Milton Keynes Code of Practice, Festive Decorations on Highway/Landscape Land

milton keynes council

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1 Introduction

1.1 This Code of Practice (CoP), is intended to provide essential guidance to any person/s engaged in or associated with the installation, operation and maintenance of illuminated festive decorations on or above the public highway or MKC owned landscape land.

1.2 The CoP does not constitute a comprehensive specification and as such does not cover all associated operations and activities. It serves to identify only those operations and activities, that may, directly or indirectly affect electrical safety it is a supplement to existing Codes of Practice, Safe Working Methods and Statutory/Regulatory requirements.

1.3 It is assumed that the CoP and those recommendations contained herein, will be used as a basic template for the application of good, sound engineering judgement and practice.

1.4 This CoP provides advice in a consistent, positive and practicable manner. It attempts to ensure that the health and safety of all persons engaged in the associated works and members of the public, is protected as far as is practicable.

1.5 The CoP is primarily concerned with the electrical safety aspects of associated works, however, related matters of a mechanical nature are referred to.

2 Preparation

2.1 In recognition of varying approaches to the requirements of individual organisations and constantly changing legislation and engineering practices, the CoP has been reviewed and amended by the Milton Keynes Council Street Lighting Engineer. Reference is made to the following documents however this is not an exhaustive list

- ILP PLG06 and GN22 Guidance notes and Technical Reports.
- BS 7671:2018 – 18th Edition, IEE Wiring Regulations
- Electricity at Work Regulations 1989
- Health and Safety at Work Act 1974
- Highways Electrical Association (HERS registration scheme)
- BS EN 40-3-2:2013

3 Structural Requirements

3.1 Decorations and/or their supports will not project within 0.5m of the kerb edge and at no less a height than 5.7m above the carriageway. Where roads within the MKC area have been designated ‘Wide Load Route’, a minimum clearance of 7.5m above the carriageway surface must be maintained at all times.

3.2 Decorations and/or their supports erected over footway/s and any other pedestrian areas, must have a minimum clearance of 2.5m from the footway surface which must be maintained at all times.

3.3 No permanent fixtures are to be fitted in or attached to any Highway or Landscape Assets without the prior written consent of the Highway Authority.

3.4 The drilling of access holes in existing lamp/lighting columns will not be permitted except as in 3.5. All such existing access holes must be suitably sealed and weatherproofed against corrosion.

3.5 For egress of cables from lighting columns, it is generally acceptable to drill a 20mm dia. hole in a column shaft for the exit/entry of cables providing it is located away from the points of maximum stress i.e. at connection points for the brackets, and transition from shaft to base. Where facilities for the egress of cables from a lighting column or similar are made, they should be threaded, and a nylon or similar stuffing gland used to seal the column from water ingress. Ideally, the drilling of columns for the egress of cables should be completed during manufacture. However, if drilling is carried out post fabrication then a finishing operation to protect the exposed edges of the hole should be carried out using a cold galvanising product and, if other protective systems are used, then a suitable reinstatement of the original paint system.

3.6 Where access to an electricity supply within a steel galvanised column is required, the access hole must be drilled into the rear of the bracket arm. The hole will be tapped to16/20mm and a suitable brass bush fitted. A prefabricated fixing bracket and Lewden flanged socket, to minimum IP66 rating, may then be fitted. The brass bush and retaining screws threads shall be coated in 'Belzona' or similar compound for security of fixtures and to protect and maintain the integrity of the column against corrosion and water ingress. All associated materials shall be supplied and installed by the Highway Authority's Approved Street Lighting Contractor. Connections shall only be made to the sockets using matched Lewden plugs, minimum IP66 rating

3.7 The integrity of the weatherproofing of the column and bracket arm must be fully maintained at all times

3.8 No attachments other than as detailed in 3.5, shall be fitted to any bracket arm on any column

3.9 No decoration/s shall interfere with or obstruct access to the column or lantern in the course of general/cyclic maintenance activities

3.10 No decoration/s shall be fitted to lighting columns that already support traffic signs, other than restriction plates/repeater plates and a structural test has been undertaken in accordance with EN40.

4 Catenary Installations

4.1 **Catenary installation between columns will not be permitted within Milton Keynes unless the columns have been specifically designed for the purpose**

4.2 Any cable spans greater than 3m are to be supported by means of a high-tensile galvanised/stainless steel, multi strand, catenary wire, of minimum diameter 6mm. The cable may be either continuously interwoven with the catenary wire, or secured to the catenary wire, by means of suitable clips/cable ties at no greater than 250mm centres

throughout its' length. Catenary wire may also be integral to the cable as part of the production process.

