



## Economy, Transport and Environment Department

# Technical Guidance Note TG13 - Street Lighting

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*Amendments are indicated by a bar in the left hand margin*

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## 1. Introduction

- 1.1. Hampshire County Council's (HCC) stock of apparatus is maintained on a PFI contract running from 2010 to 2035. The PFI's Operating Sub-Contractor is Enevero (formally SSE Enterprise Lighting Services).
- 1.2. Hampshire County Council has no discretion for relaxation of the Accrual Required Standards of the PFI Output Specification.
- 1.3. This Technical Guidance Note 13 summarises the Development Standard and ensures compliance with the Accrual Required Standards.
- 1.4. Commuted Sums will apply to any non-standard apparatus (refer to the [Commuted Sum Policy](#)). Specification details of all such apparatus are to be agreed in consultation with Hampshire County Council's Street Lighting Section prior to installation.
- 1.5. For further guidance on policy & practice on street lighting in Hampshire see the [Street Lighting Maintenance Management Plan \(SLMMP\)](#).

## 2. Definitions and Abbreviations

<b>AADT</b>	Annual average daily traffic
<b>Accrued</b>	When applied to any item of Apparatus, Apparatus which has become the responsibility of the Hampshire County Council under the terms of its PFI Street Lighting Maintenance Contract.
<b>Apparatus</b>	Street lighting and off-highway lighting installations and materials which, for the avoidance of doubt and without limitations includes:- lighting points, lighting columns, posts, straight posts (only to the extent used as an additional support for an illuminated traffic sign) together with their respective attachments, luminaires, lanterns, shields, control gear, control devices, switches, relays, meters, illuminated traffic signs, subway lighting, illuminated traffic bollards, Belisha beacons, variable message signs, illuminated pedestrian refuge beacons, school crossing patrol warning lights, flood lighting of monuments and buildings, surface car park lighting systems, wall mounted connection boxes, conduits, surface mounted wiring/cabling, feeder pillars, Authority owned Private Cable Networks and all associated components.
<b>Authority Attachment(s)</b>	Any Authority owned street or traffic signs or sign plate or notices or other equipment and items authorised by the Authority to be attached to Apparatus including (and in the case of illuminated items only) to other structures.
<b>CCT</b>	Correlated Colour Temperature
<b>CDM</b>	Construction, Design and Management Regulations
<b>De-Accrued</b>	When applied to any item of Apparatus, Apparatus which is no longer the responsibility of the Hampshire County Council under the terms of its PFI Street Lighting Maintenance Contract.
<b>Developer</b>	Any company, authority, body or individual, and their agents, carrying out the development with ownership/ responsibility of planning set up, organisation, delivery and maintenance of the site changes being proposed.
<b>Developer Portal</b>	Hampshire County Council's Online portal for the submission and tracking of S278/S38 applications

<b>DfT</b>	Department for Transport
<b>DNO</b>	(a) a distribution network operator and/or (b) an independent distribution network operator within the meaning of Part 1 of the Electricity Act 1989 as amended by the Utilities Act 2000.
<b>Excusing Cause</b>	Any event whereby equipment can be suspended from Hampshire County Council's PFI Street Lighting Maintenance Contract.
<b>HCC HDA</b>	Hampshire County Council Highway Development Agreements Team
<b>HSL</b>	Hampshire County Council Street Lighting Team
<b>HEML</b>	Hazard Elimination Management List
<b>ILP</b>	Institution of Lighting Professionals
<b>Mayflower</b>	Central Management System for lighting control
<b>MEWP</b>	Mobile Elevating Work Platform
<b>NJUG</b>	National Joint Utilities Group
<b>RRRAP</b>	Road Restraints Risk Assessment Process
<b>SLL</b>	Society of Light and Lighting
<b>TfL</b>	Transport for London
<b>UmSUG</b>	Un-metered Supplies User Group

### 3. Technical Requirements – Planning & Design

#### 3.1. Planning of Developments

3.1.1 Developers and their Consultants need to consider street lighting at the earliest opportunity and should consider:

- a) Sustainability. Public realm lighting must minimise CO<sub>2</sub> emissions and future maintenance costs.
- b) Design Codes. Development Design Codes should incorporate a site-specific lighting design brief issued by the Highway Authority.
- c) Street Layout. If footpaths & cycle paths are routed separately from the road then they may require separate systems of lighting.
- d) Highway Trees. Combined arboriculture and lighting advice should be obtained at an early stage from the Highway Authority before tree positions are agreed.
- e) Ecology & Lighting. Where planning and/or environmental assessments have identified the presence of protected species, lighting (and alignment design) is to be designed to minimise its impact on wildlife including maintaining dark corridors where required.
- f) Non-standard apparatus. Any departure from standard materials will require specific approval by the HCC's Street Lighting Section as part of the design approval process. Non-standard apparatus will always incur commuted sum charges, and some may not be permitted within the Highway.

#### 3.2. Design Standards – BS 5489 & BS EN 13201

3.2.1 Lighting designs should be based on the current versions of:

- a) BS 5489-1 - *Code of Practice for the Design of Road Lighting (Part 1: Lighting of Roads and Public Amenity Areas)* and the associated current BS EN 13201 Standards
- b) BS 7671 - Requirements for Electrical Installations. IET Wiring Regulations
- c) BS EN 12899 - Fixed, Vertical Road Traffic Signs - Part 1: Fixed Signs
- d) BS EN 12464 - Outdoor Lighting
- e) BS EN 40-3 - Lighting Columns. Design and Verification – Verification by testing
- f) PD 6547 - Guidance on the use of BS EN 40,
- g) HSG 38 Lighting at Work
- h) HSE GS6 Avoiding danger from overhead lines.

3.2.2 Relevant CIE, National Highways, Manual for Streets, Manual for Streets 2 technical guidance should be followed.

### 3.3. Institution of Lighting Professionals (ILP) Guidance

- 3.3.1 Designers are to take guidance from the Institution of Lighting Professionals' (ILP) technical reports, professional lighting guides and guidance notes.

### 3.4. Environmental Zones and Light Intrusion

- 3.4.1 Developments should be categorized by Environmental Zones in accordance with *ILP Guidance Note for the Reduction of Obtrusive Light*.
- 3.4.2 Light intrusion (e.g. into windows) is to be avoided and any apparent issues are to be monitored by the Developer in accordance with *ILP Guidance Note for the Reduction of Obtrusive Light*. Lighting designers should produce vertical illuminance calculations where appropriate.
- 3.4.3 For residential developments designers should be targeting a post-curfew maximum of 2 lux light intrusion as per the requirements of an E3 zone in Table 3 of ILP GN01/21.

### 3.5. Construction, Design & Management Regulations (CDM)

- 3.5.1 Lighting design must be carried out by appropriately qualified competent persons in accordance with current CDM regulations. For further information refer to [ILP Guidance Note 4 CDM 2015 Overview](#), and Design Manual for Roads and Bridges TD501 Road Lighting design clauses 1.5 and 1.6. All organisations and personnel delivering an exterior Highway Lighting Design shall be registered with an appropriate professional institution, such as the Institution of Lighting Professionals (ILP) and the Engineering Council (ECUK) or Society of Light and Lighting (SLL) through Chartered Institution of Building Services Engineers (CIBSE), and be able to demonstrate to the County Council that a person has the appropriate qualifications and/ or experience. Designs by non-competent persons or organisations will not be accepted.
- 3.5.2 A clear note must be appended to the street lighting layout drawings detailing which of the Highway Electrical Design Procedures was used by the designer – see the *HEA Guidance Note [CDM 2015 Regulations / Applicability to Highway Lighting Design](#)*.
- 3.5.3 If a site involves changes to the existing highway network a solely desktop indicative lighting design is not acceptable. If the lighting designer uses Design Method Statement 2 then the Principal Designer will need to produce a Hazard Elimination & Management List (HEML) for inclusion with the detailed design submission.



**Design to Method Statement 2 is not acceptable for S278 or changes to the existing highway**



### 3.6. Hazard Elimination & Management List (HEML)

- 3.6.1 As defined within current CDM regulations, all risks at construction, maintenance, decommissioning & replacement must be assessed as an integral part of the design process. Guidance on risk assessment and the use of risk matrices is provided by the Health & Safety Executive.

**A Hazard Elimination & Management List must be submitted with all detailed lighting designs.**

### 3.7. HSG47 - Avoiding Danger from Services

- 3.7.1 The Developer should ensure that underground service locations are identified and that designs are based on up-to-date information. Designers are to “design-out” risks where practicable and to ensure that any significant residual hazards are documented and noted on layout drawings – refer to HSG47 *Avoiding Danger from Underground Services*.

