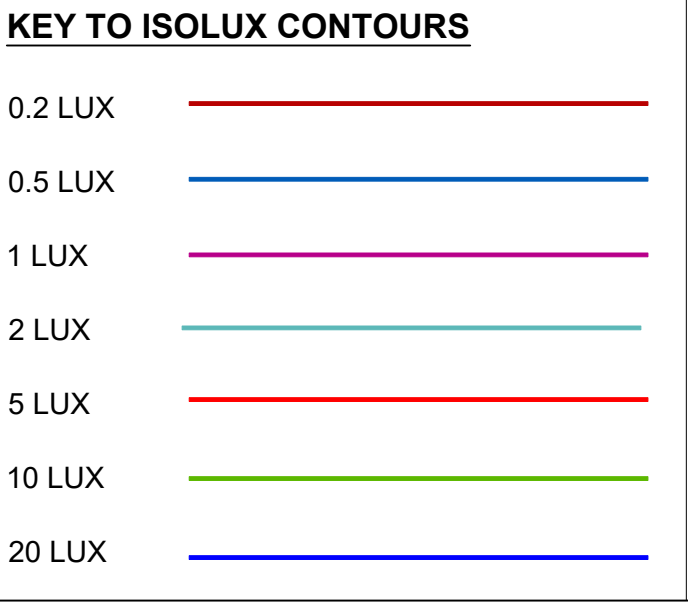
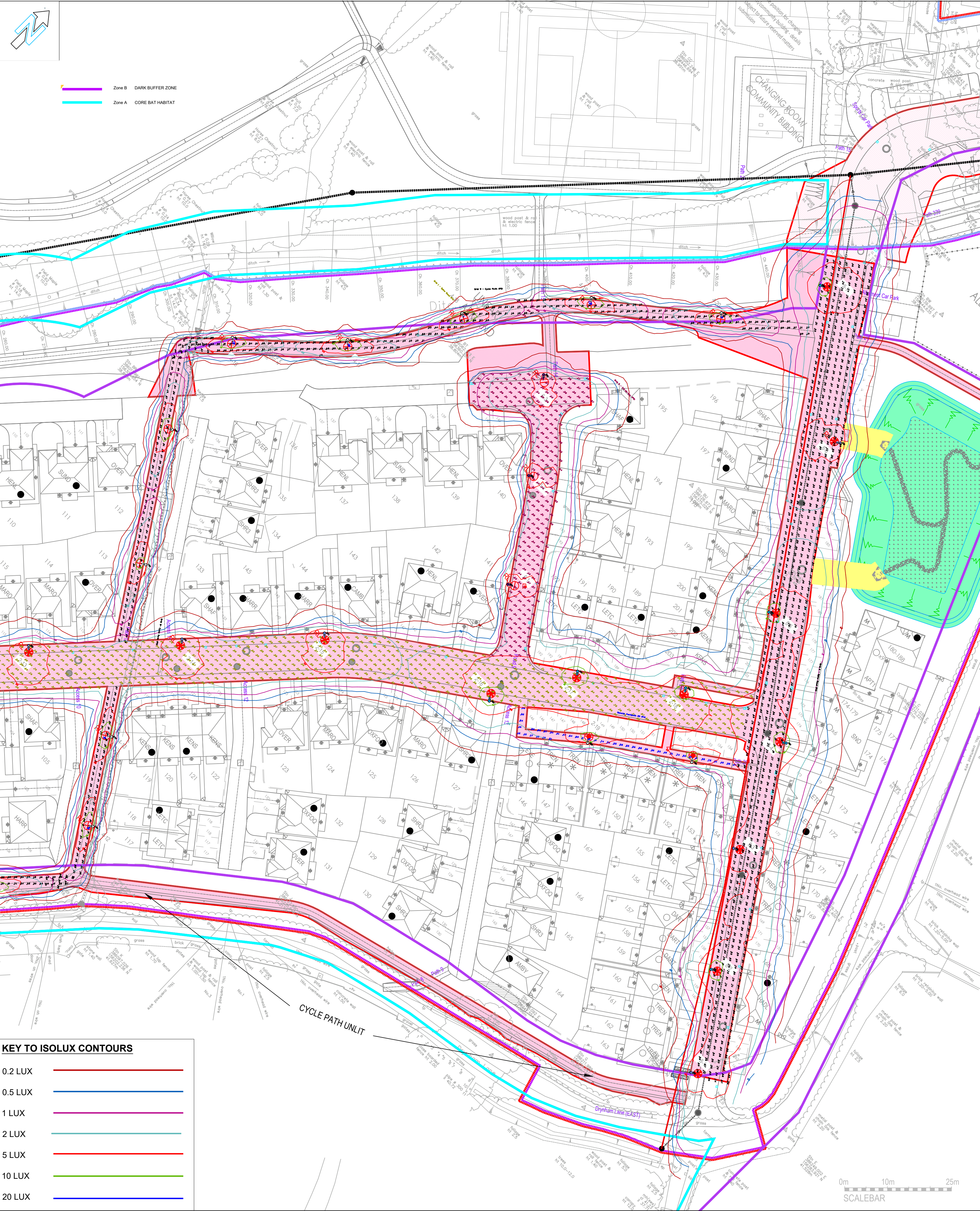




KEY TO LIGHTING SYMBOLS (S38 AREA)

