidance relating to specific requirements which will affect the design, installation and maintenance of lighting within Merton. These include;

- Well Lit Highways – Code of practice for Highway Lighting Management
- The code of practice for Electrical Safety in Highway Electrical Operations
- Code of practice for Variable lighting levels for Highways
- Lighting for Traffic calming features
- Lighting of Cycle tracks
- Lighting of Pedestrian crossings
- Managing a vital asset: Lighting supports.

The guidance and information in this policy document takes in to account the recommendations contained within all of the relevant standards and policies.

3 Main Objectives

The main objectives of this policy are to ensure the provision of street lighting that shall:

- Be cost effective
- Enhance the night time environment
- Reduce crime and disorder and fear of crime
- Promote the safety of all road users with special consideration to the vulnerable
- Reduce night time accidents
- Reduce the impact on the environment in terms of energy and light pollution
- Meet carbon reduction targets, through energy conservation and sustainability in accordance with the borough strategy
- Utilise new technology as it becomes viable
- Be sensitive to the surrounding area

This document also defines the standards of service required and gives guidance on how to manage and monitor the asset to achieve these standards.

3.1 Cost Effective

Selection of a suitable lighting level for the area that needs to be lit is the primary consideration in providing a cost effective lighting solution. Guidance on this is provided in section 5.1.6 of this document. The use of variable lighting levels will also assist with Merton's aim of providing cost effective lighting. (section 5.1.6.1)

The style of lighting equipment required can in the majority of instances be standardised. This will keep the stock required for maintenance and replacement to a minimum and therefore reduce cost.

In areas where decorative equipment is required, the quality and cost of these items must be given consideration. Within this process, the performance of the

equipment with relation to spacing between columns, energy usage and lamp life shall all be taken in to account.

When selecting a light source to be used, the following areas shall have been considered;

- Lamp costs
- Lamp life
- Lumen depreciation
- Energy costs
- Reliability
- Lamp disposal
- Future availability
- Colour Rendering Index
- Colour Temperature
- Implications for CCTV

To determine the most cost effective column that can be used, selection follows a similar principle to that for lamps with consideration given to;

- Material (Steel, aluminium etc)
- Column costs
- Column design life
- Requirement for attachments (including CCTV, seasonal decorations and hanging baskets)

Defining a cost effective lantern to use shall be determined in conjunction with the selection of the lamp required for the task. The optic in a lantern will generally be specifically designed around the light source. Lantern manufacturers have a variety of ways in which they control and distribute the light that is emitted. The most efficient lantern optic for one task may not be the most efficient for a similar task. The basic principles involved in defining the most cost effective lantern shall include;

- Construction materials
- Lantern costs
- Design life (defined or estimated)
- IP rating of the lantern optical compartment
- Optical performance
- Build quality
- Future availability
- Ease of maintenance
- Environmental impact of materials
- Implications for CCTV

3.2 Enhance the night time environment

In areas of high night time activity, such as town centres and local centres there is a desire to improve the quality of that space. This can be achieved through the use of suitable lighting levels and equipment that define the space as “special”.

The use of variable lighting levels to establish patterns of behaviour in areas where there is a potential for anti social behaviour is one way of using modern technology to enhance a feeling of safety in an area.

Good use of feature lighting can improve the street scene. It is important to select good quality, vandal resistant materials for these projects and maintain the equipment well.

Beautification of the night time environment can be as simple as lighting historic buildings or monuments, as well as lighting trees with up lighters or a string of small lamps within the branches.

In order that these desires can be met, some freedom for creative lighting in flagship / town centre public realm projects is encouraged. However this must fit with the master plan for the area and the maintenance and energy costs must be affordable.

[Insert picture of good practice example]

3.3 Reduce crime and disorder and fear of crime

A good lighting scheme can only help to reduce the incidence and fear of crime and anti social behaviour if it is well maintained.

Lighting that is considered necessary specifically to reduce crime and disorder and the fear of crime is likely to require a white light source. Careful consideration to determine a cost effective solution will be required and guidance on this is provided in section 5 “General Requirements”

Lighting that is left broken or not working for an extended time can lead to an area becoming the target for anti social behaviour and may then be perceived as a high crime area.

Ensuring that all lighting is included on the asset management database is the first step required to ensure maintenance meets expectations. Any faults identified can be recorded quickly and accurately. Repairs are then more likely to be acted on in accordance with expectations. Further information relating to this is provided in section 6 of this document.

Merton Council has a statutory duty under section 17 of the Crime and Disorder Act 1998 (and 2006 amendments) to **"**exercise its various functions with due regard to the likely effect of the exercise of those functions on, and the need to do all that it reasonably can to prevent, crime and disorder in its area."

To meet this duty, the corporate business plan states an ambition to deliver a safe and secure place to live. Tackling anti-social behaviour is a key part of this and good quality lighting can play an important role in this.

3.4 Promote the safety of all road users with special consideration to the vulnerable

Special consideration shall be given to lighting in the vicinity of pedestrian crossing points whether controlled or uncontrolled and traffic calming.

Subways shall be lit to levels as recommended in BS5489, with special attention given to the entrances and exit areas to ensure the safety of pedestrians and cyclists is not compromised.

Further information relating to both of these areas is included in section 5 of this document "General Requirements".

3.5 Reduce night time accidents

The reduction of night time accidents is a key benefit of lighting. Working with those responsible for road safety to combine engineering solutions and education with suitable systems of lighting, will maximise the benefits that can be achieved.

3.6 Reduce the impact on the environment in terms of energy and light pollution

The institution of Lighting Professionals provides information to assist with the reduction of obtrusive light, in their "Guidance notes for the reduction of obtrusive light GN01"

Within this guidance note, areas are defined as:

- Zone E1 – Intrinsically dark landscapes. (National parks, areas of outstanding natural beauty, sites of special scientific interest and other dark areas)

- Zone E2 - Areas of Low District Brightness (Relatively dark urban locations outside Zone E1)

- Zone E3 - Areas of Medium District Brightness (Low crime urban locations)

- Zone E4 - Areas of High District Brightness (Urban centres with high nigh-time usage)

Any new or replacement lighting schemes shall be designed taking in to account the Council's statutory responsibilities, its current Business Plan and the recommended limitations detailed in the guidance note GN01, with regard to light trespass, source intensity and building luminance, for the relevant environmental zone.

3.7 Meet carbon reduction targets, through energy conservation and sustainability in accordance with the borough strategy

Merton's community plan 2006-2015 sets a target to cut CO_2 emissions by15% by 2015 in our borough. The council is already doing a great deal of work to combat climate change and reduce CO_2 emissions.

A target for CO_2 emissions reductions will be developed for street lighting. The base line will be determined following the data inventory update in 2011/12. The target will be set to match, or better, the 15% target that has been determined for the Borough.

Merton's energy and sustainability manager, the street lighting department and contractors employed by Merton must work together to identify opportunities for energy reduction and carbon reduction to meet the target.

