

MWP

**THE LONG POINT LOUGHREA,
PUBLIC REALM UPGRADE.
Loughrea, Co Galway.
Site Lighting Overview**

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1. Site Lighting Overview

1.1 Introduction

The following report is intended to give an overview of the proposed site lighting design for the public realm update to the existing Long point amenity in Loughrea Co Galway. It should be read in conjunction with 25141-MWP-00-00-DR-E-9150 Site Lighting Layout, 25141-MWP-00-00-DR-E-9155 Site Lighting Lux Levels and site lighting calculation reports.

The lighting has been designed and light fitting selected to limit as much as is possible spill into the natural environment. Column heights have been constrained, lux levels kept to the minimum, fittings wattages kept to the minimum, dark sky certified fittings have been selected to ensure no upward light spill, colour temperatures are proposed as 2700K and lighting controls will be implemented to ensure artificial lighting illumination hours are as limited as possible.

1.2 Carparks A, B and C

Carparks are proposed to be lit to a 5lux average in line with the lowest acceptable lux level allowed by BS 5489-1 2020 which is referenced in the Galway CoCo public lighting guidelines.

The below fitting X1 is proposed to be mounted on 5m columns, it is a dark sky certified fitting with low glare optics.

Carpark and roadway lighting (fittings X1 and X3) are proposed to be on time control and daylight control to turn on 30mins before carpark opening and 30 mins after carpark closing currently foreseen as 6.30am to 10.30pm. Daylight controls will then regulate their operation

Fitting spacings will be reduced to give a slightly higher lux level around the EV charging points and conflict zones.

Note uniformities in certain areas such as carpark B are compromised by the requirement to have very limited light spill into woodland areas.

NOTE 1 A different level may be selected at periods of night when the usage is significantly different to normal usage.

NOTE 2 Table 4 is extrapolated from BS EN 12464-2:2014, Table 5.9.

Table 4 — Maintained lighting levels for outdoor car parks

Type of area and usage	Values in lux	
	\bar{E}	U_0
Light traffic, e.g. parking areas of shops, terraced and apartment houses; cycle parks	5	0.25
Medium traffic, e.g. parking areas of department stores, office buildings, plants, sports and multipurpose building complexes	10	0.25
Heavy traffic, e.g. parking areas of major shopping centres, major sports and multipurpose sports and building complexes	20	0.25

In areas with low ambient luminance or environmental sensitivity areas, car park lighting levels should be appropriate to the adjacent highway lighting levels.

Lighting for open roof level car parks should be planned to avoid visual domination of the skyline by the components used to mount the luminaires during the day and by the light sources at night.

NOTE 3 Further information is given in ILP GNO1 [N2].

The boundary of open roof level car parks should be well defined by illumination of the perimeter and rails. When selecting the location of luminaires and mounting components, the need for access for maintenance should be taken into account.

Table 4 From BS 5489



Proposed Light Fitting X1 – Cree Sirius 2700k 12W

1.3 Main Roadway Down To Slipway

This roadway is proposed be lit to a P4 classification which is equivalent to a quiet residential road and aligned with the lux level for the carparks.

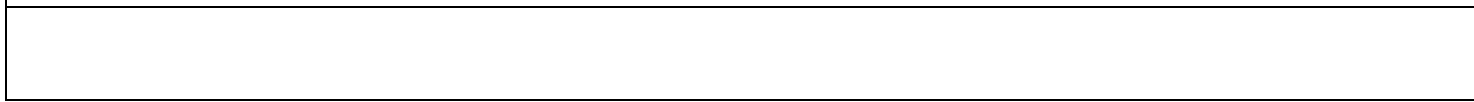
A more powerful 20W version of the carpark X1 light fitting is required for this route and uniformities are not fully compliant as we need to keep fittings away from the woodland area and ensure lux levels drop off at the SPA boundary.

Carpark and roadway lighting (Fittings X1 and X3) are proposed to be on time control and daylight control to turn on 30mins before carpark opening and 30 mins after carpark closing currently foreseen as 6.30am to 10.30pm. Daylight controls will then regulate their operation

Fitting spacings are aligned to give a higher lux levels at pedestrian crossings and similar conflict zones.