### 3.8. G39/1 – Electrical Safety

- 3.8.1 Designers are to ensure compliance with G39/1 Model Code of Practice Covering Electrical Safety in Planning, Installation, Commissioning & Maintenance of Public Lighting and Other Street Furniture.

### 3.9. GP10 – Safety During Installation

- 3.9.1. To be used in conjunction with G39/1, for lighting columns in proximity of High Voltage overhead lines. Refer to: ILP, GP10: Safety During the Installation and Removal of Lighting Columns and Similar Street Furniture in Proximity to High Voltage Overhead Line.

### 3.10. Street Clutter

- 3.10.1. Proliferation of street clutter is undesirable. For sign fixing methods see Section 3.27n. Contact [tpa@enerveo.com](mailto:tpa@enerveo.com) for permission to make attachments.



The designer shall check that columns are designed to accommodate the loading from the additional weight and windage of any Authority Attachments.

### 3.11. Column Height Constraints

- 3.11.1. Column heights should be considerate of the scale of the street scene. Column height and luminaire tilt angles are constrained by the road type and environmental context:

**Table 1: Column Height & Luminaire Tilt Constraints**

Road type	Maximum height by environmental zone <sup>(1)</sup>	Maximum luminaire tilt <sup>(2)</sup>
<b>Strategic route</b> "A" class, dual carriageways	10m (zones E1/E2)	0° (zones E1/E2)
	12m (zones E3/E4)	5° (zones E3/E4)
<b>Main distributor</b> other "A" class	10m (zones E1/E2)	0° (zones E1/E2) 5° (zones E3/E4)
<b>Secondary distributor</b> "B" & "C" class	8m (zones E1/E2)	0° (zones E1/E2)
	10m (zones E3/E4)	5° (zones E3/E4)
<b>Road linking main roads</b> & secondary roads	6m (zones E1/E2)	0° (zones E1/E2)
	8m (zones E3/E4)	5° (zones E3/E4)
<b>Subsidiary roads</b> high traffic flow	6m (zones E1/E2)	0° (zones E1/E2)
	8m (zones E3/E4)	5° (zones E3/E4)
<b>Subsidiary roads</b> normal or low traffic flow	6m	0° (zones E1/E2) 5° (zones E3/E4)
<b>Footpaths, Cycle paths</b>	6m	0° (zones E1/E2) 5° (zones E3/E4)
<b>City/Town Centre</b> (zone E4)	10m	5°
<b>Village Centre</b>	8m (zone E3)	5° (zone E3)
	6m (zone E1/E2)	0° (zone E1/E2)
1. The Environmental Zones are defined in ILP 'Guidance note for the reduction of obtrusive light' 2. Tilt angles are only a guide and optimal tilt to avoid upward light may vary between lanterns – see manufacturers' luminaire polar curves/Cartesian diagrams		

### 3.12. Lighting Layout Drawing

- 3.12.1. See the Street Lighting Section on the [Technical Guidance web page](#) for an example lighting drawing showing typical information to be included.
- 3.12.2. Lighting Layout Drawings should contain sufficient information to ensure lighting can be set out and built as designed without scaling of drawings.
- 3.12.3. Setting out information should be provided for lighting column position and lantern aiming. Spacing and setback tolerances for lighting columns are to be provided including:
  - a) Setting out table (or note to see Lighting Reality calculations).
  - b) SHE Box & reference to risk assessment.
  - c) Tilt/aiming, max/min spacing, setback.
- 3.12.4. Design drawings are to be supplied at scale of at least 1:500 & maximum size A1 (with general text no smaller than 2mm at original scale) and are to include:
  - a) Statement of the design procedure used.
  - b) Summary of target lighting class(es).
  - c) Boundary showing adoptable extents (highlighting extent of any S38/S278) & any easements required.
  - d) Tree planting layout (including anticipated mature canopy extents). For tree pruning refer to HCC Standard Detail [HCC11/L/085](#).
  - e) Vehicular crossovers & driveways.
  - f) Significant residual hazards.
  - g) Each column to be annotated with setback distance from kerb edge.
  - h) Clearance distances from columns to hazards to be highlighted where useful.
  - i) Environmental and ecological constraints relevant to lighting.
  - j) Positions of highway electrical apparatus with lantern aiming.
  - k) Key/legend – including materials specification with quantities.
  - l) For each LED lantern these attributes need to be identified: luminaire body, CCT, optic, flux output, system wattage and UMSUG codes.
  - m) Non-standard columns will require accompanying detail drawings.
  - n) Existing & new unit ID numbers.
  - o) A schedule of illuminated apparatus, incoming supply cable owner (e.g. DNO, IDNO, private).
  - p) Where 'private' (non-DNO/IDNO) cable systems are to be used all cable & duct routes are to be shown, along with schematic circuit diagrams (supporting calculations will also be required).

- q) Private lighting installed on housing developments in areas adjacent to highway lighting is to be indicated along with note of the responsible maintenance management companies.
- r) Isolux contours should not be shown on the lighting layout drawing. Where Isolux contours are required due planning or environmental issues they should be shown on a separate Isolux contour drawing.
- s) Illuminated sign positions, (lantern types, Mayflower, sign face diagram number and mounting height to be included within Key / Legend).

3.12.5. Revised drawings should include a summary schedule of revisions.

3.12.6. Drawings should clearly state their status e.g. "For Review", "Construction", "As-built".

### **3.13. Designers Narrative**

3.13.1. A designer's narrative will be required with each design, to include a commentary on the decisions for design constraints; explain any deviation from design standards to include set information below where applicable.

- a) Standard applied
- b) Environmental zone
- c) Traffic flow AADT road speed limit
- d) Lighting class confirmation (BS5489, CIE 115 Lighting Class Risk Assessment)
- e) S/P ratio application where relevant
- f) Commentary on Collision Risk Assessments / Passive Safety Risk Assessments as defined by TG14 Passive safety risk assessment
- g) Column location (setbacks, clearances and clear zones)
- h) Sign height
- i) Maintenance factor
- j) Dimming regime
- k) Ecology issues
- l) Discuss concerns from HEML
- m) Designers risk assessment
- n) Mitigation measures and standards relaxation

### **3.14. Maintenance Factors (new equipment)**

3.14.1. Overall maintenance factors are derived from BS5489 methodology. For an HCC PFI-approved IP65 luminaire, such as Urbis Axia, the overall maintenance factor is derived thus:

- a) 48-month cleaning cycle = 0.94 (no allowance for <6m in E3/4 zones)
- b) LED lumen maintenance at 25 years = 0.90
- c) "lamp" survival factor (failure fraction) = 1.0

- d) Overall maintenance factor = 0.85

### 3.15. Maintenance Factors ('legacy' luminaires)

3.15.1. If the contribution from existing 'legacy' luminaires is to be included within design calculations the following maintenance factors apply (existing optic settings used at specific sites will need to be obtained from HCC):

- a) 24W, 36W & 55W PLL = 0.85
- b) 45W & 60W CPO = 0.82
- c) 90W CPO = 0.79
- d) 100W & 150W SONT = 0.88

### 3.16. Lighting Design Calculations

3.16.1. These should be from Lighting Reality with file names that clearly describe the location and should include:

- a) 'User notes/title page notes' – these should describe the target lighting class and detail any deviations from the target lighting class. Detailed commentary should be provided in a separate designer's narrative.
- b) 'Roadway' calculations – the original RTMR files are required to demonstrate compliance, determine optimal spacing & optic choice for the site's predominant road geometries. Maximum /minimum luminance or illuminance spacing calculation to demonstrate compliance in area calculations and glare limits.
- c) 'Outdoor' calculations – the original RTMA files are required for illuminance of irregular areas; multiple calculation grids should be provided, with grids confined to relevant areas to minimise any distorting effects on average illuminance values. Luminaires should generally be aimed perpendicular to the adjacent kerb or road centre line. To demonstrate the correlation of design calculations & column positions, the lighting layout drawing with relevant topographic information (dwg / dxf) is to be used as the base drawing within Lighting Reality.
- d) Vertical grids shall be provided to building facade's where contours exceeding permitted values of light into windows for relevant environmental zone bisect properties.
- e) PDF & 'read-only' files (if supplied additionally as a record) should exclude greyscale and the results should be displayed.

### 3.17. Design dimming / Variable Light Output

3.17.1. Design work should achieve the target lighting classes (as specified in the site-specific design brief) without recourse to arbitrary dimming.