Merton will purchase green energy for street lighting wherever possible. This will be dependant on market forces at the time of procurement.

LB Merton will investigate the feasibility and use of renewable energy technologies for street lighting.

3.8 Utilise new technology as it becomes viable

There is always new technology being developed in the lighting industry and this should be embraced when the benefits can be clearly demonstrated.

It is important for all new technologies to be considered against the same benchmarking process. A typical lighting installation has a design life in the region of forty years. Any emerging technologies shall be assessed for the typical installation design life of forty years, taking in to account the whole life costing for the installation, maintenance and disposal of the equipment.

3.9 Be sensitive to the surrounding area

Whilst the primary function of lighting is to improve the night time scene, it must be designed such that it is aesthetically pleasing or blends in to the day time scene.

This can be done in a number of ways. Examples of this are selection of suitable heritage equipment in conservation areas, modern or coloured equipment in appropriate locations, or fixing on to buildings to reduce street clutter.

Combination of street furniture items is preferred to the fixing of lighting equipment on walls, where it is both a practical and cost effective solution.

To ensure lighting improvements are sensitive to the surrounding area they shall be designed such that they form an integral part of all environmental enhancement schemes.

Further information relating to this is provided in section 5 “General requirements”.

4. Where Lighting should be provided

All lighting installed in Merton will be considered taking in to account the “Main Objectives” as defined in section 3 of this document.

A decision to light a road or area will generally have been made based on a desire or perceived need for lighting. The first step in deciding whether it should be lit and if so how, must be first considered after deciding which environmental zone the area falls in. (See ILP Guidance note GN01 “Guidance notes for the reduction of obtrusive light.”

4.1 Zone 1

Zone E1 relates to national Parks, areas of outstanding natural beauty, sites of special scientific importance and other dark areas.

An area that could have an E1 classification is Wimbledon Common.
See map below showing Zone E1 areas in Merton
[Insert a map showing the areas designated as complying with E1]

The general presumption is that street lighting should not be provided in Zone E1 areas unless an overriding safety or crime detection/reduction issue can be demonstrated, which cannot be overcome by other means.

On a public Highway road safety benefits may be assessed via the ratio of daytime accidents from the anticipated reduction in night time accidents by the installation of lighting.

Although roundabouts, and other major junctions, are sites often identified as needing lighting, assessments should still be made to confirm the justification, having regard to the above.

Where existing street lighting has been installed a safety audit shall be completed, followed by consultation with the key local stakeholders, including planning, conservation and environmental officers. Where possible, such equipment shall either be deilluminated or removed.

4.2 Zone 2

Zone E2 relates to areas of low district brightness (Relatively dark urban locations outside Zone E1)

See map below showing Zone E2 areas in Merton
[Insert a map showing the areas designated as complying with E2]

The general presumption is that street lighting shall only be provided in Zone E2 areas if it is deemed to be in the best interest of the local community from a road safety, personal security or crime detection/reduction point of view.

Where proposals are promoted on the grounds of personal security, particularly pedestrians, the main factors which should be assessed when considering provision of lighting are:

- The potential risk of the site, such as high personal crime areas, particularly in secluded locations, and potentially dangerous locations due to the terrain, (i.e. falls) or other hazards.
- Areas where antisocial behaviour or repeated acts of vandalism occur.
- Whether CCTV images are required for prosecution purposes

Applying the above criteria complies with Merton's statutory duty under section 17 of the Crime and Disorder Act 1998 (and 2006 amendments) and the corporate business plan.

Where lighting is considered necessary, either on road safety or personal security grounds, then full consideration must be given to the environmental impact when designing any proposals. Locations where environmental considerations will carry greater emphasis are:

- Special Protection Areas
- Special Areas of Conservation
- Environmentally Sensitive Areas
- Areas of Outstanding Natural Beauty
- Sites of Special Scientific Interest

Where a justification to light is identified, within such environmentally sensitive areas, installations shall be designed to minimise day time and night time impact. The use of full horizontal cut-off lanterns and minimum acceptable lighting levels will be required. Appropriately designed and coloured equipment shall be specified to fit in with the local environment.

An integral approach should be used to develop proposals which best balance safety and environmental considerations.

Where illumination, especially of signs and bollards, is a requirement then consideration should be given to the use of solar powered equipment.

4.3 Zone 3

Zone E3 relates to areas of medium district brightness (Low crime urban locations)

Roads falling into this category include all urban residential local access roads and footpaths (as defined by “Well Lit Highways”) where reported crimes, per 1000 households, are less than, or equal to, the Borough average.

4.4 Zone 4

Zone E4 - Areas of High District Brightness (Urban centres with high night-time usage)

Generally all Zone E4 areas will be lit to the British Standard relevant at the time. Urban Areas falling into this category include all urban residential local access roads and footpaths (as defined by “Well Lit Highways”) where reported crimes, per 1000 households, are greater than the Borough average.
AE to provide pdf of plans showing TC’s from public realm strategy

4.5 Sensitive areas

In addition to the lighting requirements for environmental zones, there will be areas designated as sensitive areas. These will include;
AE to provide pdf of plans showing Sensitive areas from public realm strategy

- Conservation Areas
- Scheduled Ancient Monuments
- Listed Buildings and their Settings
- Other Sensitive and Non-statutory Historic or Heritage areas
- Older urban regeneration areas

All areas have a unique character and it is important that lighting arrangements are tailored accordingly, rather than being “standardised” towards the enhancement of the area in respect of any works carried out.

Regeneration schemes for the areas defined above will generally be the subject of special treatment and funding. It is essential that stakeholders are included in the consultation process that decides on what is acceptable for these areas. In the majority of cases, stakeholders could include, but is not exclusive to, groups or individuals representing the following interests:

- Street Lighting
- Network Maintenance
- Network Improvement
- Road Safety
- Public safety
- Regeneration

- CCTV
- Climate Change
- Energy and Sustainability
- Leisure and Culture
- Green Spaces
- Estate Services
- Advertising, Filming and Sponsorship

Where necessary, stakeholders will consult with outside bodies (e.g. historic societies) to ensure that the appropriate lighting design brief is achieved.

All proposals and improvements will be the subject of a lighting design brief.

Always provided that the assessed level of highway safety is achieved, the retention and enhancement of the architecture, historic or landscape character of the area will be taken into consideration when determining lighting requirements.

In view of the pressures upon financial resources, the costs of environmentally designed lighting schemes and future maintenance liabilities shall be borne in mind.

5. General requirements

All types of external lighting that can be found within Merton are identified in this section of the policy. The general requirements of how lighting is able to be provided and that define how that lighting shall be designed and maintained are set out in the relevant sub sections. In addition to the information provided in this document all work carried out shall comply with the Construction (Design and Management) Regulations 2007 (CDM).

5.1 Highway Lighting

Areas within Merton that are included in the term “Highway” are:

- Traffic routes
- Town centres
- Residential roads
- Footpaths / Cycleways
- Subways

5.1.1 Legislation and Standards

The statutes that empower Merton to provide lighting are the Highways Act 1980 and the Public Health Act 1875.

