North Bradley, Trowbridge

Lighting Impact Assessment

19 June 2026

Project: 1816

Prepared For: Allison Homes SW Ltd

North Bradley, Trowbridge

Lighting Impact Assessment

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1.0	27.03.26	First Issue
2.0	19.06.26	Updated Site Plan

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Calculations and predictions of internal and external light spill to ecological dark zones rely on the accuracy of the lighting software, the modelling assumptions, and the implementation of the mitigation measures detailed in this report. The results should be viewed as predictions only, as they are subject to numerous variables. Therefore, although every effort has been taken to ensure the results are reliable, it cannot be guaranteed that the results calculated will be the same as in the real world. It is recommended that post monitoring is undertaken where dark zones are required to be maintained at certain levels of illuminance, and that allowance is made for further remedial action by the developer/ Client if required.

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1 Introduction

1.1 General

This Lighting Assessment is provided by The Lighting Bee Ltd, a specialist lighting design consultancy with experience and knowledge in lighting impact assessments, mitigation and lighting design in relation to light sensitive ecological receptors.

The author of this report is a fully qualified Lighting Designer and Chartered Electrical Engineer, with full membership of the Institution of Lighting Professionals, Society of Light and Lighting, and Chartered Institution of Building Services Engineers.

1.2 Scope of the Report

The Lighting Bee Ltd have been commissioned by Allison Homes SW Ltd to undertake a Lighting Impact Assessment for the proposed residential development at North Bradley, Trowbridge.

The aim of this Lighting Impact Assessment is to provide an assessment of the impact of the external, internal, and street lighting from the proposed development on sensitive ecological receptors. Lighting impacts in terms of obtrusive light are excluded from the scope of this report.

The S278 street lighting proposals are not included in this report, however a separate strategy has been provided.

Within this report the proposed land take area will be referred to as the ‘site’.

1.3 Structure of the Report

This report has been broken down into the following sections:

Section 2 - Outlines the proposed lighting strategy and describes the assessment methodology

Section 3 - Describes the proposed mitigation measures for the site

Section 4 - Considers the residual impacts of the proposed lighting strategy

Section 5 - Concludes the lighting impact assessment

1.4 Site Location

The site is located on land to the south of Bradley Road / A363, in Trowbridge, Wiltshire.

1.5 Key Sensitive Receptors

The south western, south eastern, and north eastern site boundaries have been identified as being ecologically sensitive, with dark corridors proposed along these boundaries in accordance with Bat Habitat Zone A (Trowbridge Bat Mitigation Strategy SPD).

For further information, refer to the Ecological Reports by GE Consulting.

2 Proposed Lighting

2.1 General

The site has been modelled and calculations provided, using industry standard software. The proposed dwellings (plots 1, 12-15, 19-20, 36-45, 49-53, 66-67) that are located adjacent to the proposed dark corridors have been modelled in detail, with internal lighting to establish the potential lighting impacts and establish any required mitigation measures.

Due to the configuration of the site layout, there is also potential for the proposed external private lighting to the front and rear of the above plots, and street lighting to the roads to impact on the dark zones. Therefore, this has been modelled and included in the assessment.

The lighting strategy and assessment process for each lighting element is outlined in the following sections.

An iterative process has been applied to establish the required mitigation measures, and therefore, results are not shown for each area/ scenario prior to mitigation. Section 3 details the mitigation measures that are deemed to be required and have been applied.

The calculation model is based on AutoCAD drawings provided by the Project Architect:

- Site Plan - drawing No. 10-100 Revision G dated 08.06.26
- Partnership 2025 House types received in DWG format dated 08.06.26 (Amberley, Burley, Charnley, Hartley, Loxley, Morley, Oatley, Radley, Totley)

2.2 Internal Lighting

The combined impact of internal light spill and the external building mounted lighting has been calculated using Dialux Evo Lighting Software. All dwellings adjacent to the proposed dark corridors have been modelled in 3D, including all glazed elements. Dialux Evo is a computer calculation package which utilises 3D modelling to model the real-world output of chosen light fittings. From these calculations, drawings illustrating the illuminance levels have been produced so that the lighting scheme's impact can be assessed.

Vertical calculation planes (4m in height) have been included to show predicted levels of illuminance along the proposed dark corridors. Along the north eastern boundary these are slightly set back behind the proposed hedge that forms the boundary to the dark corridor. Refer to Appendix A for a key plan showing the positions and references of the vertical calculation planes.

The calculation model (illustrated by illuminance levels on a drawing) does not include any proposed or existing planting/ hedgerows/ trees on site as vegetation without solid screening cannot be accurately modelled. The model does include close boarded fencing where it is proposed to be adjacent to the dark corridors.

