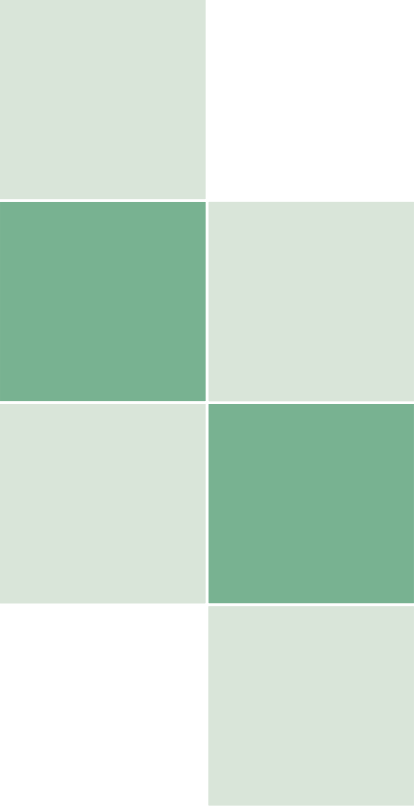


A decorative graphic on the left side of the page, consisting of a grid of squares. The grid is 3 squares wide and 4 squares high. The squares are colored in two shades of green: a dark green and a light green. The squares are arranged in a pattern that resembles a staircase or a series of steps.

Circle Square 2,3 & 4– Manchester

External Lighting Strategy Statement

Ref: 1609 R002 Rev 01 Date: 09/09/2020



Revision Record

Date	Reference	Revision	Prepared By	Checked By
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1.0 Introduction

This report covers the external lighting to the surrounding areas of Circle Square buildings 2,3 & 4 on Oxford Rd, Manchester. The lighting philosophy to the external realm is based on achieving a good level of maintained illuminance across the site, minimising dark areas to create a safe environment whilst avoiding light spillage and light pollution to surrounding areas.

The lighting scheme is based on energy efficient LED luminaires and seeks to illuminate architectural features of both the buildings and the external landscaping scheme. The external lighting also takes into consideration both the level and uniformity of lighting required for security, CCTV operation, safe movement of visitors, staff and residents to the buildings/landscaping around the site.

2.0 Design Standards, policy & guidance

2.1 Standards

The external lighting design has been carried out in accordance with the following standards: -

- SLL Code for Lighting
- BS 12464-2:2014
- BS5489-1: 2013 Code of practise for the design of road lighting
- CIBSE guide LG6 – 2016
- ILE Guidance Notes 2011
- ILP Guidance note 1 2020

The lighting seeks to reduce lighting pollution by preventing upward light pollution through optimal mounting heights and local light distribution, and by utilising low energy, efficient LED lighting luminaires that limit glare through design. The lighting design seeks to meet the guidance of the ILE guidance note 2011.

It is important that the lighting provides the appropriate levels of illumination and uniformity to ensure that adequate lighting is provided to roadways and pedestrian routes. The lighting should also offer a pleasing aesthetic quality.

The intention is to light the roadway and pedestrian routes to provide safe and secure access around the site. The illuminance levels will take into account feature areas to allow the integrated lighting to the structures and feature elements to be more visible, adding interest and depth to these areas.

Lighting levels will be suitable for pedestrian and vehicular access. Maintained average illuminance levels recommended by the standards below will be achieved as detailed typically on the external lighting strategy drawing. Lighting will be installed to provide sufficient illumination for safe circulation and to promote a feeling of safety and security.

3.0 Vertical illuminance on buildings

This section aims to highlight that the current external lighting scheme complies with the ILP & CIBSE guidance relating to reduction of obtrusive light. Calculations have been performed to demonstrate that the vertical illuminance on buildings 2, 3 & 4 comply with Table 3 of the ILP guidance (below) and ensure that the maximum lux level of 25 lux pre curfew and 5 lux post curfew is met as per environmental zone E4.