A Local Lighting Authority is a District, Borough, Town, or Parish Councils who has adopted the powers of a Lighting Authority under the Public Health Act 1875.

These powers allow a Local Lighting Authority to provide, adopt, and maintain footway lighting on both public and private highways. In addition a Local Lighting Authority should plan for the future maintenance of their footway lighting.

In addition, the Local Government Act, 1966 made County Councils and London Boroughs, Highway Authorities in their own right with a duty to ensure the safety of the public highway. The conditions and requirements for providing lighting, as the Highway Authority, are defined in the Highways Act 1980.

The Local Government Act, 1966 does not confer a duty on a Highway Authority to provide and maintain road lighting. Whilst a Highway Authority does not have a duty to provide lighting it has a duty of care to maintain its lighting stock in a safe condition and to ensure that the equipment is fit for purpose.

The duty to ensure the safety of the Highway includes the maintenance of all electrical street furniture. This includes ensuring the structural integrity of structures and the electrical safety of all circuits and enclosures.

This duty of care could also include the provision of lighting where there is a demonstrable night-time accident problem.

All new public lighting provided on a public highway should be designed in accordance with the following:

- BS 5489 Part 1 for roads and public amenity areas
- BS 5489 Part 2 for tunnels
- BS EN 13201 Part 2 for performance requirements
- BS EN 13201 Part 3 for calculation of performance
- BS EN 13201 Part 4 for methods of measuring lighting performance

5.1.2 Obtrusive Lighting

Obtrusive light is light which falls outside the area to be illuminated which, because of its quantity, direction or colour causes annoyance, discomfort, distraction or reduces the ability to see. Obtrusive light is often referred to as Light Pollution, which can be defined as the adverse effect of manmade light. Obtrusive light can be subdivided into three main categories:

1. Skyglow - The artificial brightening of the sky caused by the scattering of artificial light by dust particles and water droplets in the atmosphere. Often seen as an orange glow above urban areas and commonly referred to as Light Pollution. A large percentage of Skyglow is caused by light emitted directly upwards or at high angles of elevation from poorly designed luminaires and to a lesser extent light reflected from surfaces.

2. Glare - An intense blinding light, usually seen against a dark background, which can result in reduced visual performance and visibility. Poorly designed, installed and maintained lighting can cause glare that can affect the vision of pedestrians, cyclists, and drivers, creating a hazard rather than increasing safety.

3. Light trespass - Light falling where it is not wanted or needed, light spilling beyond the boundary of the property on which the light is located. Poor exterior light that shines into neighbouring properties and bedroom windows, reducing privacy, hindering sleep and affecting the appearance of the area.

Considerations shall be given to the restriction of obtrusive light by the control of the type of light source or by restricting the level of light emitted by the luminaire at high angles usually between 70 and 90 degrees.

The use of full horizontal cut off luminaires in Zone E1, Zone E2 and other sensitive areas will have a substantial effect on restricting obtrusive light.

Similarly, the use of shallow bowl luminaires for Zones 3 and 4 will help to

reduce the overall level of obtrusive light produced by road lighting installations, but may add to the numbers of lighting units required.

Special consideration should be given to the effect of lighting on adjacent areas used by other means of transport such as:

- railways
- transport interchanges
- car parks

Consideration of these problems at the design stage can substantially reduce the effect of obtrusive light. However, the installation must be properly maintained to ensure that any special provisions are kept in full working order and correctly adjusted.

The use of uplighters, or similar equipment intended for decorative lighting installations, will be strongly discouraged unless a significant benefit to the local community can be demonstrated which outweighs environmental concerns.

Early consultation will be carried out with any astronomical groups that may practice in close proximity to the road to be lit and seek to achieve a design solution that is acceptable for both parties.

Further guidance on restricting obtrusive light can be obtained from:

- "Guidance notes for the reduction of obtrusive light GN01" published by the ILP
- BS 5489 Part 1

5.1.3 Light Sources

The type and appearance of a light source can have a significant effect on the night-time scene. The colour rendering properties, lamp life and energy efficiency are the main factors that determine which one is to be used.

On main traffic routes, requiring ME class lighting, the light source must have a minimum colour rendering index (Ra) of 20.

In all other areas light sources must have a minimum Ra of 60.

The lamp life of any lamps used in Merton must meet the following requirements:

- Ninety per cent of Lamps with a minimum Ra of 20 but no greater than 60 and used in street lighting lanterns must have a minimum life of 16,000 hours.
- Ninety per cent of Lamps with a minimum Ra of 60 and used in street lighting lanterns must have a minimum life of 12,000 hours.

5.1.4 Luminaires

All luminaires used for the purposes of street lighting shall be manufactured to BSEN 60598-2-3 and have an acceptable optical system capable of directing the light onto the highway.

To ensure the minimum environmental pollution to the night sky, the amount of upward light from the lantern shall be kept to a minimum and, where possible, new lantern designs shall be incorporated in the standard design specifications to maximise this approach but still retaining electrical and illumination efficiency.

All lanterns should comply with Luminous intensity class G2 as defined in BS EN 13201-2 Table A.1.

All luminaires should be manufactured such that the optical compartment (housing for the lamp) should have a minimum ingress protection (IP) rating of 65 as defined in BSEN 60529. The gear compartment, if separate form the optical compartment shall have a minimum IP rating of 43.

The canopy and frame of a luminaire should be manufactured from aluminium, or similar fully recyclable material.

Optical covers (bowl) should be glass, unless specified otherwise for increased vandal resistance.

Luminaires shall be capable of both post top and side entry mounting, without requiring a separate attachment to the luminaire.

A preferred list of lanterns complying with Merton's requirements is included in Merton's "Preferred Street Lighting Equipment" can be obtained from the Network Maintenance Manager (Lighting)

In some locations area floodlights may be considered for some town centre locations, where it is considered aesthetically better to remove columns and fix such luminaires high up on buildings.

The minimum optic and gear compartment IP ratings for floodlights should match those required for street lighting luminaires.

The canopy and frame of a floodlight should be manufactured from aluminium, or similar fully recyclable material.

Optical covers (bowl) for floodlights should be glass, unless specified otherwise for increased vandal resistance.

In some conservation areas heritage style luminaires may be preferred. The general principles defined in this section for all luminaires should apply.

5.1.4.1 Control Gear

Ballasts in all new lanterns shall be electronic. They should be capable of fixed dimming and have the potential without modification for variable dimming, via a remote monitoring system.

5.1.4.2 Photocells and Timeswitches

All new photocells shall be electronic and have a maximum total power rating of 1w or less. The switching levels shall be 35 Lux switch on and 18 Lux Switch off.

Photocells shall have a manufacturer's warranty of no less than 12 years.

Timeclocks will be electronic and programmable for solar switching and fixed time. Timeclocks will have a combined clock, solar clock and calendar. The timeclock will have two separately controlled and programmable outputs each capable of switching a reactive load of maximum 10 Amps.