4.3 The catenary wire must be securely attached to tested and approved anchor points. No span shall exceed a maximum of 15m.

4.4 Certification of annual test for the anchor points either on buildings or columns must be supplied with the application. Failure to do so will make the application null and void or lead to the application being refused.

4.5 Catenary structures are generally steel columns manufactured from tubular, conical or multi-faceted sections that have been designed specifically for the purpose. They support the catenary wires, electrical supply cables and either festoon lighting, fairy lights, decorations or banners etc.

4.6 The forces on the steel column or other structure, resulting from a catenary system which is designed to take this type of loading, is obtained by completing sag and tension calculations.

4.7 There is a relationship between the sag of the wire, the loading applied, and the tension within the wire. It is also possible, if the system is installed in one season and retained for subsequent seasons, to calculate the effect due to changes in temperature.

4.8 If the tension is too great at the time of erection and the wire contracts due to a reduction in temperature or the applied load increases due to wind, the resultant forces in the catenary system may exceed the safe working load of the wire, the capacity of the connection or the structure supporting the arrangement.

4.9 In some instances, the actual catenary wires may be installed prior to the erection of the festoon lighting, decoration, banner or other such load. In this case it is essential that the appropriate sag and tension are calculated to ensure that neither of the controlling conditions is exceeded when the load is subsequently applied.

4.10 In general, the following should be taken into consideration and discussed with the engineer prior to installation:

- The time of year that the system is installed and for how long it is to be used under full load.
- The time of day the work is likely to be carried out.
- Whether the cables are to be erected prior to the installation of the lighting, decoration or banner etc.
- If necessary, additional calculations should be carried out to determine the installation criteria.

5 Catenary Wire Selection

5.1 It is recommended that the catenary system should use Marine Grade flexible stranded stainless steel wire ropes to BS EN 12385-4:2002+A1:2008 with a minimum diameter of 6mm for simple festoon lighting fairy lights or bunting and a minimum of 8mm for cross street systems supporting decorations, banners or similar.

5.2 The termination of the wire rope shall be by stainless steel compression crimp type joints, or by grips in conjunction with stainless steel thimbles or eyes. The introduction of a stainless steel turnbuckle, rigging screw or similar can be used to fine tune the tension and sag after installation. As a rule of thumb the thread diameter of the associated equipment should be two times that of the catenary wire being used i.e. M16 for 8mm wire. The safe working load for all the equipment should be comparable and shall have a minimum factor of safety of five against the minimum breaking load of the component or wire and be greater than the calculated maximum tension in the system.

6 Inspection

6.1 The catenary system should be inspected at least once each year and also prior to mounting the equipment onto the wires that are left in position permanently, or, before the wires and equipment are re-installed. The inspection should include the following but not be limited to:

- Inspect the wire rope anchorage point on the wall or structure for signs of wear or corrosion.
- Inspect the wire rope terminations.
- Inspect the wire rope for frays, kinks, corrosion damage or deterioration.
- Inspect the wire rope attachments to the turnbuckle, rigging screw or similar for wear, deterioration, corrosion and security.
- Tighten all connections as necessary, for example the wire rope grips.
- Check the electrical cable.
- Check the connections of the supported equipment to the catenary wire
- Visually inspect the support structure in line with the requirements of GN22 - competency and training

6.2 Under no circumstances are spans in excess of 3.0m to be attached to street lighting columns/wall-brackets, unless those columns/wall- brackets are specifically designed for this purpose.

6.3 Spans may be attached securely to adjacent buildings (fixings MUST be tested annually).

6.4 All anchor, points, bolts, hooks, brackets, clips, cable tensioners must be made of non-corrosive material such as galvanised/stainless steel and must be designed for the purpose and to BS5649 -pt1 classification. All brackets/clips shall be fitted with a neoprene rubber insert of minimum 5mm thickness, between the column and the fixing.

6.5 The Operator shall ensure that the design, and construction of any street lighting column/s and/or anchor points, complies fully with the requirements of BD26/99 when under fully laden conditions. There must be no undue stress/tension applied to street

lighting columns that may lead to bending or bowing. Street lighting columns must retain vertical alignment at all times.