### 3.18. Conflict Areas, crossings, traffic calming, cycleways

- a) Roundabouts or complex junctions - the design may be deconstructed into multiple calculation grids, with each conflict area limited to include the area of conflict ahead of the driver and the adjacent area where a conflicting body might approach from.
- b) Zebra crossings – see ILP document TR12 *Lighting of pedestrian crossings* and also HCC Standard Detail drawing [HCC11/L/025](#).
- c) Signalised crossings are generally not considered to need additional lighting. However, where lighting exists refer to ILP document PLG02 – The application of conflict areas on the-highway. See HCC documents TG4-1-Traffic Signal Junctions and TG4-2-Signal Controlled Crossings.
- d) Traffic calming – see ILP document TR25 *Lighting for traffic calming features* (see also Technical Guidance Note TG11 - Traffic Calming).
- e) Cycleways & shared surface paths – see ILP document PLG23 – Lighting for Cycle Infrastructure (see also Technical Guidance Note TG10 - Footways, Cycleways, Shared Surfaces).
- f) Luminous intensity class (G class) of luminaires for conflict areas should not be lower than the approach road. Luminance intensity G Class should be used, reference BS 13201- part 2 annex clause A.3.4.
- g) Where uncontrolled crossings are proposed or present, close to either new, or existing highway lighting installations, the extent of lighting should be reviewed. Please refer to ILP documents PLG02 and TR12.

### 3.19. Apparatus Positioning & Clearances

3.19.1. Apparatus positioning should be in accordance with good industry practice to avoid restricting pedestrian movement whilst ensuring the lighting unit can be safely maintained. See also section 3.25. for column location risk assessment evaluation guidance.

- a) Apparatus is to be sited within the highway – easements will be required where equipment is sited in private land (easement size shall be a minimum 1.0m radius of the column and connected to the highway).
- b) Clearance from carriageway – shall not be less than the **minimum** defined in Table 2. Greater clearances may be desirable. All clearances are to be itemised on detailed design layout drawings.

**Table 2: Horizontal Clearances**

Speed Limit (mph) <sup>1</sup>	Minimum horizontal clearance <sup>2</sup>
20	0.8m
30	0.8m
40	1.0m
50	1.0m
60	1.5m
70	1.5m
1 - Table derived from BS5489-1:2013, 4.3.3.3 – Table 2 (please note that this TG13 table refers to “speed limit” not “design speed”)	
2 - Clearance is subject to other factors, e.g. passive safety risk assessment	

- c) Footways – columns should generally be sited at the rear of the footway.
- d) Verges – where verges are provided between carriageway and footway then columns may be sited in the verge, provided that minimum horizontal clearances are maintained (as Table 2)
- e) Clearance from crossovers/driveways – minimum lateral clearance of 0.8m to the path of any vehicle crossover should be maintained.
- f) Kerbs <100mm - where footways are delineated by kerbs with 25mm upstand then columns should not be planted in such footways unless they are adjacent to permanent solid features behind (e.g. adjacent wall).
- g) Shared surfaces - residential roads with shared surface arrangements will require careful consideration of column positions; there is currently no framework whereby HCC can adopt columns that are not protected by conventional kerb upstand and clearance from carriageway.
- h) Clearance from buildings – such clearance as necessary to avoid disturbance to foundations or structures.
- i) Hazards – columns are to be positioned to avoid conflict with hazards and to allow safe maintenance; working widths for barriers and road restraint systems should be noted.
- j) Door alignment – column doors should be ‘downstream’ from adjacent traffic flow (such that opening a door requires a person to face the oncoming traffic).
- k) Boundaries - ideally columns are to be sited on property boundaries.
- l) Sightlines – sightlines from vehicular access/gateways should not be blocked or obscured.

- m) Footpaths – raise & lower columns are to be used where access via MEWP cannot be guaranteed and to be positioned so that apparatus can be safely maintained in the future.
- n) Cycle tracks – columns shall be set back a minimum 1m clear of cycle tracks such that they do not obstruct overhanging handlebars, as per ILP PLG23 Lighting for Cycling Infrastructure. This includes shared use facilities.
- o) Wall-mounted lanterns - may be considered. Minimum vertical clearances above highway shall be maintained. On new developments wall-mounted apparatus requires a Deed of Dedication, not a Wayleave Agreement.
- p) Signs – Any signs fixed to columns should give a minimum clearance above footway of 2.3m (2.4m for cycle tracks/shared use) and 0.45m clearance to kerb.
- q) Overhead power lines – early consultation is required for proposals in the proximity of overhead power lines.

### 3.20. Highway Trees & Lighting

3.20.1. Lighting should be planned as an integral part of the street layout, including any planting.

- a) Horizontal clearance - maximum growth of a tree canopy should be >5m from any lantern unless specifically agreed with the County Council.
- b) Vertical clearance - in some cases (e.g. with mature trees) it may be possible to locate columns beneath the tree canopy provided that ≥1.6m clearance is kept above the lantern.

3.20.2. See Standard Detail [HCC11/L/085](#) for details of required clearances.

3.20.3. For further guidance regarding trees, see Technical Guidance Note TG15 – Trees, Landscape and Ecology.

### 3.21. Ecology & Lighting

3.21.1. Lighting design of any previously unlit area needs to consider ecological impacts. Lighting proposals should avoid or minimise the potential for impacts on existing or created habitats. See ILP GN08/18 “Bats and Artificial Lighting in the UK”

3.21.2. It may be possible to mitigate lighting impacts through other measures such as:

- a) Lantern tilt - may be adjusted (the optimal tilt to minimise spill light depends on the optical control characteristics).
- b) Louvres - may be specified (internal louvres preferably before external louvres or shields).



- c) Light sources - may be altered to warmer colour temperature and spectral distribution.
- d) Reducing the mounting height - of lanterns sited near environmentally sensitive areas.
- e) Reducing target light levels - in sensitive areas; where a development abuts open country (i.e. where two environmental zones meet) a buffer zone (c.15m) within the development may be considered to belong to the darker environmental zone and therefore within that strip the specification of target light levels, lantern tilt, light source and lighting times may differ from the rest of the site.
- f) Positioning lights sensitively – e.g. by avoiding positions at ecologically sensitive areas of concern.
- g) Use suitable optic photometry – to reduce lighting footprint.

### 3.22. Non-Standard Apparatus & Commuted Sums

- 3.22.1. Departure from standard materials and colours will require the specific technical approval by the HCC's Street Lighting Section. Non-standard apparatus will incur commuted sum charges.
- 3.22.2. Power supplies should be provided via mains DNO networks; with few exceptions private cable networks are non-standard and will incur commuted sum charges.

### 3.23. Power Supply

- 3.23.1. The Developer is to procure unmetered low voltage electricity supplies for all apparatus (single-phase 230v earthed mains power supply). DNO - by preference, the supply should be from the local/host DNO. Scottish & Southern Energy is the Distribution Network Operator within Hampshire. Developers are advised to allow sufficient time for liaison with the DNO in advance of works (email: [connections@sse.com](mailto:connections@sse.com) ).
  - b) Private cable networks – may be specified where mains supply cables cannot be provided – e.g. for apparatus such as illuminated signs sited on traffic islands (see Section 3.32) or for passively safe apparatus (see Section 3.31). Supporting calculations should be provided. Private cable networks proposed in other circumstances will incur commuted sum charges (see Section 3.22).

- 3.23.2. In order to commission lighting units developers will first need to sign an Unmetered Connection Agreement (UmCA) with the host DNO (SSE) & sign-up with an electricity supplier – for more information see <https://www.ssen.co.uk/ConnectionsYouHaveaChoice/> and also <https://www.ssen.co.uk/UnmeteredConnectionsFlowchart/>
- 3.23.3. Power consumption and UMSUG codes for all units should be recorded on the detailed design drawings.

### 3.24. Electrical Test Data

- 3.24.1. The Developer must carry out electrical testing of apparatus in accordance with the requirements of the current edition of BS 7671 (the IEE Wiring Regulations) which identifies the electrical testing required, suitable Test Certificate format for recording results & standard methods of testing.