Timeclocks shall have a manufacturer's warranty of no less than 3 years.

5.1.4.3 Lantern Bowls

A deep lantern bowl is more likely to produce light at or above the horizontal than a shallow bowl. The use of shallow bowls combined with a good optic in the lantern will be more likely to comply with the minimum requirements of a G2 luminous intensity class.

Where CCTV has been specified, lanterns may need to meet a higher luminous intensity class, unless they can be positioned such that they do not cause glare for the camera. Placing the lanterns well above the height of the CCTV position should be considered to reduce the likelihood of glare.

5.1.5 Columns

All street lighting columns installed on the highway shall comply with the requirements of BS EN 40.

Columns will, in most instances, be manufactured from galvanised steel. The only exception to this will apply to cast iron, cast aluminium or some decorative steel columns, which may be used in environmentally sensitive areas.

All columns of 6m mounting height or less, will be designed to include a post top mounted luminaire, a sign plate of maximum area 0.5m^2 and a “standard” short term deployment CCTV camera.

All columns greater than 6m mounting height will be designed to include a post top mounted luminaire, a sign plate of maximum area 0.5m^2, a pair of hanging baskets at 90 degrees to the lantern bracket and a “standard” short term deployment CCTV camera.

Full specification details are provided in the “Preferred Street Lighting Equipment” document, which can be obtained by contacting the Network Maintenance Manager (Lighting)

Passive safety columns are generally not considered for urban locations, because they are considered to present a far higher risk to pedestrians than conventional columns.

5.1.5.1 Hinged Columns

In areas where access with a vehicle is severely limited or impossible, hinged columns shall be installed.

Areas where this is most likely are; remote footpaths or where the free flow of traffic will be impeded by the presence of a maintenance vehicle. Refuge island beacon posts may fall within this category.

5.1.5.2 Column Positions

In residential roads where the footway width is 3m or less and situated directly adjacent the carriageway, lighting columns will, if possible, be positioned at the back of path. Where there is an intermediate verge of 0.8m or greater the column shall be positioned in the verge as long as adequate clearance from the kerb can be maintained in accordance with table 2 of BS 5489-1.

When siting columns in residential roads, consideration shall also be given to the convenience of residents with regard to windows, driveways, entrances etc.

When siting columns adjacent to bridges, consideration should be given such that the light from the luminaire is not obstructed by the structure and does not cause problems of nuisance or glare to users on top of the bridge.

Lighting columns should, if possible, be sited such that they do not interfere with the view of buildings or monuments of architectural interest, or with scenic views.

5.1.5.3 Attachments to Columns – Electrical

The attachment of illuminated signs, traffic signals, or similar electrical items to street lighting columns is actively encouraged, where it reduces street clutter and does not undermine the structural integrity of the column.

In the case of new or replacement lighting systems, in locations where it is known that attachments requiring electrical connections will be required, the lighting columns shall have been fabricated to support such items. (See 5.1.5 for further guidance).

5.1.5.4 Attachments to Columns - Temporary Electrical

In the case of new or replacement lighting systems, in locations where it is known that attachments requiring electrical connections will be required, the lighting columns shall have been fabricated to support such items. (See 5.1.5 for further guidance).

In the case of an existing lighting column being used to support festive decorations, CCTV or any other items requiring an electrical connection, the column shall be inspected before the item is attached and regularly at a period recommended by a competent structural engineer.

A competent structural engineer shall be commissioned to provide a report to the Network Maintenance Manager (Lighting) or his representative, prior to the erection of any attachment, confirming that the column can structurally support the proposed item. That engineer will have professional indemnity to support his report.

Any attachment must not hinder the normal maintenance of the highway structure concerned.

All temporary fixings used to attach equipment to street lighting columns must be free from corrosion at all times. A bracket showing signs of corrosion must be removed by the owner within 28 days of a request to do so.

Any damage to the protective surface must be made good immediately after the removal of the apparatus.

No banner or catenary wire shall be permitted to be erected between two street lighting columns unless the structure has been designed and fabricated specifically for that purpose.

Power supplies to any item attached to a lighting column shall not be derived from adjacent buildings, but from within the street lighting column acting as the

support. (This is to avoid instances of connection to private supplies, over which Merton Council has no control).

The electrical supply to any attached item shall be wired in accordance with BS7671 wiring regulations, by a competent person.

When an electrical supply is to be taken from an existing electrical feed, it should be installed, as a minimum, to the same standards as a permanent installation. The supply should have a separate sub-circuit for each attached item. The contractor should ensure that by means of suitable HRC fuses or MCB that each circuit has sufficient discrimination not to affect the other circuits under fault conditions. Under no circumstances should the existing equipment be dismounted, disconnected or removed.

The body responsible for the installation and connection of any electrical item shall, contract with an electricity supply company for the supply of energy.

As a minimum, all additional electrical items attached to columns shall comply with the following:

- Health and Safety at Work Act 1974
- Electricity-at-Work Regulations 1989
- BS 7671 Regulations for Electrical Installation.

In addition to the above the following may apply, at the discretion of the Network Maintenance Manager (Lighting):

- An agreed set of inspection/emergency procedures is to be provided.
- Each installation shall be tested, with the electrical test certificates and test results passed to the Network Maintenance Manager (Lighting) on the day following installation.
- A qualified structural engineer with professional indemnity must certify the installation.
- No installation shall be permitted where it may be in conflict with any adjacent traffic signal system.
- The installer must provide evidence of public liability to the required level.

5.1.5.5 Temporary CCTV Cameras

The installation of temporary CCTV cameras on street lighting columns should be carried out in accordance with section 5.1.5.3 and taking in to account the following specific requirements.

Generally for protection against electric shock all systems shall be rated at 25v SELV. However, for systems sited a minimum of 3.5 metres above the highway, mains voltage (230v) may be used. In all such systems the installer must ensure

that the requirements of BS 7671 are met and supplementary protection by the use of a 30mA RCD shall be given. The connection point for the CCTV camera will be a column mounted 16A external socket, or “commando socket”.

The owner of the CCTV installation shall:

- Ensure necessary signage for overt CCTV usage is displayed appropriately.
- Ensure the police confirm with regard to their monitoring of the CCTV that they comply with the CCTV Codes of Practice Revised Edition 2008 or subsequent updates.
- Ensure that a suitable protocol has been agreed for viewing images of CCTV and storage of evidential and disclosure material compliant with Data protection, Police and Criminal Evidence Act (PACE) and Criminal Procedures & Investigation Act 1996 (CPI).
- Ensure third party liability with regard to erection and any damage caused by the camera equipment is covered.
- Ensure that an appropriate mechanism for reviewing, monitoring and assessing use and continued use of CCTV has been agreed.

A regular dialogue between those commissioning CCTV and the Network Maintenance Manager (Lighting) shall be maintained, to ensure that opportunities to install suitable columns in crime hot spot areas are identified and acted upon.

