



Williams Lighting Consultants Ltd.

Lighting Overview & Environmental Report

February 2020

Prepared for: Abbey M&E

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1. Introduction

1.2 This Lighting Overview & Environmental Report has been prepared by Williams Lighting Consultants Ltd. for and on behalf of Abbey M&E. The report assesses the requirements for safety fences (lighting protection), design considerations, Health and Safety requirements, environmental impacts and future maintenance schedules associated with the proposed street lighting equipment.

2. Safety Fences (protection barriers)

2.1 Lighting Units

2.1.1 All lighting columns are to be positioned at least 0.8m from kerb / roadway edge. Safety fences are not required.

3 Maintenance Activities

3.1 Electrical Test and Inspection

3.1.1 Upon installation all lighting columns shall have an electrical installation certificate as per the latest BS7671 Requirements for Electrical Installations - IET Wiring Regulations. This certificate is to be passed to the management team upon completion.

3.1.2 Each lighting column shall require a periodic condition report every 6 years dated from the initial test certificate.

3.2 Lamp change

3.2.1 The proposed lanterns utilize an LED light source, lamp changes will not be required. It is however recommended that the LED lens be cleaned every 6 years.

3.3 Structural Test and Inspections

3.3.1 It is recommended that all lighting units are visually inspected for damage every three years.

4 Health and Safety

4.1 Installation and Demolition

4.1.1 All works are to be carried out considering current Health and Safety regulations, legislation and Construction Design Management 2015 regulations. The below list is not exhaustive:

- Highways Act, 1980
- The Management of Health and Safety at Work Regulations, 1999 and 2003
- Electricity at Work Regulations, 1989
- CDM Regulations 2015
- BS7671 Wiring Regulations
- New Roads and Street Works Act (NRSWA), 1991
- BS5489 (British Standards for Lighting)
- G39/1 Working in Vicinity of DNO Equipment

4.1.2 Under CDM a project is notifiable if the construction work is to exceed 30 working days and has more than 20 workers working simultaneously at any point or exceeds 500 person days. If any of these are applicable an F10 form must be submitted. This form can be found by visiting the HSE website.

4.1.3 CDM regulations will still apply if the project does not meet the above requirements. If any of this is in doubt the company should seek professional advice.

4.1.4 It is recommended that all street lighting works are carried out by an ASLEC approved contractor.

4.1.5 All electrical works must comply with the latest BS7671 Requirements for Electrical Installations - IET Wiring Regulations.

5 Design Considerations

5.1 Existing Installation

5.1.1 The site is a new development and no lighting exists where the development is proposed. Existing lights are present on the adjacent streets and footpaths surrounding the site.

5.2 Designed Lighting Levels

5.2.1 The proposals have been designed to meet a P5 lighting class with SP ratio of 1.3 applied for a warm white light source as per BS 5489.

6 Environmental Considerations

6.1 Proposed Lighting

- 6.1.1 The proposed design ensures existing receptors do not have any light spill onto their properties. Refer to WLC322-LC-AC and WLC322-1300-001 for further details regarding light spill.
- 6.1.2 The potential lighting impact has been significantly reduced using a competent design practice and careful considerations towards heights of columns and equipment specification.

6.2 Obtrusive Light Limitations for Exterior Lighting

- 6.2.1 The below table published by the ILP provides guidelines and threshold values for environmental zones.

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

- 6.2.2 The proposed site is considered under Environmental Zone E3 (medium district brightness).
- 6.2.3 The calculations demonstrate the lux levels are well below the maximum levels detailed above.

6.3 Proposed Luminaire

- 6.3.1 The Urbis Axia 2.1 lantern has been selected. The unit provides 0% upward light.
- 6.3.2 Optics have been carefully selected to ensure light trespass is eliminated.
- 6.3.3 All lights are to be mounted on the horizontal (0 degree uplift)

6.4 Ecology

- 6.4.1 Refer to Lighting Mitigation Report (WLC322-LMR-001) for further details.

7 Environmental Residual Effects

7.1 The proposed lighting will have a residual effect on the environment and these will occur at different phases during the project. The residual effects have been assessed below and consider the permanent and temporary effects.

7.2 `Operational - Landscape and Visual (permanent impact)

7.2.1 There is a permanent impact on the visual scene. With the use of a design practice the impact can be minimized through good design – reducing the number of columns required. With the use of modern lanterns light is well controlled.

7.2.2 Recommendation: Design prepared by competent designer and in accordance with ILP Guidance on the Reduction of Obtrusive Light.

7.3 Operational - Community (permanent impact)

7.3.1 A well-designed lighting installation will have a positive impact on the local community, providing:

- A reduction in the fear of crime
- Encourage the use of more sustainable modes of transport, such as walking, cycling.

7.3.2 Recommendation: None

7.4 Construction and Demolition - Noise (temporary impact)

7.4.1 Noise during construction

7.4.2 Recommendation: Employment of competent contractor with use of appropriate tools to minimize noise.

7.5 Construction and Demolition - Dust (temporary impact)

7.5.1 Dust during construction

Recommendation: Employment of competent contractor with use of appropriate tools to minimize dust.

7.6 Construction and Demolition – Ground Contamination (temporary impact)

7.6.1 None anticipated

Recommendation: None

7.7 Construction and Demolition – Storage of Materials (temporary impact)

7.7.1 Storage of materials is anticipated

Recommendation: Hazardous materials to be handled, stored and transported in accordance with COSHH regulations and manufacturer guidelines.

7.8 Construction and Demolition – Waste

7.8.1 Waste is anticipated

Recommendation: Lamps and lanterns to be disposed of in accordance with WEEE regulations. Columns to be recycled where possible.