6.6 Under no circumstances shall decoration/s be permitted to be attached to glass reinforced plastic, concrete or aluminium street lighting columns or to illuminated traffic signposts.

6.7 Any anchor points fixed to buildings will require a wayleave agreement to be in place before approval will be given.

Note: The street lighting engineer reserves the right to refuse permission to fit any decoration/s to any street lighting column considered unfit/unsuitable for that purpose

7 Electrical Requirements

7.1 Whilst recognising the pleasure a well-designed lighting display gives to the public, organisers and installers of festive lighting must keep in mind that such installations, when powered by mains electricity, are, because of their temporary nature, potentially hazardous. It must be remembered that outdoor lighting is subject to adverse weather conditions, especially in winter, and a hastily erected display could easily bring tragedy instead of joy. As festive installations are meant to be temporary, an annual test will need to be carried out. Equipment used for temporary installations must be of the same standards as a permanent installation although it is appreciated that for installations of this nature, cables may be installed temporarily. Cable supports must be arranged so that no appreciable mechanical strain is placed on any cable termination or joint.

7.2 All work must be carried out to the requirements of BS 7671: 2011 IEE Wiring Regulations.18th Edition and it should be noted that the Electricity at Work Regulations 4, 5, 6, 7, 8, 9, 10, 11, 12 and 15 are particularly relevant to such installations. Due reference should also be given to the requirements within the ILP document ‘GP03: Code of Practice for Electrical Safety in Highway Electrical Operations’.

7.3 It is a legal requirement that everyone undertaking electrical work is a competent person, as described in the Health and Safety section of this document, and does not cause danger to themselves or others. If you knowingly employ staff to undertake work that is beyond their level of knowledge and competence then you could be liable for any danger or damage that occurs. Where the operator does not have persons approved to the correct level of competency, connections to Highway Authority apparatus must only be undertaken by the Highway Authority, its approved contractor or agent. The cost of this work will be charged to the operator.

7.4 The Highway Authority and Distribution Network Operator (DNO) must be fully consulted regarding the location, type and suitability of the cubicle / feeder pillar before any work is started to install or construct the cubicle/feeder pillar; and under no circumstances should the works be undertaken without the prior written approval of the Highway Authority. The details of the supply cubicle/feeder pillar owner and contact details should be displayed on permanent exterior labels.

7.5 To prevent accidental contact with all live parts within columns/supply pillars an intermediate barrier to minimum IPXX (BS5490) must be fitted and shall only be removable by the use of a tool.

7.6 All festoon lamp-holders shall be moulded into the outer sheathing of the cable, as part of the manufacturing process and shall be suitable for the use of Edison Screw Lamps. No 'pin prick' lamps are to be used unless fitted to the cable during the manufacturing process.

7.7 The Operator/Installer shall ensure, at all times that any replacement lamps are of the recommended type and wattage for the installation.

7.8 All/any associated electrical cable/s, above ground level, shall be fully enclosed within a heavy-duty galvanised conduit of minimum 25mm diameter to a minimum height of 3.0m above ground level, securely attached to an adjoining building by means of galvanised saddle clamps.

7.9 All electrical equipment mounted on or above the public highway shall incorporate circuit protection via an RCD of maximum 30 milliamps rating.

7.10 Due to possible or due to the possibility of dangerous situations occurring, large ground-mounted Christmas trees and Tableau, shall only be supplied via 24/25V PELV/SELV systems.

7.11 Where an electrical supply is to be taken from an existing service within a street lighting column, a separate sub-circuit shall be provided by means of a fused two-way DPI unit. There must be sufficient discrimination to ensure that, under fault conditions, the street lighting circuit is not affected. Under no circumstances will the existing control equipment within the street lighting column be dismounted, disconnected or otherwise removed

7.12 Under no circumstance shall the PECU/Clock Timer be used as a control for festive decoration/s. A suitable timing device shall be incorporated to provide for the burning hours duration of the festive decorations

7.13 Where there is insufficient room within the street lighting column base compartment to house the control gear for the festive decoration/s, it will be necessary to convert the existing lantern to a modern unit, in order to create the required space. Costs for such works will be borne by the applicant wishing to install festive decorations on the column. Under no circumstances shall control gear be fitted to or within the lantern or its' canopy

7.14 Under no circumstances shall any associated equipment be installed within a street lighting column without that equipment being fully secured.