All new columns will be designed to accept a temporary CCTV camera. For permanent cameras or where cameras require a more rigid support for better quality images, the promoter of the CCTV camera will inform the Network Maintenance Manager (Lighting) of his requirements, to allow combination of CCTV and lighting requirements wherever possible.

5.1.5.6 Attachments to Columns – Non Electrical

All temporary fixings used to attach flower baskets or other non electrical items to street lighting columns must be free from corrosion at all times. Any damage to the protective surface of the column must be made good at the promoter’s expense.

The Network Maintenance Manager (Lighting) has the right to request removal of any item, which the promoter must comply with, at their own expense, within 28 days of the request.

Structural requirements for all attachments will be as follows:

- No attachment or its support shall project over the carriageway or within 0.5 metres of the kerb face at a height less than 5.7 metres above the road surface.
- A clear 2.5 metres headroom shall be provided over any area open to pedestrian movement
- No permanent fixtures are to be made in, on or to the highway or to any street light or illuminated sign, without the prior written approval of the Network Maintenance Manager (Lighting).
- The Integrity of the weatherproofing of the lighting column, bracket arm and lantern must be maintained at all times (No holes are permitted to be drilled on any columns).
- No attachments are to be made to any bracket arm or extension fitted to a lighting column or traffic sign post.
- No decoration shall interfere with or obstruct access to the lantern or column door, or otherwise prevent normal maintenance.
- No decorations are to be fitted to any lighting column that carries a traffic sign other than a “No Loading or No Waiting” sign, without specific prior written approval of the Network Maintenance Manager (Lighting).
- All brackets, Clips, Attachments etc. are to be manufactured from non corrosive material (e.g. galvanised steel or stainless steel) and shall be of sufficient size and strength to support the attachment including weight of water when subjected to a wind pressure and exposure class as prescribed in BS EN 40.
- All brackets, clips, attachments etc. shall be fitted with a 5mm minimum thickness neoprene rubber insert between the lighting column and the fixing.
- The promoter or his contractor shall ensure that the design and construction of lighting columns, intermediate supports etc. fully comply with the requirements of BS EN 40 when fully loaded with the lantern , any existing traffic signs, the decoration and its associated equipment etc. when subject to a wind pressure and exposure class as prescribed in BS EN 40.
- No Undue stress, bending or bowing shall be placed on any column, sign etc. which must always remain vertical. The Network Maintenance Manager (Lighting) reserves the right to refuse permission to fit attachments to any column considered by them to be unsuitable.
- No attachment are allowed on cast iron, concrete or aluminium columns.
- For safety reasons all brackets shall be placed parallel to the highway if under 5.7M high.
- Merton Council request the use of Decorative style brackets and equipment when used in conservation areas or on period style equipment and shall be painted to match the colour of the column that they are attached to.

General requirements are as follows:

- No metal ladders, metal step ladders or ladders with metal reinforcements are to be used or placed in contact with the lighting columns.
- The promoter of the equipment shall at their own expense, maintain the equipment in good repair during installation, operation and until the equipment is removed.
- The promoter shall arrange for the installation to be regularly inspected and any faults dangerous to users of the Highway shall be attended to and made safe immediately.
- The promoter shall advise the Network Maintenance Manager (Lighting), in writing, of the name, address and telephone number of the person with overall responsibility for the safety of the installation. The responsible person shall be available to receive emergency calls during the period that the attachments are being installed, operated or removed. The person shall be able to call upon sufficient resources, having sufficient knowledge, training, acquired expertise and equipment, to deal with an emergency involving the attachment any time of day or night.
- The Network Maintenance Manager (Lighting) will arrange for repair of any damage caused to lighting columns by the installation, operation or removal of the attachment and render an account to the promoter.
- The Network Maintenance Manager (Lighting) reserves the right to remove any or all attachments, which, in their opinion, is unsafe or dangerous to the public. This work will be rechargeable to the attachment promoter.
- If any street furniture to which attachments are fixed, is damaged or vandalised, The Network Maintenance Manager (Lighting) and the lighting contractor will endeavour to retain the equipment, however the Network Maintenance Manager (Lighting) or the lighting contractor will not be held responsible for any consequential lose.
- Insurance indemnifying Merton Council against any third party claims due to the installation, operation or removal of the attachments and any consequential damage to County Council property must be obtained by the promoter. The minimum level of indemnity to be £5,000,000 in respect of any one incident.
- A copy of the insurance certificate will be required prior to the erection of any decorations and associated equipment.

5.1.6 Lighting Levels

All new lighting should be provided, designed, and installed in accordance with Section 4 and the following:

- BS 5489
- BS EN 13201
- Preferred Street Lighting Equipment List

Also considering where necessary guidance contained in:

- LBM Streetscene Design Guide
- LBM Public Realm Strategy

A general guide to the lighting requirements is as follows:

All residential roads, that are not bus routes, will be lit in accordance with the lighting requirements of lighting class S4 with a lamp having an Ra of >60.

Residential roads which are bus routes, will be lit in accordance with the lighting requirements of lighting class S3 with a lamp having an Ra of >60.

Traffic routes shall be lit to the ME class relevant to the average daily traffic flow for that road as shown in Table B.2 of BS 5489-1.

Pedestrian areas and shopping districts will be lit in accordance with the relevant CE class as shown in Table B5 of BS 5489-1.

In areas where reduction of crime or the risk of crime is considered as one of the main reasons for providing lighting, the light source shall have a Ra of >60. The uniformity of the lighting in that area shall meet the appropriate lighting class and where uniformity is not stipulated as part of the requirements will have a uniformity of > 25%.

5.1.6.1 Trimming and Dimming

Variable lighting levels are accepted as a good way of reducing energy usage and carbon emissions. All new and replacement photocells shall be trimming cells having a switch on level of 35 Lux and a switch off level of 18 Lux.

All new and replacement lanterns on residential roads shall be fitted with electronic dimming ballasts. The ballasts will dim to 60% light output between the hours of 23:00 and 05:30.

Lanterns in pedestrian and shopping areas shall also be fitted with electronic dimmable ballasts. The amount of dimming permitted and the times to be dimmed will be determined during the design stage for each installation. This will depend on the night time usage of the area, nightclubs etc.

Lanterns on traffic routes shall be fitted with electronic dimmable ballasts. The amount to be dimmed will be determined during the design stage. The amount to be dimmed will depend on the initial lighting level determined by traffic volumes and the differential between it and the next lowest level allowed.

The times between which dimming will be permitted on traffic routes is 23:00 and 05:30.

5.1.7 Wall Mounted Luminaires

Where appropriate luminaires can be fixed to buildings, particularly where footways are narrow or it is considered aesthetically beneficial.

The associated work in achieving wayleave agreements or easements and Listed Building Consents for such fittings must be taken into account, when programming schemes which include lighting improvements. Such work may require periods in excess of 12 months to achieve completion.

The siting of fixings and all associated equipment on buildings should be taken into account, as should the quality and elevation features of the individual buildings on which they are to be affixed.

