



**LIGHTING REALITY AREA CALCULATION**  
Ref. P24896-LRA-Ph3-MF087

Grid 1 – Northern Access Rd (P5)  
Results – Horizontal Illuminance (lux)  
Eav= 3.09  
Emin= 0.60  
Emax= 8.10  
Emin/Emax= 0.07  
Emin/Eav= 0.19  
Emax/Eav= 2.62

Grid 2 – Northern Access Rd (P4)  
Results – Horizontal Illuminance (lux)  
Eav= 6.67  
Emin= 2.78  
Emax= 14.44  
Emin/Emax= 0.19  
Emin/Eav= 0.42  
Emax/Eav= 2.16

Grid 3 – Northern Access Rd (P4)  
Results – Horizontal Illuminance (lux)  
Eav= 5.08  
Emin= 1.37  
Emax= 11.45  
Emin/Emax= 0.12  
Emin/Eav= 0.27  
Emax/Eav= 2.25

**KEY TO LIGHTING SYMBOLS (S38 AREA)**

**PROPOSED NEW LIGHTING FOR PHASE 3**

- PROPOSED NEW ADAPTABLE 6m LIGHTING UNIT WITH POST TOP MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 16 No WARM WHITE (2700K) LEDs, 52673 OPTIC, 460mA DRIVER AND 3.5km FLUX, Ref. AXIA 3.1 C3.5 27K
- PROPOSED NEW ADAPTABLE 6m LIGHTING UNIT WITH LED LUMINAIRE FITTED WITH BACK LIGHT LOUVRES, POST TOP MOUNTED AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 16 No WARM WHITE (2700K) LEDs, 52673 OPTIC, BACK LIGHT LOUVRES, 460mA DRIVER AND 3.5km FLUX, Ref. AXIA 3.1 C3.5 27K BL
- PROPOSED NEW ADAPTABLE 5m LIGHTING UNIT WITH POST TOP MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 8 No WARM WHITE (2700K) LEDs, 52673 OPTIC, 540mA DRIVER AND 2.01km FLUX, Ref. AXIA 3.1 C2.0 27K
- PROPOSED NEW ADAPTABLE 5m LIGHTING UNIT WITH LED LUMINAIRE FITTED WITH BACK LIGHT LOUVRES, POST TOP MOUNTED AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 8 No WARM WHITE (2700K) LEDs, 52673 OPTIC, BACK LIGHT LOUVRES, 540mA DRIVER AND 2.01km FLUX, Ref. AXIA 3.1 C2.0 27K BL

**LIGHTING FOR ADJOINING PHASE 2**

- PROPOSED NEW ADAPTABLE 6m LIGHTING UNIT WITH POST TOP MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 16 No WARM WHITE (2700K) LEDs, 52673 OPTIC, 460mA DRIVER AND 3.5km FLUX, Ref. AXIA 3.1 C3.5 27K
- PROPOSED NEW ADAPTABLE 6m LIGHTING UNIT WITH POST TOP MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 16 No WARM WHITE (2700K) LEDs, 52673 OPTIC, BACK LIGHT LOUVRES, 460mA DRIVER AND 3.5km FLUX, Ref. AXIA 3.1 C3.5 27K BL
- PROPOSED NEW ADAPTABLE 5m LIGHTING UNIT WITH POST TOP MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 8 No WARM WHITE (2700K) LEDs, 52673 OPTIC, 540mA DRIVER AND 2.01km FLUX, Ref. AXIA 3.1 C2.0 27K
- PROPOSED NEW ADAPTABLE 5m LIGHTING UNIT WITH POST TOP MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 8 No WARM WHITE (2700K) LEDs, 52673 OPTIC, SIDE LIGHT SHIELD FITTED TO SIDE FACING SITE BOUNDARY, 540mA DRIVER AND 2.01km FLUX, Ref. AXIA 3.1 C2.0 27K SL
- PROPOSED NEW ADAPTABLE 5m LIGHTING UNIT ON FOLD DOWN COLUMN, WITH POST TOP MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 8 No WARM WHITE (2700K) LEDs, 52693 OPTIC LEDs, 270mA DRIVER AND 1.08km FLUX, Ref. AXIA 3.1 A1.0 27K BL

**PROPOSED NEW LIGHTING FOR ADJOINING S278 AREA**

- EXISTING ADAPTABLE 6m LIGHTING UNIT WITH POST TOP MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 16 No WARM WHITE (3000K) LEDs, 52673 OPTIC, 460mA DRIVER AND 3.6km FLUX, Ref. AXIA 3.1 C3.6 3K
- PROPOSED NEW ADAPTABLE 6m LIGHTING UNIT WITH POST TOP MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.1 WITH 16 No WARM WHITE (3000K) LEDs, 52673 OPTIC, 460mA DRIVER AND 3.6km FLUX, Ref. AXIA 3.1 C3.6 3K
- EXISTING ADAPTABLE 8m LIGHTING UNIT WITH SIDE ENTRY MOUNTED LED LUMINAIRE AT 0° INCLINATION. LANTERN IS URBIS SCHREDER AXIA 3.2 WITH 32 No WARM WHITE (3000K) LEDs, 528031 OPTIC, 580mA DRIVER AND 8.87km FLUX, Ref. AXIA 3.2 D8.8 3K

**DESIGN COMMENTARY**

This design is based on the lighting Impact assessment undertaken for the developer, Redrow Homes South West, by The Lighting Bee Ltd, for the planning application. (See report number 1038-LB-XX-XX-RP-E-7080-02 revision 0.6 dated 28.08.24). Ecology reports have been prepared for the site by EAD ecology, and these have identified most of the site boundaries as being ecologically sensitive, with dark zones required. A key plan showing location of these for this phase of the development is included in Appendix B of The Lighting Bee report, but this is also transcribed onto this drawing.