7.15 Under no circumstances shall any associated equipment be attached to/installed within illuminated traffic signs

7.16 All festive lighting supplies will be treated as permanent, temporary supplies will not be permitted. It is preferred festive lighting supplies are not taken from street lighting columns and that where such supplies are required they are derived, from a purpose built service pillar/wall box with its own DNO service. Supply pillars should where possible be installed off the public highway to minimise clutter, the preferred option being a wall box which is also less prone to accidental damage/vandalism.

7.17 Any associated control equipment shall be installed within the supply pillar/wall box

7.18 Power supplies in most situations for highway electrical equipment, is supplied unmetered, direct from the DNO cables in the Highway. Within the highway electrical equipment is a fuse known as a cut-out. This is the interface where the supply responsibility changes from the DNO to the Highway Authority and is the point of electrical isolation.

7.19 Only an authorised competent person will be allowed to remove inspection covers, doors or panels affording access to their apparatus to make connections from Highway Authority and DNO equipment.

7.20 Where supplies are privately generated or where the supply authority does not provide an earth terminal, earth electrodes are to be installed according to BS 7430:2011+A1:2015 to ensure a disconnection time not greater than 0.2 seconds for TN supplies and 0.07 seconds for TT supplies. Earth bonding should also be provided in all areas where electrical supplies are introduced e.g. stages, marquees, stalls and scaffolding. Protective earthing of the equipment must be maintained at all times. The Highway Authority and Local Electricity Company shall always be consulted

7.21 Only competent and authorised persons shall be employed to carry out any/all associated installation works.

7.22 Person/s employed on installation works shall provide copies of all relevant certification, qualification and sector scheme card as evidence of suitability

Note: The street lighting engineer retains the right to refuse permission for any person/s not deemed competent to carry out any associated electrical works on the public highway

8 Trees

8.1 Any equipment/lighting should only be attached on a temporary basis and should not involve any damage to the main stem or any other part of the tree. Nothing should be screwed or nailed to the tree. Banding round the tree is acceptable but this will have to be removed after the event /festival.

9 Maintenance arrangements

9.1 The owners of the decorations must, at their own expense, maintain the decorations and infrastructure in good repair throughout the period of operation, including its installation and removal. The promoter MUST make arrangements for a weekly visual inspection of the decorations and to keep a log of such inspections. This requirement is in addition to other structural or electrical inspections.

9.2 An electrical test must be undertaken annually to ensure all electrical safety equipment is functioning as per manufacturers' instructions

9.3 Any damage caused to Highway Authority equipment, including damage to the protective coatings, by the promoter or his agents or contractors, will be repaired by the Highway Authority. The promoter will be rendered an invoice and be responsible for payment of the repair costs.

9.4 The promoter must ensure that adequate competent persons are available at all times for emergency attendance within two hours of being so requested.

9.5 The Highway Authority reserves the right to disconnect and remove any or all equipment that, in the opinion of the Highway Authority, is unsafe or dangerous. The cost of this work will be recharged to the promoter. The Highway Authority will not accept any responsibility for vandalism or accident damage. Where equipment is removed by the Highway Authority following accident damage or vandalism, the Highway Authority will endeavour to recover any equipment attached, but will not be responsible for any consequential loss. The promoter will be responsible for the immediate removal of their equipment when requested to do so by the Highway Authority at their own expense.

10 Decorations

10.1 All festive decorations should be designed to be fit for purpose and have an Ingress Protection (IP) of at least IP66.

10.2 No decorations that contain flashing red, yellow or green lamps will be allowed within 10 metres or within the motorist's sight lines of a set of traffic signals, light controlled pedestrian crossing facility or zebra crossing.

11 Competency

11.1 A competent person is someone with the skill, knowledge and/or experience of the particular type of work to be undertaken, and other qualities, so as to be able to identify and avoid danger. Training provides under-pinning knowledge to support competency. It is important that employees are conversant with hazards and risks, whether directly employed or employed by contractors or sub-contractors. Therefore, they should receive comprehensive training, instruction and updating on relevant aspects related to the assembly, installation, commissioning and on-going operation and maintenance of masts. It is also necessary to re-examine periodically the scope of work, equipment employed, procedures and standards of workmanship.

11.2 The competence of a person should be supported by underpinning training. Persons involved with site works should work only within the scope of their evidenced competence. Both organisational and employee competence should meet the key principles of CDM.