Brackets for wall mounted Luminaires can be of architectural interest in their own right. Restoration of such features is encouraged, where possible, in order to retain the individuality of the location.

Modern interpretations of historic brackets may be appropriate in order to satisfy the need for cable ducting and load bearing requirements. The colour, weight and proportion of the bracket must be matched to the load requirements of the lantern. Galvanised steel, primed and painted, should be used for new brackets, but other suitable approved materials will be considered.

Where luminaires require brackets, then fixings must take into account the nature and stability of the building. A structural survey of the wall and calculations to determine the fixing requirements by a suitably qualified and experienced engineer may be required before any brackets are attached to any wall.

5.1.8 Illuminated Signs

Illuminated signs shall only be installed where stipulated by the Traffic Signs and General Directions 2002.

Where sign lighting has been installed under previous versions of the Traffic Signs and General Directions which is no longer required under the current regulations, these signs may have their illumination removed.

Signs attached to columns which require lighting should be lit with a separate sign light fixed above the sign plate, of suitable size to illuminate the sign face in accordance with the requirements of BS EN 12899-1:2007.

In some circumstances it may be considered, by the promoter of a new scheme, aesthetically better to use an internally lit sign. This will be allowed at the discretion of the Network Maintenance Manager (Lighting) and only where it is shown that any additional maintenance implication is negligible. In such instances, the sign face shall be illuminated to the requirements of BS EN 12899-1:2007.
Any illuminated sign light or internally lit sign, shall be selected from Merton's "Preferred Street Lighting Equipment" which can be obtained from the Network Maintenance Manager (Lighting).

5.1.9 Traffic Bollards

Wherever possible within the guidelines of the Traffic signs and General Directions 2002, non illuminated bollards will be specified.

Where illumination is required, consideration shall be given to the use of solar powered internal LED lit bollards that have DfT approval.

If solar powered LED lit bollards are not deemed suitable, then a base lit bollard, with a self forming flexible body shell will be specified.

In most cases, only equipment approved and included on the "Preferred Equipment" list maintained by the Network Maintenance Manager (Lighting) will be permitted.

5.1.10 Feeder Pillars

Feeder pillars should be of a suitable size for the location and manufactured from galvanised sheet steel.

Inside the feeder pillar, backing boards will be made from non hygroscopic material of minimum thickness 15mm.

Doors will have two locking points, utilising a tri-head key for opening, unless specified otherwise.

5.1.11 Supplies

Supplies to all street furniture will have DNO supplies wherever possible.

Exceptions may be where the street furniture is on an island in the road or there is no DNO mains supply within 25m of the street furniture e.g. remote footpaths and cycleways.

5.1.11.1 DNO Supplies

All DNO supplies shall be individual 24 hour un-switched supplies.

5.1.11. 2 Private Cable Network

Private cable networks will be designed by a competent electrical engineer to comply with the requirements of BS 7671 and the ILP “Code of Practice for Electrical Safety in Highway Electrical Operations”.

5.1.12 Subways

Subways are provided as a safe route for pedestrians and cyclists to cross busy traffic routes or railways. This provision should be maintained in a safe and usable condition at all times. Subways, and the approaches to them, can be intimidating at night if they are not carefully designed and provided with good street lighting. Lighting should be designed and installed in accordance with the current British Standard for Road Lighting.

Subways should be bright and attractive to encourage their use. The walls should be treated or tiled to allow easy cleaning and removal of graffiti and of a light colour to reflect light.

Subways should be designed to allow flexible switching arrangements, providing different levels of illumination during the day and night to cope with extremes of daylight from a very bright sunlit day to a dark overcast night. Contrary to normal street lighting practices high levels of illumination have to be provided in subways during daylight if users are to feel safe entering and passing through the subway.

However, high levels of lighting during daylight hours can cause a “reverse black hole effect” when leaving a brightly lit subway on a dark night. Therefore levels of light during the hours of darkness should be reduced to between 50 and 100 Lux dependent upon the type of subway.

To further reduce the reverse black hole effect, and make the entrance and exit of subways more attractive and inviting, attention should be paid to the approach lighting to the subways with particular attention being given to a gradual reduction in lighting levels from those inside the subway to normal street lighting levels outside. Sudden transitions in lighting levels may cause distress and anxiety to users.

Subways shall be lit in accordance with the requirements of BS 5489-1 Section 10.6. Lighting levels within subways will be as specified in BS 5489-1 Table 4.

5.1.13 Lighting of Pedestrian Crossings

Pedestrian crossings and traffic signal controlled pedestrian crossing points are areas of high conflict between pedestrians crossing the road and motorists. It is important to ensure that any lighting provided enhances the area and ensures

that the motorist can identify pedestrians approaching the crossing, on the crossing, or in the area of road immediately adjacent the crossing point.

If Pedestrian Crossings are lit to meet the recommendations of the Institution of Lighting Professionals, Technical Report No.12 “Lighting of Pedestrian Crossings”, or its successor and where applicable, the current British Standard for Road Lighting the requirements above are most likely to be met.

5.1.14 Lighting of Traffic Calming

Traffic calming is designed to reduce the speed and type of traffic using a street or an area.

Lighting of traffic calming features shall comply with Highway (Road Hump) Regulations 1996 Section 5 or its successor. To determine whether additional lighting will be required measurements of lighting levels in the immediate area shall be taken, or calculations can be made by a lighting design engineer or otherwise qualified and competent person.

5.1.15 Conservation and Sensitive areas

In conservation areas and sensitive areas, there may be a requirement for non standard equipment. Any such equipment can only be installed at the discretion of the Network Maintenance Manager (Lighting) and only after a cost analysis has been provided, by the promoter of the scheme, for installation and maintenance of the equipment.

Non standard equipment is defined as anything that is not on the Network Maintenance Manager (Lighting) maintained, “Preferred Equipment List”.

5.1.16 Structural and Electrical testing

All local authorities have a duty of care to ensure highway electrical equipment is maintained in a safe condition. All systems of public lighting will be maintained to a standard that ensures its safe, economic and effective operation.

5.1.16.1 Electrical Testing

Every item of electrical street furniture shall be electrically tested in accordance with the Electricity at Work Regulations and BS 7671 Wiring Regulations.

All electrical equipment shall be tested at a frequency no greater than every 6 years. Where equipment is subjected to misuse or prone to damage or vandalism this frequency will be reviewed by the Network Maintenance Manager (Lighting) and adjusted to ensure compliance with the regulations.

5.1.16.2 Structural Testing

Every item of electrical street furniture shall be structurally tested in accordance with the recommendations of the ILP technical report TR22.

The frequency of testing will be defined by carrying out a risk assessment, taking into account the age, type, location, maintenance of the highway electrical equipment and any potential dangers that may occur from the collapse of the equipment.

5.1.17 Lighting of Buildings and Trees

The lighting of buildings and trees to enhance the night time environment in town centres and local centres is an accepted way of improving the quality of that space.