The calculation model is intended to represent the worst case scenario, with internal lighting outputs calculated with all the luminaires switched on, and with no internal obstructions modelled, such as curtains or blinds. The calculations are based on the luminaires at full output, with a maintenance factor of 1, to represent the worst case scenario. The Visible Light Transmittance of the window glazing has been initially set to 80%, as this represents typical double glazing, however this was reduced to 40% to certain elevations during the assessment and mitigation process. Levels of internal design illuminance have been based on the requirements for communal residential buildings outlined in SLL Lighting Guide 9: Lighting for

communal residential buildings, as there are no set levels of design illuminance for private dwellings. Refer to Table 2.1

Levels of lighting were initially based on pendant lighting as this is typically provided. When modelling pendant luminaires, bare lamps have been modelled i.e. without shades to represent the worst case.

During the assessment process it was identified that a number of rooms with glazing facing towards the dark zones will require recessed lighting (down lights) to be provided instead of pendants to further reduce light spill to an acceptable level. Typical downlights with beam angles of 30-40 degrees have been modelled where required. Refer to Section 3 for full details of the mitigation measures applied.

Table 2.1 Levels of design illuminance from SLL Lighting Guide 9: Lighting for communal residential buildings

Room Type	Level of Design Illuminance (lux)
Kitchen	200
Dining	150
Lounge	100
Hall / Stairs	100
Bathroom	150
Toilet	100
Bedroom	100

The images below show the 3D calculation model for the site.