Table 3 (CIE 150 table 2): Maximum values of vertical illuminance on properties.

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

Note:

* If the installation is for public (road) lighting then this may be up to 1 lx.

A vertical plane has been included within the calculation at 3 points along each elevation of each building to ensure an accurate value can be determined. The vertical planes have been calculated at ground floor level where there are retail units and at level 01 for residential levels.

The tables in appendix 3 below summarise the outputs from the calculations. Table 1 details the results of the calculation at retail level and table 2 details the results at residential level. References for elevations of each building can be found on the drawing 'Appendix 4 – Vertical illuminance elevations drawing' at the bottom of this document. Where compliant lux levels are met, they have been highlighted green within the tables.

Where compliant levels are not achievable the intention shall be to utilise the fully addressable KNX DALI lighting control system to dim the lighting within these areas. As shown in the calculation summary in appendix 3, the current lighting fulfils the criteria set out in the ILP guidance at residential level. However, to ensure the correct levels are achieved at retail level we shall need to use dimming control.

Commissioning of the external lighting system shall be policed and witnessed to ensure that final agreed levels are met.

4.0 Lighting control

The public realm surrounding buildings 2,3 & 4 is provided with a fully addressable KNX DALI lighting control system with built-in programming for timer control. The system allows for the flexible control of the luminaires including switching and dimming to meet various applications. The lighting control system is linked with external lux level sensors to ensure the lighting switches off at dawn and on at dusk.

The lighting controls are located within feeder pillars with zones of lighting electrically fed from the various buildings around the site.

See below for a schematic example of the public realm surrounding buildings 2,3 & 4.

5.0 Overview of the Particular Design

The external lighting design to the public realm surrounding buildings 2,3 & 4 on Oxford Road, Manchester provides functional LED lighting and feature lighting by way of building mounted LED downlights, bollard luminaires, column mounted LED lighting and in-ground LED up lights.

5.1 Entrance and road lighting

Vehicular access routes and Brancaster Road shall be illuminated utilising column mounted luminaires which shall provide functional illumination. It is proposed to install the luminaires on 6 metre columns.



Proposed Column mounted luminaires.

Medlock walk shall be illuminated using 3-metre-high bollard luminaires. Due to the walk being a flood area a number of the bollard fittings shall be installed with high level doors to allow electrical connections to be above the water line.



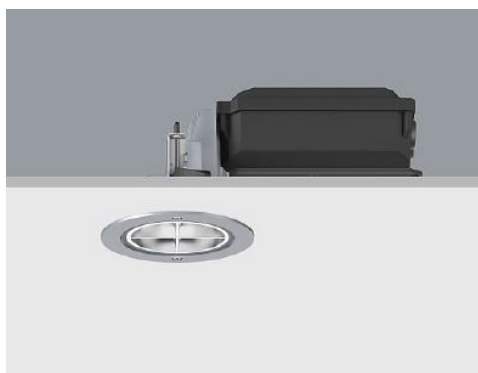
Proposed bollard luminaires.

The area around Central Square shall be illuminated using wide beam and medium beam spotlights mounted at various angles on columns 10 meters above finished floor level.



5.2 Building perimeter lighting

It is proposed that the building perimeter lighting shall be via building mounted downlights which shall be recessed into the underside of the building façades.



Proposed building mounted perimeter luminaire

5.3 Feature Lighting

The feature lighting to the amenity and public realm spaces around circle square shall be provided by a number of types of luminaire. Floor recessed up lights shall be included along walkways around the site and on Brancaster Road.



Proposed floor recessed luminaires.

Stairs around the site shall be illuminated using low-level recessed wall lights and luminaires concealed within the underside of handrails.



Proposed handrail luminaire.



Proposed wall recessed luminaire.

6.0 Appendices

Appendix 1 - Exterior lighting drawing

The Isolux plots indicated on the below drawing confirm that there is no adverse impact on the amenity of residents within this and adjacent developments.