Road Type	Lighting Class	Maintained Average Illuminance, lx LED	Maintained minimum illuminance, lx LED	Uniformity Emin/Eav
Roads where - Night-time public use likely to be high - Or the crime risk likely to be high - Or the traffic usage is likely to be high	P2	10.0	2.0	0.2
Roads where - Public use is likely to be moderate - Or the crime risk is average to low - Or normal traffic usage is of a level equivalent to that of a housing estate access road.	P3	7.5	1.5	0.2
Roads where - Public use is likely to be moderate - Or the crime risk is average to low - Or quiet traffic usage is of a level equivalent to that of a residential road mainly associated with the adjacent properties.	P4	5.0	1.0	0.2

A P4 Lighting Class Overview in Line with Table 3 of EN 13201-2 2015





Proposed Light Fitting X3 – Cree Sirius 2700k 20W

1.4 Pedestrian Link Route to New Crannog Viewpoint

It is proposed to light one central pedestrian route leading to the new Crannog viewing point. Lights on this walkway proposed to be fitting X2 as shown below on a 5m column

Fitting X2 to have astronomical clock, photocell and presence sensor controls - fittings to operate on presence controls between 10.30pm and 6.30 am and daylight controls as required between 6.30am and 10.30pm. Presence controls to be linked between fittings to light up multiple fittings on one detection, zoning to be agreed at detailed design stage.

We are proposing this route as being a P5 lighting class based on the recommendations of BS 5489-1 2020 however we are closer to a P4 in our calculations due to being restricted in the type of fitting we can use and the lowest wattage available, we would propose a dimming strategy to bring this down on commissioning.

Table A.5 — Lighting classes for subsidiary roads

Traffic flow	Lighting class		
	E1 to E4 ^{A)}	E1 to E2 ^{A)}	E3 to E4 ^{A)}
	Pedestrian and cyclists only	Speed limit $v \leq 30$ mph	Speed limit $v \leq 30$ mph only
Busy ^{B)}	P5	P4	P3
Normal ^{C)}	P5	P5	P4
Quiet ^{D)}	P6	P5	P4

NOTE 1 Table A.5 assumes no parked vehicles; see risk assessment in 4.3.3.2.
 NOTE 2 An EV lighting class using vertical illuminance, from BS EN 13201-2:2015, Table 6, can be specified in addition to the general lighting class when there are particular concerns about crime and personal safety. EV is calculated at the typical height of a human face (1.5 m) and in relevant viewing orientations.
 NOTE 3 To ensure adequate uniformity, the actual value of the maintained average illuminance is not to exceed 1.5 times the value indicated for the class.
 NOTE 4 The actual overall uniformity of illuminance, U_a needs to be as high as reasonably practicable (see 7.2.6).
 NOTE 5 The ambient luminance descriptions E1 to E4 refer to the environmental zone as defined in ILP GN01 [N2].
 NOTE 6 The illuminance classes are suggested minimum levels. A risk assessment needs to be carried out to ensure that the light levels are adequate, particularly for pedestrians and cyclists.

^{A)} Environmental zone, as given in ILP GN01 [N2].

Table A5 From BS 5489-1 2020

Table 3 — P lighting classes

Class	Horizontal illuminance		Additional requirement if facial recognition is necessary	
	\bar{E}^a [minimum maintained] lx	E_{min} [maintained] lx	$E_{v,min}$ [maintained] lx	$E_{sc,min}$ [maintained] lx
P1	15,0	3,00	5,0	5,0
P2	10,0	2,00	3,0	2,0
P3	7,50	1,50	2,5	1,5
P4	5,00	1,00	1,5	1,0
P5	3,00	0,60	1,0	0,6
P6	2,00	0,40	0,6	0,2
P7	performance not determined	performance not determined		

^a To provide for uniformity, the actual value of the maintained average illuminance shall not exceed 1,5 times the minimum \bar{E} value indicated for the class.

NOTE 4 A high colour rendering contributes to a better facial recognition.

A P5 Lighting Class as Defined by Table 3 In EN 13201-2 2015



Proposed Lighting Fitting X2 For Pedestrian Routes, Thorn Flow 15W 2700K With Daylight and Presence Sensor Controls