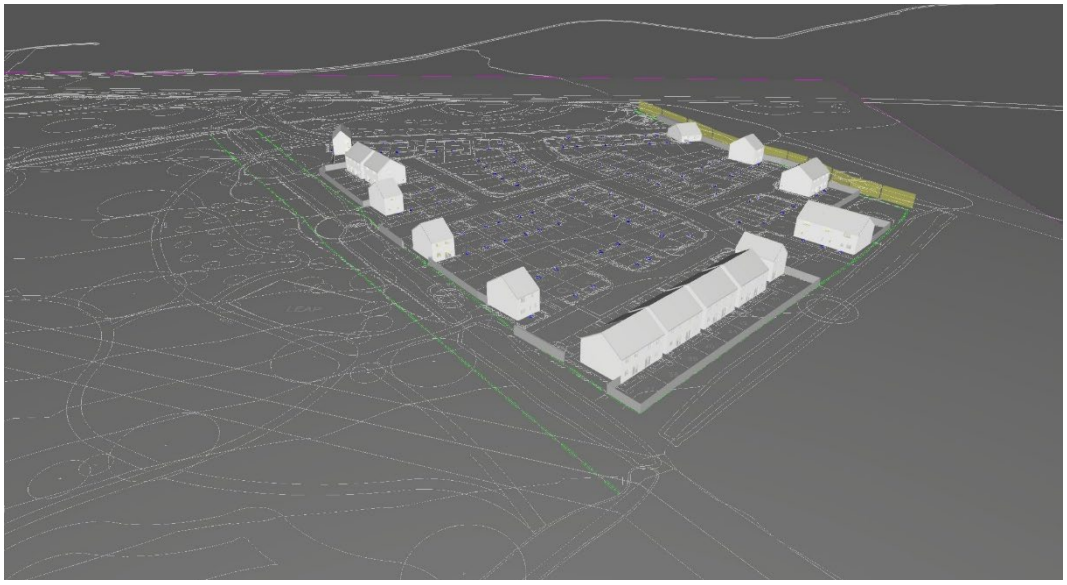

Figure 2.1: 3D view of the calculation model – viewed facing north

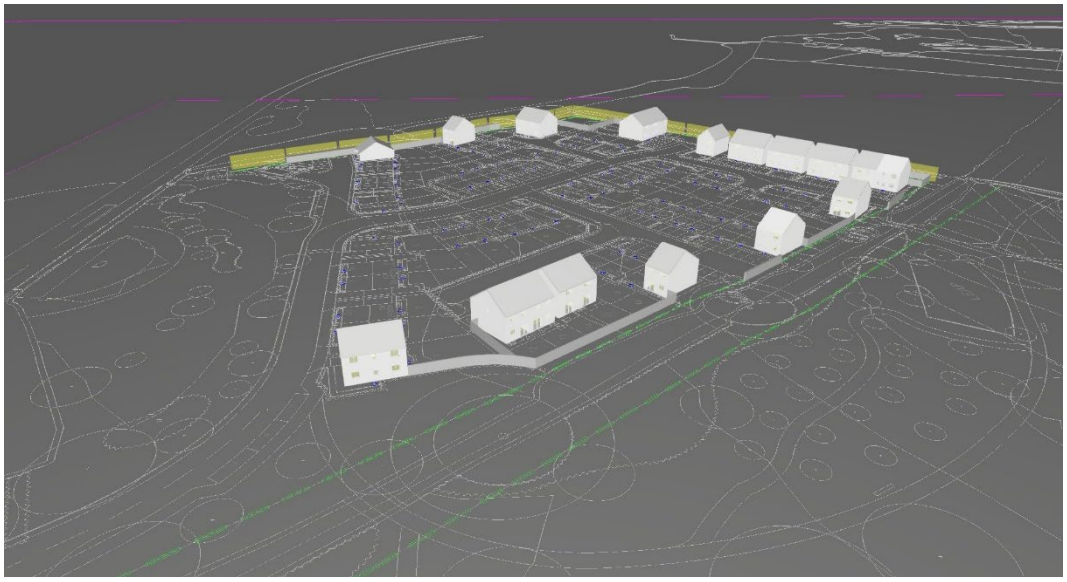

Figure 2.2: 3D view of the calculation model – viewed facing east

The results from the calculation model produces the isolines detailed on the accompanying drawing, shown in Appendix C, which represent levels of illuminance at ground level.

Results have also been produced to show the levels of illuminance falling on vertical calculation planes placed along the edge of the proposed dark corridors. Refer to Appendix A, for the locations and references related to the vertical calculation planes, and Appendix C for the results.

2.3 Street Lighting Strategy

An indicative section 38 street lighting strategy has been prepared for the planning application stage for the development.

The adoptable street lighting has been designed in accordance with BS 5489 / BS EN 13201 and the requirements and specification from Wiltshire County Council. This is with the exception of the north eastern S38 turning area, where no street lighting is proposed due to the locations of the proposed dark corridor. This area is shown on the plan in Appendix E.

The spine road into the site has been designed to a P4 class, with the remaining subsidiary roads designed to a P5 class. The design parameters for a P4 class are 5.0 lux average horizontal illuminance, with a minimum illuminance of 1 lux. The design parameters for a P5 class are 3.0 lux average horizontal illuminance, with a minimum illuminance of 0.60 lux.

The luminaires selected for the street lighting are Axia 3.1 LED luminaires manufactured by Urbis, as specified Wiltshire County Council. The S38 streetlights will have 2700K warm white colour temperature, with the exception of the first light at the site access which will be 3000K to tie in the S278 junction lighting. Luminaires are proposed to be mounted on 6m columns to the spine road, and 5m columns to the subsidiary roads. The first light at the site access is proposed be mounted on an 8m column to light the junction.

Integral back light shields (louvres) have been specified to the luminaires where necessary, to minimise the impacts on to the dark corridors required for bats.

These luminaires have good light control and cut off angles to reduce light spillage, control glare and limit sky glow. The specified luminaires for the street lighting all have 0% Upward Light Output Ratio (ULOR).

It is expected that the S38 adoptable street lighting will operate on a dimming regime, where the street lights will dim from 100% at dusk, to 70% between 8pm and 11pm, to 50% between 11pm and 6am, and then back to 100% from 6am until dawn. (The street lighting design and controls will be subject to Wiltshire County Council's approval, in accordance with their requirements and policies, and will require approval at the technical design stage/ S38 approval stage.)

Refer to Appendix E for the Section 38 Street Lighting Strategy.

2.4 External Private Lighting to the Dwellings

An external wall mounted light with integrated PIR (movement) detection for operation is generally proposed to the front and rear of each dwelling. There are instances where the rear light is proposed to be omitted to provide further mitigation to meet the dark corridor requirements.

Downward directional wall lights have been specified to minimise the lighting impacts on bats. The luminaires will utilise GU10 lamps and the developer will fit LED lamps with a warm white colour temperature of 2700K.

The external lighting has been specified in accordance with the recommendations within the Institution of Lighting Professionals (ILP) and Bat Conservation Trust (BCT) (2023) Guidance Note 08/ 23 Bats and Artificial Lighting in the UK.

These luminaires are included in the calculation model. Refer to Appendix D.

Manufacturers information for the downward directional wall light that the calculations are based on is shown in Appendix H.

2.5 Impact Assessment and Significance Criteria

The significance of effect will be informed by considering the level of illuminance predicted at the edge of the dark zone proposed corridors / Bat Habitat Zone A. Refer to Appendix A for proposed dark corridor locations.

In accordance with the Bats and Artificial Lighting in the UK (2023) guidance, levels of illuminance will be calculated horizontally at ground level, and on the vertical calculation planes 4m in height.

Illuminance levels of ≤ 0.2 lux on the horizontal plane, and ≤ 0.4 lux on the vertical plane are targeted.

Illuminance levels of greater than 0.5 lux horizontally at ground level and vertically up to 2m in height are considered to be significant.

3 Mitigation Measures

Mitigation of the effects of the lighting installation during the operational phase will be achieved by providing the proposed lighting and mitigation measures outlined in this report.