The selection of good quality vandal resistant fittings, incorporating energy efficient lamps and optical control to suit the task is highly important.

To ensure the most suitable equipment and solution to the task is specified, a competent and qualified lighting designer should be consulted at an early stage in the design process.

Where CCTV is to be employed in an area with lit buildings and trees, the equipment specified must not cause glare or affect the images obtained by the CCTV. It is recommended that early consultation between the lighting designer and the CCTV provider should take place, to ensure there will be no conflict between the two installations.

5.2 Parks and Open Spaces

The specification for lighting equipment will generally match that for highway lighting in all aspects.

The lighting levels required are unlikely to meet any of the requirements of BS EN 13201. Where they do they will meet the requirements of class S5, unless the lighting is required for crime prevention purposes and/or CCTV. In such instances, an appropriate lighting level meeting the requirements of BS EN 13201 will be determined and the lighting designed to meet those requirements.

5.3 Procurement

All new or replacement lighting equipment purchased by the contractor shall be of an acceptable quality and comply with the relevant standards for that equipment and the “Preferred Equipment” list maintained by the Network Maintenance Manager (Lighting).

All equipment purchased for use on the lighting contract shall also take account of the following:

- sustainable consumption and production;
- climate change and energy;
- natural resource protection and environmental enhancement;
- sustainable communities.
- minimising costs over time (whole life costs, the principles of Green Public Procurement);
- maximising community value;
- maximising environmental contribution;

Energy will be procured through a competitive tender process, pooling prices for both Green and Brown energy. Where it is cost effective for the council to purchase Green energy, this will be the preference.

5.4 Design and Adoption criteria

Where proposed works lie within areas designated to be lit then Merton's street lighting and illuminated sign requirements shall form part of any Agreement.

All street lighting development proposals submitted for approval to Merton Council shall be referred to the Network Maintenance Manager (Lighting) for a formal consultation on the design. If the design falls below the required standard, the developer will be informed and a re-design that does comply will be required.

Wider consultations may also be required, particularly in Conservation Areas where the Conservation Officer shall be formally consulted on all schemes.

As a general rule all illuminated street furniture will meet the minimum specification requirements as detailed in this policy and the latest "Preferred Equipment" list. The preferred equipment list is reviewed and regularly updated. A copy can be obtained from the Network Maintenance Manager (Lighting).

Subject to the agreement of the Network Maintenance Manager (Lighting), where a standard of materials is required that exceeds the standard specification and which, as a result, will incur higher maintenance costs, a Commuted Sum, equal to the 1 off replacement cost of the furniture, will be levied payable to Merton Council prior to adoption of the completed scheme. Further advice on commuted sums can be found in the CSS guidance note "Commuted sums for maintaining infrastructure assets".

Where a higher standard of materials is installed without the agreement of the Network Manager and/or where a Commuted Sum has not been paid, then adoption will not be granted and the ongoing maintenance will be the responsibility of the Developers or their appointed Managing Agents.

In the case of illuminated street furniture Embedded Networks are electricity supply networks installed by 3rd party companies rather than the local District Network Operator (or DNO). As a general rule Merton Council has no objection to the provision of such networks, provided they are installed to a standard that can be adopted and maintained by the local DNO should it be necessary.

For each development the standard of lighting shall be in accordance with the requirements of 5.1.6 and any relevant subsections.

For new works on existing adopted highways, e.g. Section 278 works, the Project Manager shall inform the Network Maintenance Manager (Lighting) of the programmed works start date no less than 28 days before commencement on site (including the maintenance numbers of the items covered by the works). The Project Manager shall ensure that the contractor is responsible for the maintenance of all street lighting within the contract site boundaries for the duration of the project. The Project Manager shall also ensure that the contractor maintains the existing level of lighting (either luminance or illuminance) during the course of the project, or until the new lighting comes into operation, and provides a written record of the maintenance undertaken during the course of the works.

The Project Manager responsible for managing/supervising or inspecting new systems of street lighting (including Section 38, section 106 and Section 278 works) shall inform the Network Maintenance Manager (Lighting) of the substantial completion of the works no later than 10 days after completion of the works and pass all documentation to the Network Maintenance Manager (Lighting) at the same time.

The Project Manager shall ensure that all handover paperwork (including as-built drawings, completion certificates, electrical test certificates and inventory records are provided by the contractor 10 working days PRIOR to his request for substantial completion.

5.5 Recycling of Materials

The street lighting contractor shall have a demonstrable recycling and re-use policy.

The disposal of redundant electrical equipment shall be in accordance with the WEEE directive.

5.6 Protection of Flora and Fauna

The Conservation (Natural Habitats &c.) Regulations 1994 and amended 2009 provide protection to European Protected species of plants and animals. These Regulations give local authorities a duty of care to protect flora and fauna. The installation maintenance and removal of lighting equipment can disturb the natural habitat for plants and animals or birds.

Merton council shall make an appropriate assessment of any site where protected species are living, before deciding to undertake or give consent, permission or other authorisation, for a plan or project which is likely to affect the site.

Specific guidance from the Bat Conservation Trust in conjunction with the Institution of Lighting Professionals is found in “Bats and lighting in the UK – 2009”.

6. Asset management requirements

A fully functional and well maintained asset management system is the single most important tool required by the council to enable effective management and maintenance of the electrical asset.

6.1 System Management

Any processes involving the inventory shall be documented and stored in a location that is easily accessible by all staff members that use the system. This will ensure that a consistent approach is being applied.

A test system should be set up and made available to all staff members with access to the live system. All training and new procedures should be attempted in this test system.

6.2 Asset Detail

An asset should be defined by type. A type of asset shall include, but is not restricted to; Street light, sign, bollard, feeder pillar, Belisha beacon, pedestrian refuge beacon, floodlight and camera.

No two assets in a road should be defined by the same identification number on site, or in the database.

Multiple elements, wherever they occur, should be recorded against a single asset. i.e. where a single column has two or more lanterns, the individual characteristics of each lantern should be recorded against the asset unless they have an individual type assigned to their function. The only exception to this will be where a column or sign post is used as the feed point for a private network. In such instances the asset type and number will remain the same as for the primary function of that post.

No asset will be added to the database unless it matches a type within the database.

If a new asset must be recorded, which does not match an existing type already defined in the database, the administrator or a database supervisor will be required to allocate a type for that asset before it is added.

6.2.1 Assets that are not owned by Merton Council

Allocating the ownership of an asset is a key input into having an accurate inventory. The database should include all electrical items in areas accessible to the public. Each of these items should have the owner of the asset identified. The information recorded for each item shall include as much detail as has been

provided by the owner of the equipment, or that can be obtained without dismantling the equipment in any way.

6.3 Cable Circuits

The parent/child relationship for all should be recorded and maintained for all private cable networks. The routes of all private cable networks shall also be viewable on the mapping system within the database.

