



Design Considerations & Environmental Report

**Blind Lane
Southwick**

DESIGN CONSIDERATIONS & ENVIRONMENTAL REPORT

Document Issue Sheet

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This Design Considerations & Environmental Report has been prepared for our client as stated within our appointment only and expressly for the purposes set out in an appointment and we owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. This report has been based solely on the specific design assumptions and criteria stated herein.

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1. Introduction

1.1 This Design Considerations & Environmental Report has been prepared by Williams Lighting Consultants Ltd. for and on behalf of the Client. 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 lighting equipment.

1.2 Site Location: Land off Blind Lane, Southwick, Wiltshire



2. Safety Fences – Lighting Columns

2.1 All lighting columns are to be positioned at least 0.8m from the kerb edge or at the rear of the footpath/shared space areas. Refer to drawings WLC1460-1300-001 for further details.

2.2 The British Standard recommends a 0.8m setback as a minimum. With the above proposals, it is considered that safety barriers will not be a requirement for any lighting column within the proposed design.

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 authority/developer upon adoption/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 Changes

- 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 and driver replacements should be considered.

3.3 Structural Test and Inspections

- 3.3.1 It is recommended that all lighting columns are visually inspected for damage every three years for the first six years and then every 2 years.
- 3.3.2 Columns to be structurally tested and inspected following with industry best practice ILP Guidance Note 22/19 Asset-Management Toolkit: Minor Structures.

4. Health and Safety

4.1 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

4.2 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.

4.3 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.

4.4 It is recommended that all street lighting works are carried out by an HERS Registered contractor.

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

5. Design Considerations

5.1 Existing Lighting

5.1.1 New development – no existing lighting.

5.2 Maintenance Factors

5.2.1 Proposed luminaire maintenance factors have been derived following Wiltshire Council guidance specifications.

5.3 Overhead Cables

5.3.1 None present.

5.4 Lighting Levels

5.4.1 The proposals have been designed to meet the requirements of the lighting class P5 as per BS5489-1:2020 and Wiltshire specifications, based on E2 zone and quiet traffic usage.

5.5 Ecology Concerns

5.5.1 The site lies within the area covered by the Trowbridge and Westbury Bat Mitigation Strategy (TWBMS) and within an area known to support bats forming part of the populations for which the Bath and Bradford-on-Avon Bats Special Area of Conservation (SAC) is notified. The Natural England consultation response to Wiltshire Council (ref 550656, 28.08.26, application PL/2026/01383) records that the submitted survey results show the site is used by at least nine bat species, including the Annex II species greater horseshoe bat, lesser horseshoe bat and barbastelle, with Bechstein's bat assumed to be present, and that the site is located within the yellow medium risk zone of the TWBMS. Bat activity is concentrated along the boundary features, with most activity recorded along the south eastern watercourse and hedgerow, which are identified as core bat habitat.

- 5.5.2 Natural England advises that core bat habitat should be buffered by 15m of new core bat habitat (zone A) and a further 15m dark buffer zone (zone B), and that the lighting strategy must meet the lux levels prescribed in the TWBMS. The scheme proposes a 15m zone A and a 10m zone B along the south eastern watercourse. The project ecologist (GE Consulting) has confirmed that lighting within the buffer zones is to achieve the requirements of ILP Guidance Note 08/23 and the TWBMS, with vertical illuminance on the retained habitat not exceeding 0.4 lux, with the zones measured from the retained hedgerow along the river corridor. Natural England has also advised that a post-development lighting survey is secured by planning condition, with remedial measures implemented in any areas of excess light levels, and that no construction lighting is installed.
- 5.5.3 The lighting design has been developed to respond to these constraints. Refer to section 6 for the mitigation measures adopted and the results of the ecology calculations.

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.
- 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 has been reproduced from the ILP GN01/20 and provides maximum limits on vertical illuminance values on properties.

Table 1 (Table 3 GN01/20): Maximum values of vertical illuminance on properties.						
Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance on 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 E2 (medium district brightness).

- 6.2.3 The below table has been reproduced from the ILP GN01/20 and provides maximum limits on upward light values.

Table 2 (Table 6 GN01/20) Maximum values of upward light ratio (ULR) of luminaires.					
Light technical parameter	Environmental zone				
	E0	E1	E2	E3	E4
Upward Light Ratio (ULR %)	0	0	2.5	5	15

6.3 Proposed Luminaire

Table 3: Luminaire Specification				
Luminaire	Proposed Locations	Characteristics		Image
Urbis Axia 3.1	Highway lighting	Upward Light:	0%	
		Glare Rating:	G3	
		Colour temperature:	3000K (Warm White)	
		Efficacy:	Up to 140lm/cW	

6.4 Ecology

- 6.4.1 The lighting design responds to the ecological constraints set out in section 5 with regard to ILP Guidance Note 08/23, Bats and Artificial Lighting at Night, and the TWBMS. Warm white 3000K LED light sources are proposed throughout, limiting the blue light content to which bats are most sensitive. Lanterns are post top mounted at 0° tilt with flat glass and zero upward light output, and luminous flux is limited to that necessary to achieve lighting class P5 in accordance with BS 5489-1:2020. Columns are positioned within the internal road network and set away from the retained hedgerow and watercourse along the south eastern boundary.
- 6.4.2 All lanterns are fitted with DALI dimming and CMS compatible drivers. The proposed dimming regime (D19) operates the lanterns at 100% output from dusk to 20:00, 75% from 20:00 to 23:00, 50% from 23:00 to 06:00 and 100% from 06:00 to dawn, reducing light output through the night.
- 6.4.3 The extent of light spill toward the dark corridor has been assessed in calculation report WLC1460-LC-AC-002, which is calculated with a maintenance factor of 1.00 to represent day one light levels at full output. Vertical calculation grids V1 to V5 are positioned along the 10m buffer zone edge facing the proposed lighting, starting 1m above ground level and extending 5m vertically. The maximum vertical illuminance recorded on any grid is 0.22 lux, below the 0.4 lux maximum. Horizontal illuminance contours

calculated at 1m above ground level, including the 0.2 lux contour, are shown on drawing WLC1460-1300-001 together with the buffer zone edge and the vertical grid locations.

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 a competent designer following BS 5489 and 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 Operational - Ecology (permanent impact)

7.4.1 Light spill toward the retained core bat habitat along the south eastern watercourse and hedgerow.

7.4.2 Recommendation: Lighting to be installed and commissioned in accordance with the design, including the specified dimming regime. Post-development lighting survey to be undertaken as advised by Natural England, with remedial measures implemented in any area of excess light levels.

7.5 Construction and Demolition - Noise (temporary impact)

7.5.1 Noise during construction

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

7.6 Construction and Demolition - Dust (temporary impact)

7.6.1 Dust during construction

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

7.7 Construction and Demolition – Ground Contamination (temporary impact)

7.7.1 None anticipated

7.7.2 Recommendation: None

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

7.8.1 Storage of materials is anticipated

7.8.2 Recommendation: Hazardous materials to be handled, stored, and transported following COSHH regulations and manufacturer guidelines.

7.9 Construction and Demolition – Waste

7.9.1 Waste is anticipated

7.9.2 Recommendation: Lamps and lanterns to be disposed of following WEEE regulations. Columns to be recycled where possible.

7.10 Construction and Demolition - Lighting (temporary impact)

7.10.1 Temporary lighting during construction within a bat sensitive site.

7.10.2 Recommendation: No construction lighting to be installed, as advised by Natural England.