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MIX MANCHESTER



250364

External Lighting Outline Planning Report

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External Lighting Report



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1.0 Introduction

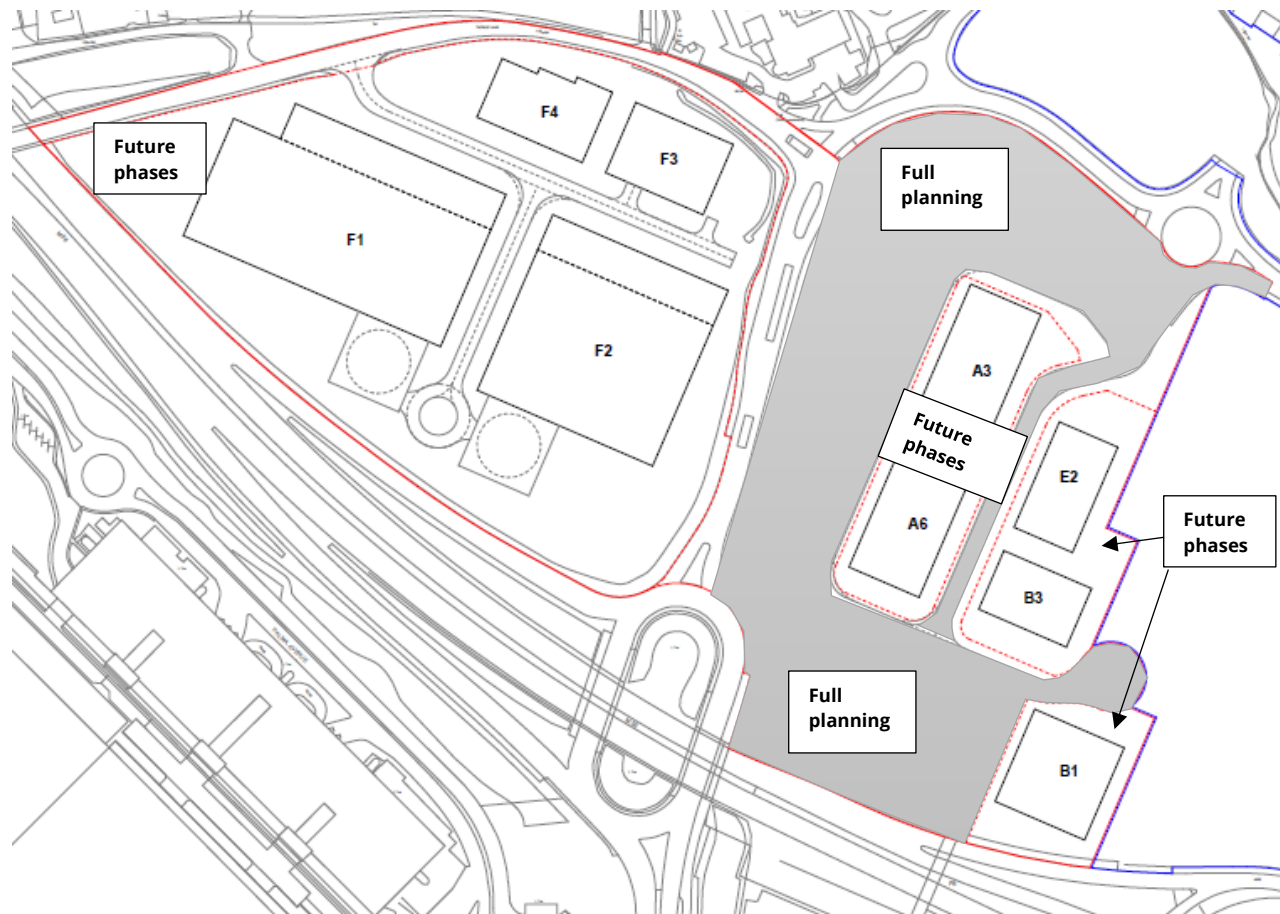
This report details the general lux requirements and product types for use at Mix Manchester (hereafter referred to as the "Site").

The proposed development is to be undertaken in phases, phase 1 will be submitted as part of the full planning application, for which a separate external lighting report, **Ref - 250364-CPW-XX-00-RP-E-221001**, has been produced by CPW. This report is for outline planning for future phases. These includes construction of new buildings, associated roadways, loading bays, accessible parking bays, footpaths and amenity spaces. This report will identify indicative external lighting proposals, with full details to be determined at a later stage.

The site is situated approximately 1.25km north of Manchester Airport and predominantly consists of previously developed grassland with a surface car park. The closest residential properties are to the north east of the site. There are also nearby hotels to the north west and south of the site.

Due to the proximity of nearby residential buildings and hotels, the lighting design will be sensitive and compliant with the principles set out within the ILP (Institute of Lighting Professionals) Guidance Note 1, The Reduction of Obtrusive Light. Care will also be taken to minimise upwards light to reduce nuisance light to the airport. This is in accordance with the pre-application consultation with MAG's Safeguarding Teams.

Illustrative Masterplan:



2.0 Lighting Design Brief

This report has been produced for outline planning for the whole development, the illustrative masterplan shown adjacent shows potential future phases all of which will submit their own detailed planning application, following the principles laid out within this report.