**Test certificates must not be more than 12 months old at the time of pre-accrual inspection**

- 3.24.2. All test results are to be recorded and presented to the Highway Authority before accrual.
- a) BS 7671 tests for apparatus must include:
- Continuity of protective conductors including main and supplementary equipotential bonding.
  - Insulation resistance at a test voltage of 500V to be not less than 1.0 MΩ.
  - Insulation resistance at a test voltage of 500V to be not less than 6.0 MΩ.
  - Insulation of the site-built assemblies.
  - Polarity, including the continuity of circuit conductors.
  - Earth fault loop impedance at every fuse junction unit.
  - Operation of residual current devices where necessary.
- b) BS 7671 tests for private cable networks must additionally include:
- Cable Sheath Insulation Test.
  - Earth electrode Resistance.
- 3.24.3. Electrical test certificates should be referenced against a named As-Built drawing and the column/sign numbers should correlate.
- 3.24.4. Each separately fused lantern should have test certificate.

### 3.25. Collision Risk Assessment / Passive Safety

3.25.1. HCC uses the UK Roads Liaison Group (UKRLG) document “Provision of Road Restraint Systems on Local Authority Roads” – this uses speed limit and traffic flow criteria to determine which risk assessment method to use. An appropriate Risk Assessment method shall be determined, in accordance HCC TG14 Collision Risk Assessment, VRS & Passive Street Furniture). The lighting designer should liaise with an appropriately qualified Highway Design Engineer to determine the appropriate column type, location and/or need for protection required. Guidance documents, referenced within TG14 are noted in Table 3 below, which additionally includes TR30 for the use of passively safe lighting columns and signposts.

**Table 3: Applicable methods for determining when a RRS is required**  
(Table derived from UKRLG)

Traffic Flow (AADT)	Speed Limit (MPH)	Guidance to use	Risk assessment method
>5000	≥50	CD 377 ILP TR30	RRRAP TR30 Flowchart
>5000	<50	UKRLG/DfT Provision of Road Restraint Systems on Local Authority Roads	Relevant UKRLG/DfT Provision of Road Restraint Systems on Local Authority Roads method (A,B,C as appropriate)
<5000	≥50		
<5000	<50		



**Street lighting columns shall not be positioned within the ‘working width’ of Road Restraint Systems**

See also Technical Guidance Note TG14 “Collision Risk Assessment, VRS and Passive Street Furniture” for further guidance.

### 3.26. Switching & Mayflower Remote Monitoring System

3.26.1. New lighting will need to be fitted with nodes to enable their correct switching remotely. HCC specification requirements:

- a) Before accrual, all lanterns are to be commissioned with Mayflower CMS nodes which allow individual streetlights to be monitored and switched and for light output to be dynamically controlled.
- b) Individual Mayflower CMS nodes fit into a patented 6-pin socket (S6000) built into each road lighting lantern. For some specialist

lanterns (e.g. subway lighting units) internal nodes are fitted inside the lantern. For illuminated sign lights internal nodes are fitted inside the lantern.

- c) Each individual lighting scheme incorporates at least one Sub-Master unit to link with the back-office central control system. The Sub-Master Unit (which also fits into the 6-pin S6000 socket) should be fitted to a lantern which is near to the population of nodes that it controls. Once energised the Sub-Master will control any individual node on nearby lanterns.
- d) If required Mayflower can advise on the optimum location for the Sub-Master unit.
- e) The 6-pin S6000 socket can accommodate a standard NEMA-type photocell, which could be fitted temporarily, allowing installation of the Nodes & Sub-Master at a later date (Pre-Accrual); any conventional photocells fitted temporarily should be set to switch on at 35 lux & to switch off at 18 lux.
- f) Each Sub-Master and Node is identified by a unique sixteen-digit barcode number. Mayflower provides barcode stickers with the apparatus: one sticker is to be mounted in the base of each column (suggested that the top of the supply cut-out should be wiped clean and the sticker affixed) and one sticker on a plan/column installation sheet which the Developer shall present to Hampshire County Council prior to Accrual.

3.26.2. For further details please contact: Mayflower Complete Lighting Control, Solent Park, Walton Road, Portsmouth, Hampshire PO6 1UJ. Email: [enquiries@mayflowercontrol.com](mailto:enquiries@mayflowercontrol.com) - tel. 0345 076 7664

### 3.27. Apparatus – Lighting Columns

- a) See HCC Standard Details [HCC11/L/010, 015 and 020](#).
- b) Columns are to be manufactured in accordance with BS EN 40 & PD6547, and with a design life of 50 years.
- c) Columns shall be tubular steel hot-dip galvanised with planted root (see also 3.10.1 and Table 4 below).
- d) Columns will be “post-top” style. Outreach brackets may only be specified in agreement with HCC’s Street Lighting Section.
- e) Column corrosion protection: root protection internal/external to be two-pack extended cure MIO; finish to be two-pack polysiloxane, (colour as specified).
- f) Column painting to be factory-finish. Finish colour to be “Mineral” green - BS4800 12 B 21 - unless otherwise specified with the prior

agreement of the HCC Street Lighting Team. Columns and lanterns are to colour-match.

- g) Standard columns shall be designed to be capable of accepting the loads indicated in Table 4. If greater loads are required, then “heavy-duty” column design will need to be confirmed with detail drawing & manufacturer’s design certificate at the design stage.

**Table 4: Wind Loading**

Column height/type	Lantern weight	Lantern windage	Sign area	Sign weight	Sign eccentricity	Sign drag coefficient
5/6m post-top	10kg	0.13m <sup>2</sup>	0.3m <sup>2</sup>	5.0kg	0.4m	1.8
8m post-top	11.5kg	0.145m <sup>2</sup>	0.3m <sup>2</sup>	5.0kg	0.4m	1.8
10m post-top	21kg	0.22m <sup>2</sup>	0.3m <sup>2</sup>	5.0kg	0.4m	1.8
12m post-top	21kg	0.27m <sup>2</sup>	0.3m <sup>2</sup>	5.0kg	0.4m	1.8
5/6m post-top “raise & lower”	9.5kg	0.055m <sup>2</sup>	0.3m <sup>2</sup>	5.0kg	0.3m	1.8

- h) Door lock to be M8 bolt with anti-vandal hexagonal head with integral centre-pin.
- i) Column baseboards at least equivalent to the door size and made of treated hardwood of sufficient size to accommodate all control equipment and service cut-outs; boards must be positively secured to the column by two flush fitting screws.
- j) Earthing terminal to be 8mm diameter brass terminal with brass washers & nuts.
- k) Columns to be supplied with manufacturer-applied ground-level / planting depth marker tape affixed to the root/base, and marker tape to remain attached after installation.
- l) Any sign attachments agreed shall comply with Table 4. No signs >0.3m<sup>2</sup> to be attached to columns.
- m) No attachments shall be fitted to mid-hinged columns.
- n) Attachments to columns, where agreed, shall be fixed with circumferential clamps of stainless steel AISI Grade 201 with neoprene strips placed under the clamps to prevent damage to the column or its protective coating.
- o) Where planted root columns are not viable a flange base with designed foundation may need to be specified.

- p) The column foundation details shown on drawings [HCC11/L/035 & 040](#) assume poor soil conditions; column manufacturers detail drawings should be cross-checked to ensure all requirements are met (PD6547).
- q) Column data sheets and manufacturer's standard detail drawing to be provided before accrual (Manual of Contract Documents for Highway Works, Specification for Highways Works, Appendix 13/2 and 13/3 Column and Bracket Data Sheets).
- r) Where socketed foundations are required for passive safety, construction programming or to ensure stability where close to ditches or embankments, NAL type sockets or similar approved should be used in preference to individually designed pad foundations for flange-based columns

### **3.28. Apparatus – Illuminated Signs**

- 3.28.1. Illumination requirements for signs shall comply with the "Traffic Signs Regulations and General Directions", BS EN 1289-1, Fixed Vertical Road Traffic signs – Part 1 HCC Technical Guidance Note TG12 – Signs and Bollards.
- 3.28.2. HCC specification for illuminated road signs is as follows:
  - a) Hot-dip galvanised steel wide base post (in Conservation Areas the finish should match the lighting columns).
  - b) Door lock to be M8 bolt with anti-vandal hexagonal head with integral centre-pin (internal locking mechanism to be greased).
  - c) Baseboards at least equivalent to the door size and made of treated hardwood of sufficient size to accommodate all control equipment and service cut-outs; boards must be positively secured to the column by two flush fitting screws.
  - d) Earthing terminal to be 8mm diameter brass terminal with brass washers & nuts.
  - e) Illuminated sign plates to class RA2 BS EN 12899.
  - f) Sign light units to be Simmons signs integrated LED LUA/LUB with die-cast aluminium body (or similar approved).
  - g) Sign lighting units to be polyester powder-coated to finish Aircraft Grey (unless otherwise specified).
  - h) Sign light output determined by size of sign plate, as follows: 600mm Ø sign plates 3x1w integrated LUA; ≤750mm Ø sign plates 6x1w integrated LUA; >750mm sign plates LUB 10x1w LED.
  - i) Sign lighting units to be fitted with internal Mayflower node.