When any new installation of private cable is completed, the contractor shall provide a plan at a scale of 1:50 showing the details of the new network. This will include the following as a minimum:

- Cable size(s)
- Route of the cable(s) and any offset details to adjacent kerbs and walls
- Depth of cable(s)
- A schematic diagram indicating all connected units
- Electrical test results for the circuit and all connected units

6.4 Bulk Imports and Bulk Updates

The asset management system is capable of Bulk Imports and Updates. These are a crucial step in achieving efficiencies and keeping the inventory up to date.

6.5 Registering Safety Risks

Where there is a potential safety risk associated with the maintenance of an asset, the details associated with this risk must be recorded on the asset management database. The risks recorded could include but are not restricted to, engineering difficulties, non standard traffic management and non standard equipment.

6.6 Archiving old Units

Units that are removed permanently and not replaced shall be “archived” on the database, so that the information is retained for future reference.

6.7 Managing Maintenance Activities

The asset data management system shall be used to program routine maintenance. This includes but is not limited to bulk clean and lamp change, electrical testing and structural testing.

The results from structural and electrical testing shall be recorded on the asset management system from where they will be analysed to establish a forward works program for repair and replacement.

Completed maintenance works details shall always be loaded back in to the inventory management system.

The return from night scouting shall be recorded on the asset management system along with reports from any other source. The out turn print report of these faults will form the basis for the maintenance work that is required. The time taken and repairs carried out shall be recorded on the system.

All faults are linked to the specific asset with the fault and the fault history for that asset is retained within the system.

6.8 Mapping Functionality

The mapping system within the database provides a link to the underlying inventory. Within the mapping system there is a facility to select an asset and be taken into the inventory data to for that asset.

If during routine maintenance or replacement an asset is found to be in a different position to that shown on the map, it can be relocated to the correct location.

6.9 Monitoring Contractor Performance

The asset data management system should be capable of producing any management reports required to monitor the performance of the contractor.

6.10 Energy Reporting

The energy report that is sent to the supplier should be a direct report out of the system without the need for additional manipulation in excel.

6.11 Permitting of Works

Where noticing or permitting is required for excavation or other works, the asset management system shall be set up to create any notices required.

6.12 Response Times

Contract response times are a basic input that can be monitored by the asset management system. The information can be reported as part of the contractor performance monitoring.

7. Assessment of public lighting schemes

Public lighting schemes include any lighting that is installed or maintained within the Borough of Merton, by any group, organisation or individual that is not part of the Merton Council.

7.1 Decorative and festive lighting

The Council supports the erection of decorative and festive lighting on or over the Highway. The guidance for installing and maintaining these items are provided in section 5.1.5 (sub sections 3 to 6). This guidance is also relevant for decorative installations over privately owned land that is open to access by the general public.

7.2 Illuminated Advertisements

All applications for the installation of illuminated advertisements will be assessed for compliance with the ILP Technical Report No.5 – Brightness of Illuminated Advertisements.

Wherever possible advertisements should be lit with a down lighter type of luminaire fitted with a flat glass refractor and mounted so that the glass refractor is horizontal.

7.3 Off Highway Private Lighting

Developments shall be monitored at the planning stage to ensure that any lighting associated with new or refurbished properties does not cause a distraction and danger to the motorist on any Highway. The level, intensity and direction of the lighting will be considered.

Uncontrolled lighting can also be highly intrusive to house owners, cause damage to fauna and flora and pollute the night sky. Developers will be encouraged to minimise the effect of any lighting on all of these.

No lighting aimed above the horizontal will be permitted where lanterns are mounted above 4m from the ground.

In ground mounted up lighters or luminaires which are mounted below 4m from the ground must be controlled so that they only light the intended target area. If required to achieve this louvers, baffles and or barn door style controls may need to be fitted. The calculated effect of these control measures must be included in any planning applications related to the provision of the lighting.

7.4 Sports Lighting

Lighting provided for sport should be designed to the minimum standard recommended by the appropriate sports governing body.

Spill light around the area being lit should be kept to a minimum. Where a Highway is adjacent to the sports area, the level of illuminance provided by the sports lighting at the edge of the Highway shall be no greater than the minimum level for that road when lit in accordance with BS EN 13201 and BS 5489. To achieve this, evergreen screening, fencing and / or louvers and baffles may be required.

The upper limit of the main beam for any sports installation shall be no greater than 70^0 from the downward vertical and there shall be no light emitted from the luminaire above the horizontal.

The operational hours of any sports lighting will be controlled by a curfew, relative to the location.

Where associated lighting of car parks and other social facilities associated with the sport are provided, these may be subject to a staggered curfew which will be agreed at the planning stage

7.5 Car Park Lighting.

Car park lighting shall first be considered for compliance with the environmental zone as defined in section 4 of this document. Where lighting is permitted it shall be designed in accordance with the recommendations in BS 5489 AT to add suffix and table

The equipment used should be in keeping with the development and the surrounding area. Luminaires shall have a suitable optical system, which minimises upward light and controls it to within the limits defined in the ILP Guidance notes for the reduction of obtrusive light."

Car park lighting should be operated for the full period over which the facility will be used. If the car park is locked and barred after a certain time of night, the lighting should be switched off or dimmed, depending on the potential for crime.

7.6 Industrial and Commercial Lighting

Industrial and commercial lighting should be designed in accordance with the recommendations of the “CIBSE Lighting Code”.

Luminaires mounted above 4m from the ground shall not be allowed to emit light above the horizontal.

Where task lighting and security lighting is combined, the lighting shall have control systems that allow a reduction in lighting levels during the security lighting period. This can be done by partial switching off, or dimming of the lighting units.

During the design stage, consideration must be given to the control of light to prevent spill light and light trespass into nearby properties. Lighting calculations may be required from the designer to indicate that these requirements are being met.

The Clean Neighbourhoods and Environment Act 2005 is the legislation to identify and control light as a statutory nuisance. There are premises which are exceptions, which include rail stations and bus stations.

Merton council will use the powers afforded them in the Clean Neighbourhoods and Environment Act 2005, wherever reasonably possible.

7.7 Domestic Security Lighting

In many cases there are no statutory powers that can be used to control the use of domestic security lighting, with respect to the effect of the light on other people or their property.

Merton council shall provide advice and education on the methods that can be employed to control light trespass and light pollution, wherever practical to do so.

7.8 Planning Applications

Planning applications which include lighting will be referred to a suitably qualified and competent lighting engineer for assessment in line with the guidance and information contained in this policy document.

8. Performance indicators

The following Key Performance Indicators (KPI's) shall be applied to street lighting contracts:

1. Number and extent of scouts completed
2. Percentage of return visits
3. Number of emergency callouts
4. Number of faults raised and completed
5. Number of DNO faults
6. Average time from work instruction to repair of fault
7. Percentage of lights working
8. Health and Safety performance of contractor
9. Percentage of recyclable waste sent for recycling

Acknowledgements

ILP Tech Report 24 – Guidance on the development of a public lighting policy
ILP GN01 - Guidance notes for the reduction of obtrusive light

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