This drawing deals with proposed lighting for the on-site adoptable roads in phase 3 of the development only.

Drawing P24896-S38-30 (Sheet 1 & Sheet 2) shows maintained calculated illuminance

Drawing P24896-S38-31 (Sheet 1 & Sheet 2) shows calculated illuminance with no maintenance factor applied (MF = 1). This shows lighting in its brightest condition, and therefore the worst case for spill light, and is produced for ecological assessment.

**Lighting Class**  
Spine road – P4, lit with post top mounted LED luminaires on 6m columns in line with the Wiltshire residential lighting specification (P4 requires average illuminance, Eav = 5 - 7.5 lux, Emin = 1 lux)  
Spine Road alongside railway and minor roads – P5, lit with post top mounted LED luminaires on 5m columns in line with the Wiltshire residential lighting specification (P5 requires average illuminance, Eav = 3 – 4.5 lux, Emin = 0.6 lux)  
Footpath - P5, lit with post top mounted LED luminaires on 4m fold down (mid-hinged) columns (P5 requires average illuminance, Eav = 3 – 4.5 lux, Emin = 0.6 lux)

**Maintenance Factor**  
The site is identified as an E2 zone  
MF = fLF x fS x fLM = 0.87, i.e.  
fLF - From table C2 in BS5489-1:2020, assuming 72 month cleaning - 0.92  
fS – 0.97  
fLM – 0.98 for Urbis Axia 3 at 100,000 hours

**Lighting Equipment**  
Luminaires are chosen from the standard "palette" of approved luminaires for Wiltshire Council.

**Light Source**  
In keeping with the strategy identified in the "lighting Impact assessment" report, all on-site lighting is proposed with a "very warm white" LED light source, having a colour corrected temperature (CCT) of 2700K. This has no UV wavelengths in the emitted spectrum and features minimal blue light content, often considered harmful to nocturnal species.

**Mitigation for Dark Zones**  
The adoptable road in this phase is termed "Northern Access Road" and links the spine road through phases 1 & 2 with a new junction with Drynham Road to the north. Much of this section of road runs parallel with a railway line and the lighting strategy treats the area between the road and railway as a "Dark Zone" for bats. The following mitigation is applied:  
Luminaires with a CCT of 2700 K are used throughout the scheme. This is as per the strategy presented at planning  
Luminaires are directed away from the dark zone and have backlight shields fitted.  
The visitor parking bays on the railway side of the road are not lit to standard.  
The Spine Road through Phases 1 & 2 is lit to P4. However, a lower lighting class of P5 is used near the dark zone to minimise the installed lighting. This is as the agreed planning layout.

**INSTALLATION NOTES**

Luminaires are to be dimmed to the standard Wiltshire residential dimming profile (elaxon switch code D19)

|               |             |
|---------------|-------------|
| Dusk TO 8 PM  | 100% Output |
| 8 PM TO 11 PM | 75% Output  |
| 11 PM TO 6 AM | 50% Output  |
| 6 AM TO Dawn  | 100% Output |

New lighting columns must be mounted in adoptable land  
Columns will usually be mounted towards the rear edge of the adoptable footpath.  
Columns in roads where there is no separate footpath will be mounted on a 1m x 1m adoptable pad, constructed to Wiltshire specifications. The column will be 0.8m setback from the kerb edge.

All new lighting columns will have an individual,unmetered electrical supply provided by an approved idno

**KEY TO ISOLUX CONTOURS**

|         |  |
|---------|--|
| 0.2 LUX |  |
| 0.5 LUX |  |
| 1 LUX   |  |
| 2 LUX   |  |
| 5 LUX   |  |
| 10 LUX  |  |
| 20 LUX  |  |

**GENERAL NOTES**

This drawing shows maintained illuminance levels .

This drawing must be printed in colour.

No part of the lighting shown on this drawing should be purchased or constructed until formal Technical Approval has been received from the local authority.

|     |                         |      |     |         |
|-----|-------------------------|------|-----|---------|
| P01 | Original for discussion | DPL  | SDL | 17.6.26 |
| Rev | DESCRIPTION             | DRWN | CHK | DATE    |

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**CLIENT/CUSTOMER**



**PROJECT**

ELM GROVE,  
TROWBRIDGE

**TITLE**

S38 STREET LIGHTING  
PHASE 3, CALCULATIONS

|       |            |           |
|-------|------------|-----------|
| DRAWN | SCALE      | DATE      |
| DPL   | 1:500 @ A1 | 17-6-2026 |

|                         |       |
|-------------------------|-------|
| DRAWING NUMBER          | ISSUE |
| P24896-DRG-S38-30 Sht 2 | P01   |

**DO NOT SCALE FROM THIS DRAWING**

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Horizontal Illuminance (lux)