- j) Sign lighting units require an electronic non-dimmable ballast.

### **3.29. Apparatus - Road Lighting Luminaires**

- 3.29.1. All new developments will use LED luminaires. These will generally be of neutral white colour temperature (4,000k) though there may be applications where warm-white (3,000k) is required due to environmental reasons, or within National Parks. Refer to Appendix A.
- a) Lantern body & canopy to be powder-coated, paint colour to match columns.
  - b) Standard colour is mineral green [BS 4800 12 B 21] unless otherwise specified. In some areas the use of “black” [BS 4800 00 E 53] may be specified but only by agreement with the County Council.
  - c) Ballast to be electronic & fully dimmable via DALI protocol.
  - d) Switching – all lanterns to be fitted with Mayflower 6-pin S6000 socket & external node (except Subway & Underpass lighting units and some specialist lanterns which are to be fitted with Mayflower internal node).
  - e) LEDs on roadway lighting are generally to be 4,000k neutral white LEDs – unless a different CCT is specified by HCC’s Street Lighting Section or is required for compliance with ecological good practice – see Section 3.21).
  - f) Where “zebra” asymmetric luminaires are specified (e.g. at a Zebra crossing) these are to be of CCT a single step cooler than the adjacent roadway lighting (see [HCC11/L/025](#)).

### 3.30. Apparatus - Internal Wiring of Columns & Signs

- 3.30.1. See Standard Detail [HCC11/L/060](#).
- 3.30.2. DNO supply cables to be terminated in single-phase double pole isolator manufactured from semi-crystalline thermal plastic with improved heat resistance with HRC fuses to BS EN 60269 (e.g. Lucy Titan 2). Terminal shields will be fitted to prevent accidental contact with live conductors.
- 3.30.3. Internal wiring to lantern to be multi-core PVC flexible (H05VV-F or H07RN-F) – for columns up to 10m height cores to be 1.5mm<sup>2</sup> – for columns over 10m height cores to be 2.5mm<sup>2</sup>.
- 3.30.4. Earthing conductor to be 10mm<sup>2</sup> PVC insulated coloured green/yellow; connections to be by bolted crimped terminations.
- 3.30.5. Internal cabling to be neatly clipped to the backboard by use of 2no. fixed plastic cable clips securing the flex to the backboard. All fixing screws to be stainless steel as per Standard Detail Drawing HCC11/L/060.
- 3.30.6. Backboards to be securely fixed to column base.

### 3.31. Apparatus - Passively Safe Equipment

- 3.31.1. Apparatus is to be selected in accordance with the requirements of BS EN 12767:2019 (Table NA1) and as outlined in the ILP's TR30 'Guidance on the Implementation of Passively Safe Lighting Columns and Signposts'. See also Technical Guidance Note TG14 "Collision Risk Assessment, VRS and Passive Street Furniture" for further guidance.
- 3.31.2. Columns are to be installed in retention sockets (such as NAL) with foundations in accordance with manufacturer's instructions. Where possible sockets are to be restricted to a maximum depth of 600mm for ease of installation and on-going maintenance. However deeper sockets are permitted where it is not possible to provide a foundation of sufficient size for a 600mm socket.
- 3.31.3. Electrical disconnection system to be NAL SIS system. SIS impact sensor to be installed in each item of passively safe apparatus. SIS monitoring unit to be fitted in an above-ground location (lamp column, wide-base sign post or feeder pillar) located outside the clearance zone.
- 3.31.4. Mains DNO/IDNO supply may not be provided with passively safe equipment.



**Passively safe equipment must be supplied by a private cable system.**



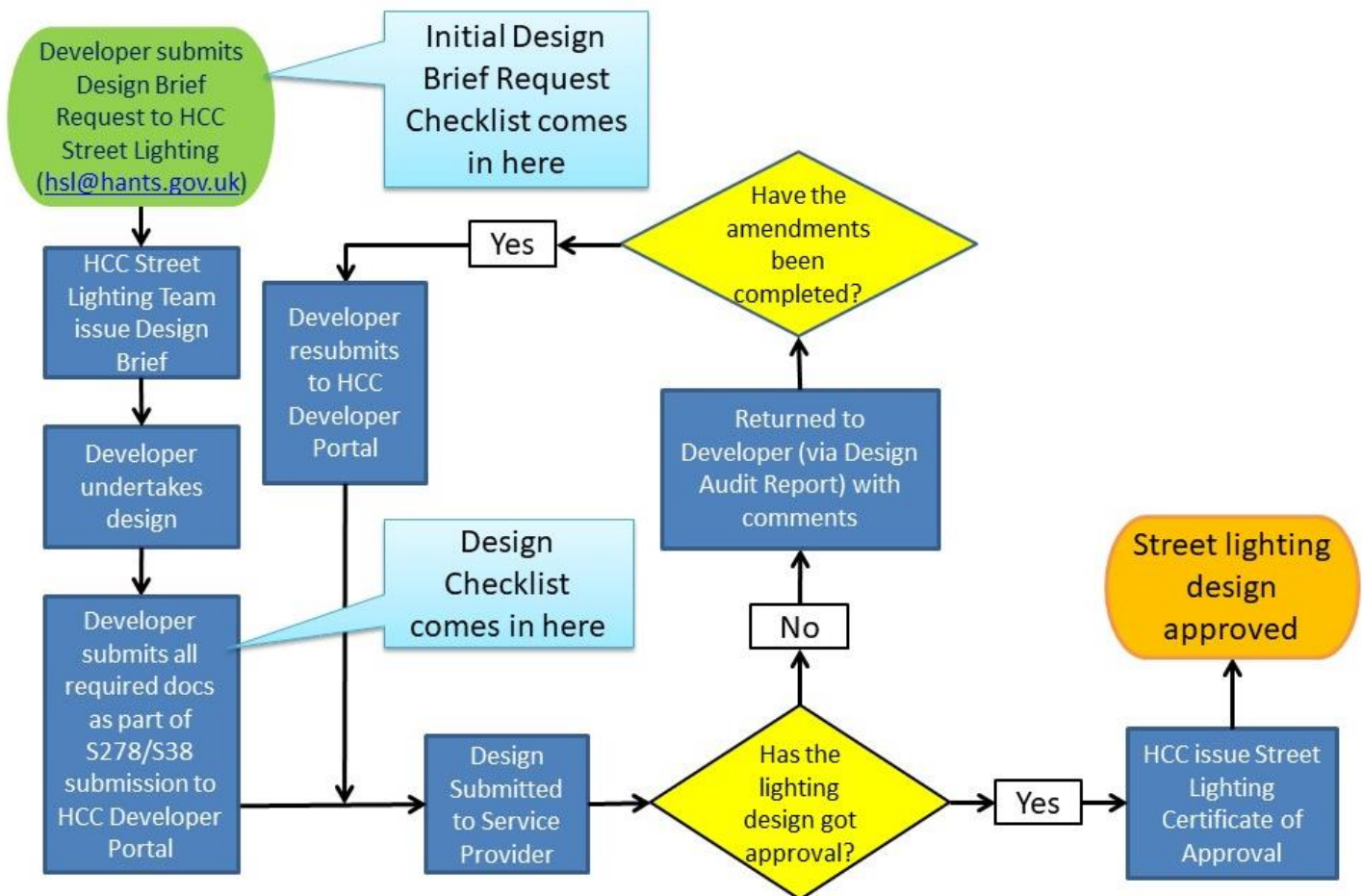
### **3.32. Private Cable, Ducting, Feeder Pillars**

- 3.32.1. See HCC Standard Details [HCC11/L045, 050, 055, 070](#).
- 3.32.2. Pillars, ducts and cables are to be used exclusively for street lighting and illuminated signs.
- 3.32.3. Private cables to be laid in 100mm diameter orange PVC ducts (DNO cables only in black duct).
- 3.32.4. Ducting systems to include necessary chambers/draw pits.
- 3.32.5. Cable ducts below footways to be >450mm below finished level; ducts below carriageways to be >600mm below finished level. See NJUG "Guidelines on the Positioning and Colour Coding of Underground Utilities Apparatus".
- 3.32.6. 150mm-wide yellow heavy gauge PVC tape marked "street lighting" to be placed over private cables/ducts.
- 3.32.7. Cable ducts to be installed with draw cords.
- 3.32.8. Private cables to be XLPE\SWA\PVC.
- 3.32.9. All cut outs must have HRC fuse in pull-out carrier and provision for Live, Neutral & Earth cable connections including a PME link.
- 3.32.10. All outgoing circuits are to be labelled by an encapsulated schematic drawing detailing the outgoing cable route & the population of lighting units on each circuit.
- 3.32.11. Feeder pillars to be installed with a minimum of 1.0m<sup>2</sup> hard-standing provided at ground-level in front of the pillar door, with unit ID number reference displayed (see HCC11/L/075).
- 3.32.12. Feeder pillars not to include heaters or internal lights.
- 3.32.13. For electrical testing see Section 3.24.