PROPOSED NEW LIGHTING FOR 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 4m 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. ARROW ON SYMBOL INDICATES DIRECTION TO LOWER COLUMN FOR MAINTENANCE. Ref. AXIA 3.1 A1.0 27K BL
- 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. ARROW ON SYMBOL INDICATES DIRECTION TO LOWER COLUMN FOR MAINTENANCE. Ref. AXIA 3.1 A1.0 27K BL

LIGHTING FOR ADJOINING PHASES

- 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 6m ADAPTABLE 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 WITH SIDE LIGHT SHIELD FITTED TO THE SOUTH FACING SIDE, 540mA DRIVER AND 2.01km FLUX, Ref. AXIA 3.1 C2.0 27K SL
- 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 4m 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. ARROW ON SYMBOL INDICATES DIRECTION TO LOWER COLUMN FOR MAINTENANCE. Ref. AXIA 3.1 A1.0 27K BL

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 proposed lighting of on-site adoptable roads in phase 1 development only. Drawing P2489-S38-10 shows maintained calculated illuminance. Drawing P2489-S38-11 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)
Cul-de-sacs 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)
Note: 4m columns are lower than would normally be used in this area. These are proposed to minimise the visual impact and reduce overspill lighting to the "dark zone". This footpath runs within the defined buffer zone.

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
Luminaires with a CCT of 2700 K are used throughout the scheme. This is as per the strategy presented at planning. Luminaires are fitted with rear light shields where fittings back onto dark habitat.
Sidelight shields are used where required to ensure roads are lit as fully to standard as practicable, without contributing lighting to the dark zones. The cycle path/footpath running the south eastern site boundary is lit using 4m columns to help minimise spill light behind the fittings. These columns are within the buffer zone but luminaires are directed away from the dark zone and have backlight shields fitted. The lit section of cycle path runs along the site boundary as far as plot 117 where it turns north, into site and crossing the spine road. The remainder of the adoptable cycle path at the south east boundary to the east of plot 117 is unlit. This is as the agreed planning layout.

INSTALLATION NOTES

Luminaires are to be dimmed to the standard Wiltshire residential dimming profile (elxon 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 shared surface roads 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.
Columns lighting cycle path areas will be mounted on a 1m x 1m adoptable pad to Wiltshire specifications, with the column 0.5m setback from the kerb edge.
All new lighting columns will have an individual, unmetered electrical supply provided by an approved idno

LIGHTING REALITY AREA CALCULATION
Ref. P24896-LRA-05

Grid 1 - Spine Road (P4)
Results - Horizontal Illuminance (lux)
Eav= 5.20
Emin= 1.10
Emax= 13.06
Emin/Emax= 0.08
Emin/Eav= 0.21
Emax/Eav= 2.51

Grid 2 - Cul-de-sac (P5)
Results - Horizontal Illuminance (lux)
Eav= 3.54
Emin= 0.83
Emax= 9.38
Emin/Emax= 0.09
Emin/Eav= 0.23
Emax/Eav= 2.65

Remote Footpath 29 (P4)
Results - Horizontal Illuminance (lux)
Eav= 5.00
Emin= 1.21
Emax= 14.79
Emin/Emax= 0.08
Emin/Eav= 0.24
Emax/Eav= 2.96

Remote Footpath 25 (P4)
Results - Horizontal Illuminance (lux)
Eav= 5.71
Emin= 1.34
Emax= 13.00
Emin/Emax= 0.10
Emin/Eav= 0.23
Emax/Eav= 2.28

Grid 5 - Cul-de-sac (P5)
Results - Horizontal Illuminance (lux)
Eav= 3.41
Emin= 0.63
Emax= 7.59
Emin/Emax= 0.08
Emin/Eav= 0.19
Emax/Eav= 2.23

Grid 6 - Spine Road (P4)
Results - Horizontal Illuminance (lux)
Eav= 5.31
Emin= 1.21
Emax= 12.00
Emin/Emax= 0.10
Emin/Eav= 0.23
Emax/Eav= 2.26

Grid 7- Cycle Path 1 (P5)
Results - Horizontal Illuminance (lux)
Eav= 4.33
Emin= 0.61
Emax= 22.31
Emin/Emax= 0.03
Emin/Eav= 0.14
Emax/Eav= 5.15

Grid 8- Cycle Path (P5)
Results - Horizontal Illuminance (lux)
Eav= 4.75
Emin= 0.63
Emax= 23.43
Emin/Emax= 0.03
Emin/Eav= 0.13
Emax/Eav= 4.95

Grid 9 - Cycle Path (P5)
Results - Horizontal Illuminance (lux)
Eav= 4.75
Emin= 0.64
Emax= 21.30
Emin/Emax= 0.03
Emin/Eav= 0.13
Emax/Eav= 4.49

Grid 10
Results - Horizontal Illuminance (lux)
Eav= 2.98
Emin= 0.08
Emax= 13.83
Emin/Emax= 0.01
Emin/Eav= 0.03
Emax/Eav= 4.64

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	21.8.25
Rev	DESCRIPTION	DRWN	CHK	DATE

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CLIENT/CUSTOMER

REDROW

PROJECT

ELM GROVE,
TROWBRIDGE

TITLE

S38 STREET LIGHTING
PHASE 2, CALCULATIONS

DRAWN	SCALE	DATE
DPL	1:500 @ A1	19-8-2025

DRAWING NUMBER	ISSUE
P24896-DRG-S38-21	P01

DO NOT SCALE FROM THIS DRAWING

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