Exterior lighting will likely be required to the following areas: roads, loading bays, parking bays and pedestrian zones. The higher levels of illuminance will be required for loading bays, parking bays and roads. This will be achieved using post top luminaires with 0 upwards light. The pedestrian zones will require lower light levels and will be achieved using mid height luminaires that provide good facial illumination. A colour temperature of 3000K should be selected. These product types are shown in section 5.0.

The lighting control strategy is to be agreed at a later stage, however it is likely to be via photocell and timeclock arrangements to ensure that the lighting will be energised at low ambient light levels and will likely remain on throughout the night until sunrise.

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3.0 Required Illumination Levels

At this stage a detailed landscape plan is yet to be developed, however it is likely that the site will be made up of a mixture of roadways, parking and pedestrian zones. Some typical lighting classifications, which will likely apply to the site are discussed below.

Roadways with loading bays and parking bays adjacent to them will be lit to a P1 classification, which requires 15 lux average and 3 lux minimum. If no loading bays or parking bays are present, these shall be lit to a lower P2 classification, which requires 10 lux average and 2 lux minimum.

Main pedestrian paths, such as walkways adjacent to roads and/or parking shall be lit to a P4 classification, requiring 5 lux average and 1 lux minimum. While footpaths away from roads and amenity spaces, will be lit to a lower P5 classification, which will require 3 lux average and 0.6 lux minimum.

These targets are in reference to the P classes set out in BS EN 13201-1 and BS EN 13201-2.

Loading bays and adjacent parking bays shall be lit to 20 lux average with a uniformity of 0.25. If no loading bays are present, parking bays shall be lit to 10 lux average with a uniformity of 0.25.

These targets are in line with recommendations set out in BS EN 12464-2.

During the detailed design stage alternative/equivalent classifications may be selected.

Area	Maintained Illuminance (Lux)	Minimum Illuminance (Lux)
Roadways: P1 Classification	15	3
Roadways: P2 Classification	10	2
Main Pedestrian Paths: P4 Classification	5	1
Footpaths/Amenity Spaces: P5 Classification	3	0.6
Loading Bays and Adjacent Parking	20	0.25 (uniformity)
Parking Bays	10	0.25 (uniformity)

4.0 ILP Guidance Notes for the Reduction of Obtrusive Light, 2021

In accordance with the Institute of Lighting Professionals (ILP) 'Guidance Notes for the Reduction of Obtrusive Light, (2021)'. CPW have made the judgement that the development will be classed as an E3 zone, and as such the below requirements are to be met.

Zone	Surrounding	Examples
E0:	Protected – Dark	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1:	Natural - Dark	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc
E2:	Rural – Low district brightness	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3:	Suburban – Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4:	Urban - High district brightness areas	Town/city centres with high levels of night-time activity

Having an environmental zone of E3 indicates that the design shall need to comply with the table below:

Environmental Zone	Sky ULR (%)	Glow (Max Ev (Lux))	Light Trespass (into windows)		Source Intensity I (cd)		Building Luminance Pre-curfew
			Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	Average, L
E0:	0	n/a	n/a	n/a	0	0	<0.1
E1:	0	2	<0.1		2500	0	<0.1
E2:	2.5	5	1		7500	500	5
E3:	5	10	2		10000	1000	10
E4:	15	25	5		25000	2500	25

- ULR

Upward light ratio of the installation is the maximum permitted percentage of luminaire flux for the total installation that goes directly into the sky.
- EV

Vertical illuminance in lux and is measured flat on the glazing at the centre of the window.
- I

Light intensity in Cd.
- L

Luminance in Cd/m².
- Curfew

Time after which stricter requirements (for the control of obtrusive light) will apply; often a condition of lighting applied by the local authority. If not stated—23:00h is suggested.

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5.0 Product Types



Post top luminaire
3000K
For roadways and parking areas
0% upwards light



Exterior downlight
3000K
For building entrances with canopies
0% upwards light



Light stack
3000K
For pedestrian zones
0.02% upwards light



Wall mounted luminaire
3000K
For building perimeter and entrances
0% upwards light

6.0 Summary

As the detailed design for the outline phases of the scheme are developed it will provide an energy efficient and good quality lighting design to serve the exterior pedestrian routes, roadways, loading bays and parking bays, providing safe and practical light levels in line with the relevant lighting standards and guides.

The lighting strategy will be developed in conjunction with landscape proposals and in line with the recommendations in the Places for Everyone policy JP-J1 which aims to provide high level amenity spaces. It is likely that columns will be proposed for the roads, loading bays, parking bays and adjacent walkways. While a mid-height light stack will be proposed for the pedestrian amenity areas and footpaths, to provide good light levels and facial illumination.

Feature luminaires may also be introduced, if required.

In line with Manchester’s Core Strategy policy DM1 the scheme will be developed to ensure that any potential impact on the nearby residential areas and hotels is minimised. Upwards light shall also be kept to a minimum, to reduce nuisance light towards the nearby airport.

The lighting scheme shall be based around a low pollution, low energy and low maintenance strategy. Considerations should be given to high quality products which have excellent light control optics such that their efficiencies are maximised and carbon footprint minimised.



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+44 (0) 121 709 6600

Interface 100
Arleston Way, Solihull
B90 4LH

birmingham@cpwp.com
www.cpwp.com

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