## 4. Process – Design, Construction, Inspection & Accrual

The following flowcharts and checklists detail the steps required from initial enquiry to accrual. Providing the required information at each stage as detailed in the checklists will enable the accrual process to progress smoothly.

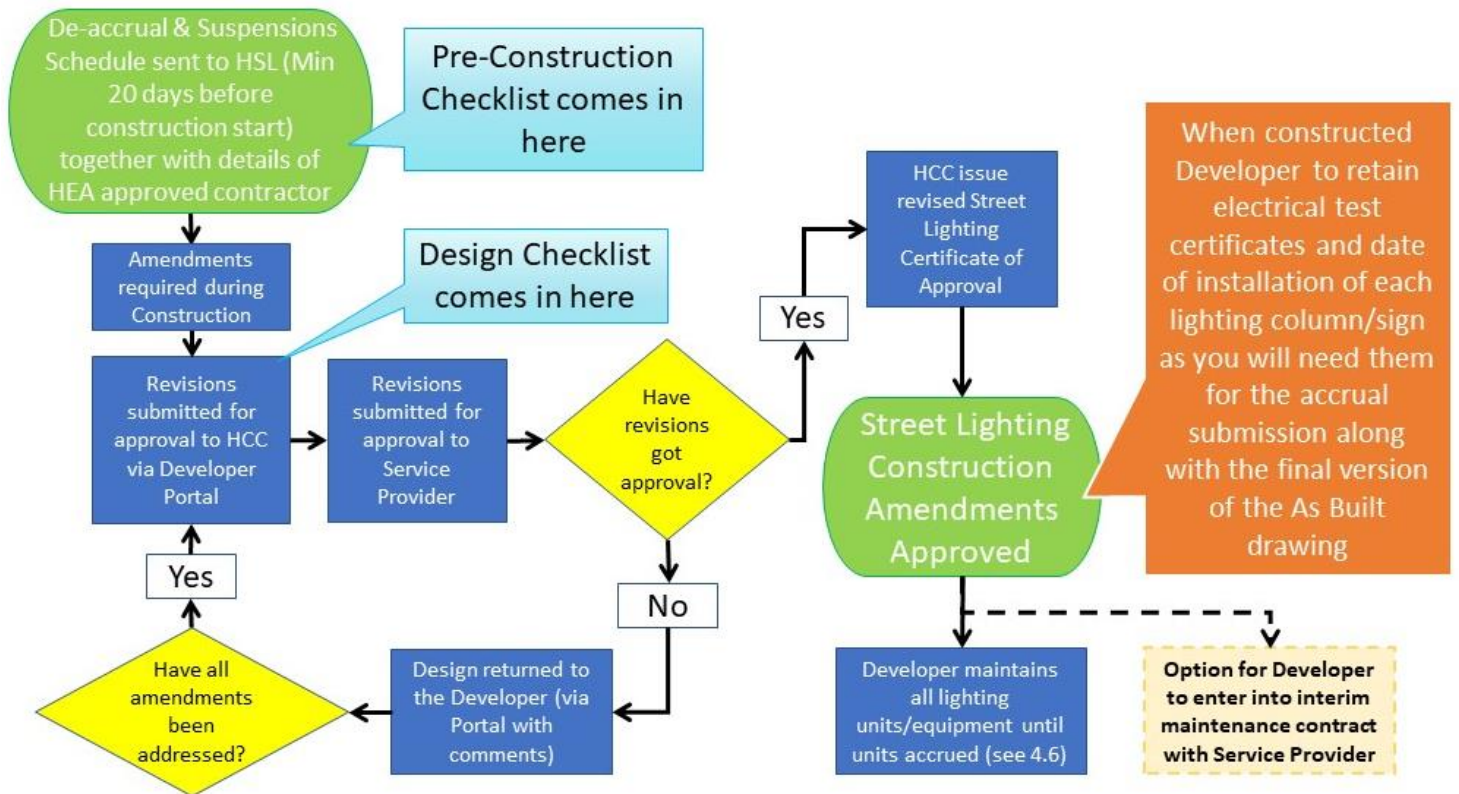
### Design Process Flowchart



Required documents submitted by Developer for Initial Design Brief Request	✓
Site location plan	
Draft layout drawings showing the highway adoptable areas, detail of adjoining schemes, site phasing plan	
Other relevant information – e.g.: ecology reports, design codes, planning conditions, predicted daily traffic flow, Details/Description of the development type of premises, number of residential, industrial, community facilities, car parking, bus route, cycleways, footways, drainage ditches, slopes.	
Proposed speed limit of road, design speed, characteristic speed of traffic and traffic accident data  Proposed existing sign details, proximity to hazards (e.g. navigable waterways, airports, railways to be noted), other roads or buildings that could be impacted on by lighting installation  Any road restraint details, BS5489/CIE 115 Lighting Class Risk Assessment	
Presence of traffic calming features and confirmation of road surface materials (including reflectance characteristics)	

Required documents submitted by Developer for Detailed Design	✓
Document Drawing Register	
Location plan – (to show phases of development)	
Lighting layout drawing & specification (see 3.12)	
Isolux plot/drawing (see 3.12.4.r)	
Designers narrative (see 3.13)	
Hazard Elimination & Management List (see 3.6)	
Lighting design calculations with designer commentary – including full RTMA & RTMR files (see 3.16)	
Site clearance drawing (if any lighting apparatus are affected by the works (including ID numbers) - may be in layout drawing)	
Confirmation of LV supply network owner - host DNO / IDNO (see 3.23)	
Private cable calculations (if applicable – see 3.23, 3.32)	
Illuminated sign details (if applicable. To include a schedule of sign faces & dimensions, specification of sign light – see 3.28)	
Special (“heavy-duty”) column requirements (if applicable – see 3.27)	
Relevant contract documents, schedules & appendices	
<a href="#">Initial inventory information</a> (See the Street Lighting section of the <a href="#">Technical Guidance web page</a> )	
Written confirmation that the design submission complies with the <i>Accrual Required Standards</i> (see 5.2)	

## Construction Process Flowchart



Required documents submitted by Developer Prior to Construction	✓
De-accrual & Suspension schedule (min 20 business days before start of construction – see 4.1)	
Confirmation of the identity of the HEA-approved subcontractor(s) engaged by the Developer to carry out street lighting / illuminated sign installation works (see 4.2)	

### 4.1. Existing Apparatus Within the Works – De-accrual & Suspension

- 4.1.1. Any existing apparatus due to be removed or altered will need to be de-accrued from the PFI contract.
- 4.1.2. Any existing apparatus that is temporarily made inaccessible for maintenance (e.g. barriered-off) will need to be suspended from the PFI contract.
- 4.1.3. The Developer is responsible for maintenance of all de-accrued and suspended apparatus within their works until it is formally inspected and

**The Developer shall inform HCC's Street Lighting Section ([hs1@hants.gov.uk](mailto:hs1@hants.gov.uk)) of equipment to be de-accrued or suspended no less than 20 business days before the works start.**

re-accrued. Maintenance should be in accordance with industry good practice (see Section 4.6 below) with full records to be kept of any works.

#### **4.2. HEA Contractors**

- 4.2.1. The Developer is to identify to HCC which accredited (HEA, NICEIC) contractor has been appointed for the street lighting and illuminated sign installation and maintenance works.
- 4.2.2. HCC's Street Lighting PFI contractor (Enerveo, formally SSE Enterprise Lighting Services) can provide a lighting installation service if required. Please email [HampshireDesignChecks@enerveo.com](mailto:HampshireDesignChecks@enerveo.com).