11.3 Typically, the industry standard for training and assessment of competence on or near the highway in the UK is the Highway Electrical Registration Scheme (HERS), which is a requirement of the National Highways Sector Scheme 8 (NHSS 8). There may be other similar organisations likely to be suitable for competency assessment and registration; the Operator needs to be satisfied that the alternative scheme covers the same range of works and operations.

11.4 All operational staff carrying out work on site should be registered to HERS and in possession of valid ECS HERS Cards at all times whilst on site.

11.5 As part of HERS, all operatives shall be assessed for competency and shall undertake a recognised course or system of training as appropriate leading to a Competence Based Qualification (CBQ) such as a National Vocational Qualification (NVQ)

12 Local Electricity Supply Company Requirements

12.1 The DNO has the responsibility as a Statutory Authority to ensure that all electrical installations comply fully with the Electricity Supply Regulations 1988 and the current edition of BS7671 IEE Wiring Regulations

12.2 The Regional Electricity Companies (RECs) (DNO)/Distribution Licence Holders (DLHs) must be advised of all festive decorations being installed on unmetered supplies. Details relating to the electrical load, burning hours and duration of the installation must be provided to enable a tariff to be agreed. This agreement needs to be signed prior to energising of the electricity supply to the festive decorations. The Operator shall also supply their name, address and a contact number

12.3 Any festive electrical installation must be installed to the same standards as if permanent. Cable supports shall be so arranged as to place no significant mechanical strain on cable terminations or joints

12.4 Where an electricity supply is requested, if this can be made readily available from an existing street lighting column service.

12.5 Written consent must be obtained from the Highway Authority and arranged for that Authority to carry out any necessary works. Only the Highway Authority shall carry out any works associated with connection/disconnection to/from the Local Electricity Company cut-out

12.6 The Local Electricity Company must be provided with written certification that any works carried out by them or their Contractor/s, complies with the current edition of BS7671 IEE wiring Regulations, the Health and Safety at Work Act 1974 and the Electricity at Work Regulations 1989

12.7 The operator is responsible for arrangements with the DNO for electrical supplies and the payment of charges in relation to energy consumption. No supply is to be taken from any Highway Authority apparatus without its prior written approval.

13 General Requirements

13.1 An application to install festive decorations must be made in writing to the Highway Authority, prior to the commencement of any installation works. Detailed plans indicating the proposed locations together with street lighting column numbers/locations and the prospective load of the installation/s must be included within the application. Under no circumstances will approval be granted retrospectively

13.2 A visual inspection by the authorities lighting contractor will be required prior to the issuing of the applicants switch on date. This will be no less than 2 weeks before the proposed switch on.

13.3 A copy of a current Public Liability Insurance Certificate must be supplied, indemnifying the Highway Authority against any 3rd party claims due to consequential personal injury,

or Highway Authority claim/s for damage caused to Authority property, to the sum of a minimum £5,000,000 in respect of any one incident/occurrence

13.4 Any damage caused to Highway Authority property will be repaired by the Authority's appointed Street Lighting Contractor and the subsequent invoice will be submitted to the Operator for settlement

13.5 Under no circumstances are flashing festive decorations to be installed within 10 metres of any light controlled junction/pedestrian crossing

13.6 All associated equipment must be erected and removed from the street lighting column/s within the dates specified on the application.

13.7 The operator shall ensure that all equipment is bench-tested prior to installation and shall ensure that the equipment remains in good repair until such time as it is removed from site/s

13.8 The Operator must provide a 24 hour emergency contact number for the Highway Authority Engineer and if requested shall remove their equipment. The Highway Authority retains the right to remove any/all equipment deemed as unsafe or potentially dangerous to the general public or it has caused damage to Authority property. The Authority Engineer will endeavor to retain any/all equipment so removed but will not be held responsible for its' loss. Any/all costs involved will be invoiced to the Operator for settlement

13.9 The Operator shall ensure that all installation and maintenance works are carried out in a safe manner. Where required traffic management plans must be supplied and be in accordance with Chapter 8 of the Traffic Signs Manual which shall be strictly adhered to. Under no circumstances are ladders to be used during installation/maintenance works.

13.10 Where catenaries are requested to be installed, the Operator must also consult with the Police and Health and Safety Executive to agree suitably safe method of working and suitable time for installation works.

13.11 Adherence to this code of practice does not absolve the Operator of his/her contractual obligations or Common Law duties to protect the health and safety of his operatives and the general public.

MKC Highways