#### **4.3. Temporary Signing**

- 4.3.1. Temporary signs may be fitted to existing lamp columns if the columns have the structural capacity – contact [tpa@enerveo.com](mailto:tpa@enerveo.com) for permission (for fixing specification see Section 3.27.n)

#### **4.4. Labelling of Apparatus**

- 4.4.1. All apparatus should be numbered as agreed with HCC's Street Lighting Section - sequentially by named road. If works affect existing roads, then sequential re-numbering of existing apparatus may be required. See Standard Detail [HCC11/L/075](#).
- 4.4.2. Where appropriate (e.g. within the "vicinity zone" of overhead power cables) an "overhead warning" label should be applied to column shaft. See Standard Detail [HCC11/L/080](#).
- 4.4.3. Where a lighting column or illuminated sign holds the isolation point for an outgoing private sub-circuit then the column will be clearly marked externally to identify this, and internally to identify the apparatus supplied via the private sub-circuit.

#### **4.5. Cable Schematics**

- 4.5.1. Isolation points for any private networks (e.g. – where fed from feeder pillars, or columns & signs with additional outgoing sub-circuits) shall have enclosed in the base compartment an encapsulated schematic drawing detailing the outgoing cable route & the lighting units on each circuit.

#### **4.6. Maintenance before Accrual**

- 4.6.1. The Developer's duty of care includes maintenance of lights within the works in accordance with good industry practice and shall include:
  - a) Periodic maintenance (cleaning, visual inspection, electrical test).

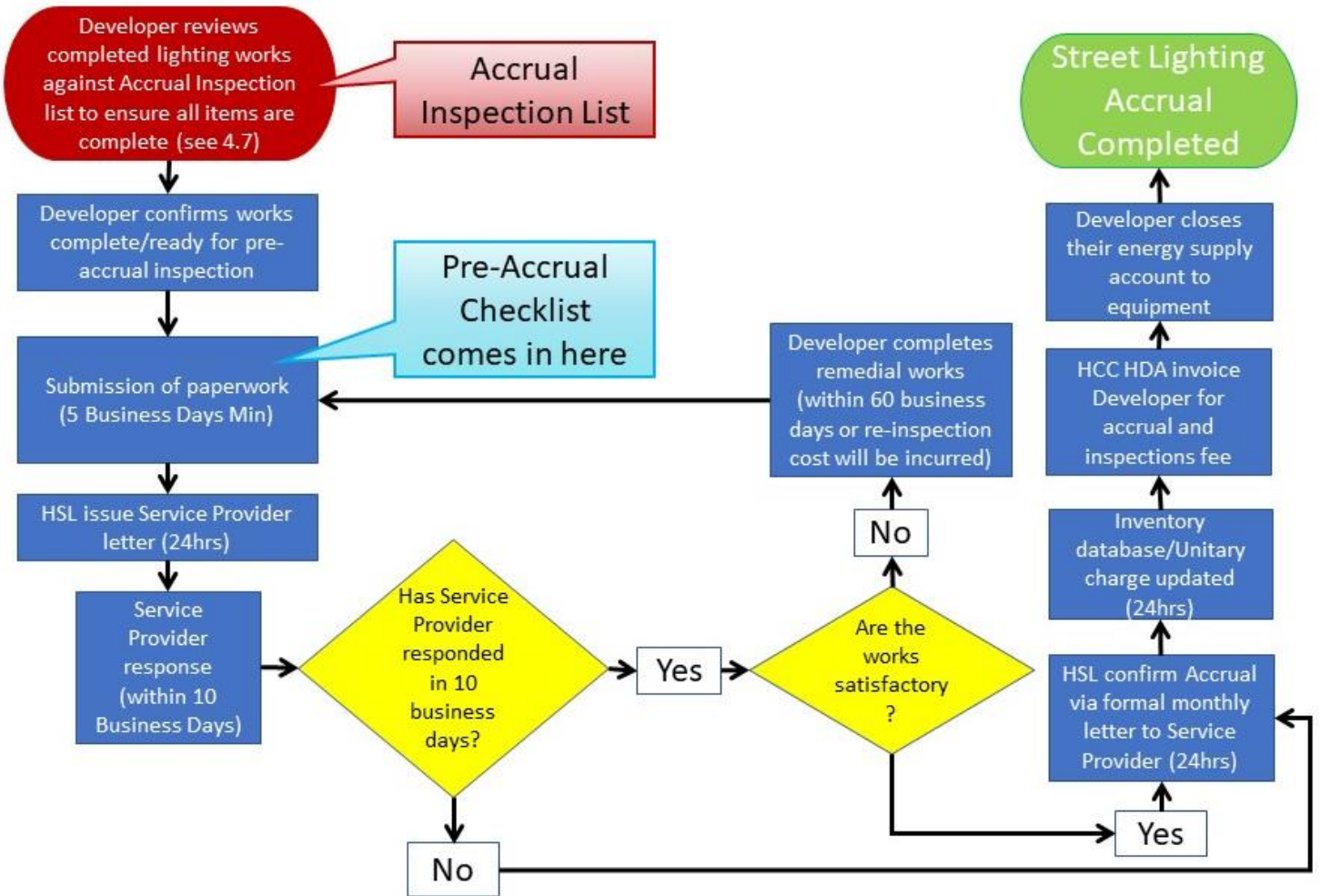
- b) Reactive repairs - prompt identification and repair of operational faults, emergency repairs as necessary, and maintaining records of these activities.
- c) Lamp change - lamps are to be replaced within 6 months of the proposed accrual date (not LEDs).



**The Developer is responsible for ensuring all temporary, suspended, de-accrued and new un-adopted lighting units are maintained in accordance with good industry practice until such time as the units are accrued.**

- 4.6.2. The Developer may choose to enter an interim maintenance contract with the Service Provider, who will then ensure the units are maintained to a satisfactory condition to enable easy accrual onto the PFI Contract at the point of completion of the S278/S38 works ( i.e. at Certificate of Completion / Part 2 Certificate) – contact [hsl@hants.gov.uk](mailto:hsl@hants.gov.uk).

## Accrual Process Flowchart



<b>Pre-Accrual inspection – Documents to be provided with request:</b>	✓
“As-built” version of the lighting layout drawing (including installation dates for each item - see 3.12)	
Hazard Elimination & Management List (see 3.6)	
Illuminated sign details (if applicable – see 3.28)	
Electrical test results (see 3.24)	
Column data sheets/batch numbers (including manufacturer, protective system, detail of any Authority attachments. See 3.27)	
Evidence / records of maintenance (including date of last lamp change (not LEDs. See 4.6)	
Mayflower node schedule (to be detailed on a schedule of illuminated apparatus, listed by road & maintenance ID no. See 3.26)	
Details of the energy supplier and private cable network owner	
Pre-Accrual inventory information – See the Street Lighting section of the <a href="#">Technical Guidance web page</a>	
Written confirmation that the installation complies with the <i>Accrual Required Standards</i> (see 5.2.2)	

#### 4.7. Pre-Accrual Inspection

- 4.7.1. HCC will arrange a thorough initial inspection of apparatus to be offered for accrual. Repeat inspections will be charged separately. Requests for inspection should be accompanied by the documents detailed in the Pre-Accrual Inspection Checklist.
- 4.7.2. Table 5 summarises the inspection criteria. This is provided as an audit list for the person undertaking the final inspection of site before it is put forward for a Pre-Accrual inspection. This is an example of some of the requirements under the inspection and is not exclusive nor gives the guarantee of the site passing first time.



**Table 5: Pre-Accrual Inspection Checklist**

Item	Description of Inspection	Tolerances
1	Planting depth	Remove door and measure from the bottom of aperture to finished ground level  <b>+/- 100mm</b>
2	Reinstatement	Check quality final reinstatement  Visual
4	Column alignment	Is the pole upright and plumb?  Spirit level bubble touching line
5	Bracket alignment	Is the bracket Installed as designed?  Visual
6	Bracket outreach	Is the bracket outreach as designed?  None
7	Column protective system	Is colour / finish correct and undamaged?  Minor scratches not through to galvanising
8	Numbering	Is unit numbered correctly and in correct place with Logo?  Height +/- 25mm
9	Location of unit	Check for compliance with design  +/- 2m longitudinal  +/-2m across
10	Lighting column door	Check for correct orientation  None
11	Locking device	Check that the lock operates correctly, the door fits securely, and the door lock is greased.  None
12	Column root	Check that correct root protection is evident  None
13	Lighting column height	Check that the height complies with the Output Specification  None
14	Lighting columns	Check that where vehicular access is restricted or where maintenance cannot be carried out by a purpose-built vehicle a raising and lowering column has been used.  None
15	Position of unit	Check that the units have been Installed in Authority owned land or that wayleaves/easements have been obtained.  None
17	Statutory (Authority) attachments	Check that statutory signs are where they need to be.  None

Item		Description of Inspection	Tolerances
18	Sign light attached to lighting column	Check that hole in column has been adequately sealed to prevent ingress of water.	None
19	Sign light wiring	Check correct cables, sleeving, wiring is neat, insulation at terminals and terminals are tight.	None
20	Lighting column type	Suitability for any proposed banners, hanging baskets, festive illuminations etc.	None
24	Redundant apparatus removed (including electrical cables)	Check redundant units have been removed and that permanent reinstatement has been carried out.	None
25	Illuminated Traffic Signs	Check the sign face type, post location, orientation and door position.	None
26	Illuminated Traffic Bollards	Check the shell type, base to the correct depth and base opens in the correct direction.	None
27	Electrical test certificate	Check that a test certificate is provided and complete	None
29	Luminaire alignment	Is luminaire straight or twisted?	Visual
30	Luminaire bowl clean	Is the Luminaire bowl clean and free from blemishes?	Visual
31	Luminaire optic setting	Is the optic setting as per design?	None
32	Correct lamp, Luminaire and Control Gear	Check that the correct lamp, gear and Luminaire are as per the design.	None
33	Switching device	Is the correct switching device fitted and set?	None
34	Internal wiring	Check the correct cable has been used, wiring is neat, insulation at terminals is maintained and that all terminations and earth bonds are tight. Check that all electrical apparatus is securely attached to the backboard. Check that the backboard is securely fixed. Check incoming cables have "drip loop" to prevent water ingress into cut out.	<b>None</b>
35	Double pole isolation	Where relevant check if double pole isolation has been Installed.	None

Item	Description of Inspection	Tolerances
36	Protection device Check that the protection device is correctly Installed and rated.	None
37	Private supply cables Check that private supply cables are correctly sized, glanded and identified as to what they feed.	None
38	Feeder Pillars / locations Check for condensation, distribution board, rating of protection devices, wiring is neat, all terminations, glanding, insulation, cables sizes, cables are identified, earthing and schematic cable diagram.	None
43	Lighting design – trees & vegetation Check that the effect of trees and vegetation has been adequately accommodated in the design and positioning of columns.	None
47	General – Lamp operation Check that the lamp strikes.	<b>Snagging if overall % of failures is &lt;4%</b> <b>Fail if overall % of failures is &gt;4%</b>
48	General - Condition Check for any signs of damage to any item of Apparatus.	None
52	General - Reporting Issue Certificates of Compliance and Non-compliance and identify Snagging Items in accordance with the output specification.	None

## 5. Providing Relevant Documentation

Schemes which are submitted with the relevant information are more likely to go through the process quicker due to a reduction of waiting time trying to locate the documents.

Submissions that have followed TG13 guidance are more likely to have all the information needed by both HCC and Enerveo and the likelihood of any defects are reduced at the beginning of the process.

### 5.1. Energy

- 5.1.1. Following Accrual/Adoption it is for the Developer to inform their energy supplier that the development is now within the scope of the HCC energy contract.

### 5.2. Confirmation of Accrual Required Standards

- 5.2.1. Below is an example of a suitable form of words for inclusion within a letter of confirmation from the Developer that the **design** submission complies with the PFI *Accrual Required Standards*.

*We write in relation to illuminated apparatus proposed for the above project. This letter confirms that the apparatus meets the requirements of the Street Lighting PFI in that:*

- a) All apparatus has been designed in accordance with the Hampshire County Council standard development specification current when the agreement was signed.*
- b) All apparatus shall be new at the time of installation and supported by relevant manufacturer's guarantees. Such guarantees will be transferred to Tay Valley Lighting (Hampshire) Limited at the point of Accrual. All apparatus has been sited so as to minimise, in so far as is reasonable and practical, nuisance, danger and obstruction to all residents, businesses and users of the highway.*
- c) All columns and signposts shall be manufactured in accordance with BS EN 40 and have residual capacity for additional sign attachments of 0.3m<sup>2</sup> in area.*
- d) All illuminated apparatus shall be installed and tested in compliance with BS7671 with certificates which are no more than 12 months old at the time of the Pre-Accrual inspection request.*
- e) Lamps shall be no more than 6 months old at the time of Accrual (where not LEDs).*
- f) All installations shall be installed in such a way that trees or any other foliage on the site does not interfere with the level of lighting.*

*These statements are based on the information contained within the specific documents listed below and this information only. Any other drawings and documentation will not be considered as approved and will only be considered as supporting information.*

Author	Document ref	Document title	Revision

- 5.2.2. Below is an example of a suitable form of words for inclusion within a letter of confirmation from the Developer that the **installation** complies with the PFI *Accrual Required Standards* (required when the PFI contractor has not been used as contractor for the street lighting or illuminated sign works):

*We write in relation to illuminated apparatus installed in the above project. This letter confirms that the apparatus meets the requirements of the Street Lighting PFI in that:*

- a) All apparatus has been installed in accordance with the documents listed below (including all notes & comments).*
- b) All apparatus has been installed in accordance with the Hampshire County Council standard development specification current when the agreement was signed.*
- c) All apparatus was new at the time of installation and supported by relevant manufacturer's guarantees. Such guarantees will be transferred to Tay Valley Lighting (Hampshire) Limited at the point of Accrual. All apparatus has been sited so as to minimise, in so far as is reasonable and practical, nuisance, danger and obstruction to all residents, businesses and users of the highway.*
- d) All columns and signposts installed have been manufactured in accordance with BS EN 40 and have residual capacity for additional sign attachments of 0.3m<sup>2</sup> in area.*
- e) All illuminated apparatus has been installed and tested in compliance with BS7671 with certificates which are no more than 12 months old at the time of the Pre-Accrual inspection request.*
- f) Lamps are no more than 6 months old at the time of Accrual (where not LEDs).*
- g) All installations have been installed in such a way that trees or any other foliage on the site does not interfere with the level of lighting.*

*These statements are based on the information contained within the specific documents listed below and this information only. Any other drawings and documentation will not be considered as approved and will only be considered as supporting information.*

Author	Document ref	Document title	Revision

## 6. Further Support

- 6.1. Should you have a specific query or feedback about any of the content of this Technical Guidance Note, please send an email to [technical.guidance@hants.gov.uk](mailto:technical.guidance@hants.gov.uk) with the start of the email title as “TG13 – [email subject]” .
- 6.2. Should you have a query about applying this to your project, please contact:
- the Design Audit Engineer dealing with your S278 or S38 application (if you are a Developer or Developer’s Consultant)
  - the Technical Guidance Note Specialist(s) (if you are a working within Hampshire County Council)
- 6.3. Associated Technical Guidance Notes:
- TG4-1 – Traffic Signal Junctions
  - TG4-2 – Signal Controlled Crossing
  - TG4-3 CCTV, VMS and Journey Time Monitoring
  - TG9 - Public Transport Infrastructure
  - TG11 – Traffic Calming
  - TG12 – Signs and Bollards
  - TG14 – Collision Risk Assessment, VRS and Passive Street Furniture
  - TG15 – Trees, Landscape and ecology
  - TG19 – Walking, Cycling and Horse Riding Assessment and Review (WCHAR)

## Appendix A – Luminaire Model Table

Luminaire model	Flux	“lamp”	CCT (5)
Philips Micro Luma – BGP 615	1.4 – 2.4 klm	12 LED	Neutral white (4000k) [see note 5]
	2.6 – 5.0 klm	20 LED	
Philips Mini Luma – BGP 621	5.2 – 7.2 klm	40 LED	
Philips Luma 1 – BGP 623	7.4 – 7.6 klm	60 LED	
	7.8 - 9.0 klm	68 LED	
	9.2 – 18 klm	80 LED	
Philips Luma 2 – BGP 625	19 klm +	120 LED	
Philips Luma 3 – BGP 627	23 klm +	200 LED	
Schreder Axia 3.1	1.1- 5.7 klm	up to 16 LEDs	
Schreder Axia 3.2	2.2 – 10.5 klm	24-32 LED	
Schreder Axia 3.3	4.5-22.1 klm	48-64 LED	
Zebra asymmetric floods (Luma DPL1, DPLR1 optics) (6)	Output determined by light levels achieved by the road lighting		Cooler than adjacent road lighting
Subway – Simmonsigns Safeway EcoSafelight (4) varies		104 LED	Cool white (5700k)
Underpass - CREE Ledway Multi varies		20-120 LED	Cool white (5700k)
Philips Luma – to be “D” series optics configured with “Current” generation LEDs – the superseded “R” optics are not to be used.			