The mitigation measures included are summarised below. Also, refer to the Lighting Mitigation Plan in Appendix G:

- Recessed downlight luminaires to be provided to a number of rooms with glazed apertures that are adjacent to the proposed dark areas and corridors. A full list of the plots and rooms where recessed lighting is required is given below. (Typically, downlight luminaires used, and sold for use, in residential properties will have beam angles of 30-40 degrees. The recessed nature of downlights, and smaller beam angles reduces light spill, compared with pendant luminaires.)

  Plot 1 – Ground Floor: Kitchen/ Dining, Living, Hall, First Floor: Bedroom 1, Bedroom 2, Bathroom

  Plot 12, 13, 39 ,40, 41, 42, 43, 44 – Ground Floor: Living First Floor: Bedroom 2, Bedroom 3, Bathroom

  Plot 14, 15 – Ground Floor: Dining/ Living Frist Floor: Bedroom 2, Bathroom

  Plot 19 – Ground Floor: Kitchen/ Dining, Living, Hall, First Floor: Bedroom 2, Bedroom 3

  Plot 20, 36, 37– Ground Floor: Kitchen, Dining/ Living, Hall, WC, First Floor: Bedroom 1, Bedroom 2, Bedroom 3, Bathroom

  Plot 38 – Ground Floor: Dining/ Living, First Floor: Bedroom 1, Bedroom 3

  Plot 45 – Ground Floor: Kitchen/ Dining, Hall, First Floor: Bedroom 2, Bedroom 3, Bathroom

  Plot 50, 51 – Ground Floor: Kitchen, Dining, Living, Hall, First Floor: Bedroom 1, Bedroom 2

  Plot 52, 53 – Ground Floor: Living First Floor: Bedroom 2, Bedroom 3

  Plot 66 – Ground Floor: Bedroom 1, Bathroom, Hall

  Plot 67 – Ground Floor: Kitchen/ Dining, Hall, First Floor: Bedroom 1

  Plots 19, 51, 53 & 67 – Gable end windows removed (Bathrooms)

- The glazing transmittance to all glazed apertures in the elevations of the plots shown on the Mitigation Strategy in Appendix H will be reduced and limited to 40% Visible Light Transmittance (VLT or TViz). (Typical standard double glazing has a visible light transmittance of 80%).

- Private external lighting will be minimal and limited to building mounted lighting only, as shown on the External Lighting Strategy Drawing in Appendix D. Generally lighting has been provided to the front and rear entrances of each dwelling, with the exception of rear lighting to some plots that are adjacent to the proposed dark corridors, which has been omitted.

- No additional external lighting should be installed. It is recommended that covenants or conditions are put in place to prevent the external lighting being added or altered in the future.

- All external lighting to be downward directional, with 0% upward light output.
- All external lighting to utilise LED lamps with a warm white colour temperature of 2700K.
- Building mounted external lighting will operate via PIR (movement) detectors on short (1 minute) timers.
- 1.8m close boarded fencing, or 2m high hedge banks with temporary fencing, will be provided to block light spill in the locations shown on the Mitigation plan in Appendix G.

Further mitigation measures beyond this are not deemed to be required.

4 Predicted Impacts from Artificial Lighting

Light spill from the combined internal and external calculated at the edge of the proposed dark corridors is predicted to be ≤0.2 lux horizontally at ground level, and ≤ 0.4 lux vertically on the calculation planes (up to 4m in height) included. This is with the exception of two areas. One area is near the site entrance, caused by the street lighting required to the access/ spine road, at Vertical Plane location 31, where a maximum level of 1.30 lux is predicted. The other area is to the south of the site where potential access to future development is proposed, at Vertical Plane locations 13, 14 & 15 where a maximum level of 5.33 lux is predicted. Mitigation has been applied to both of these areas to minimise the impacts as far as possible.

It should also be noted that along the north eastern boundary the targeted levels are achieved behind the proposed hedge that forms the boundary to the dark corridor, which is indicated by the vertical calculation planes which are slightly set back from the dark corridor demarcation.

It should be noted that the calculation model represents the worst case scenario, with all lights switched on simultaneously, and no blinds or curtains included, and the screening effect of any vegetation and planting not being included, therefore levels of illuminance will be further reduced when these factors are taken into account. The street lighting will be dimmed as described, and external lighting will operate on short PIR timers.

For consideration of significance of effect refer to the Ecological Assessment provided by GE Consulting.

The images below show the calculation model and summarise the results. Refer to the drawing showing levels of illuminance predicted horizontally at ground level in Appendix B, and the vertical plane calculation results in Appendix C for further detail.

Figure 4.1: False Colour scale – levels of illuminance measured in Lux. For ease, levels above 0.5 lux are coloured, and levels below 0.5 lux are show in shades of grey/black

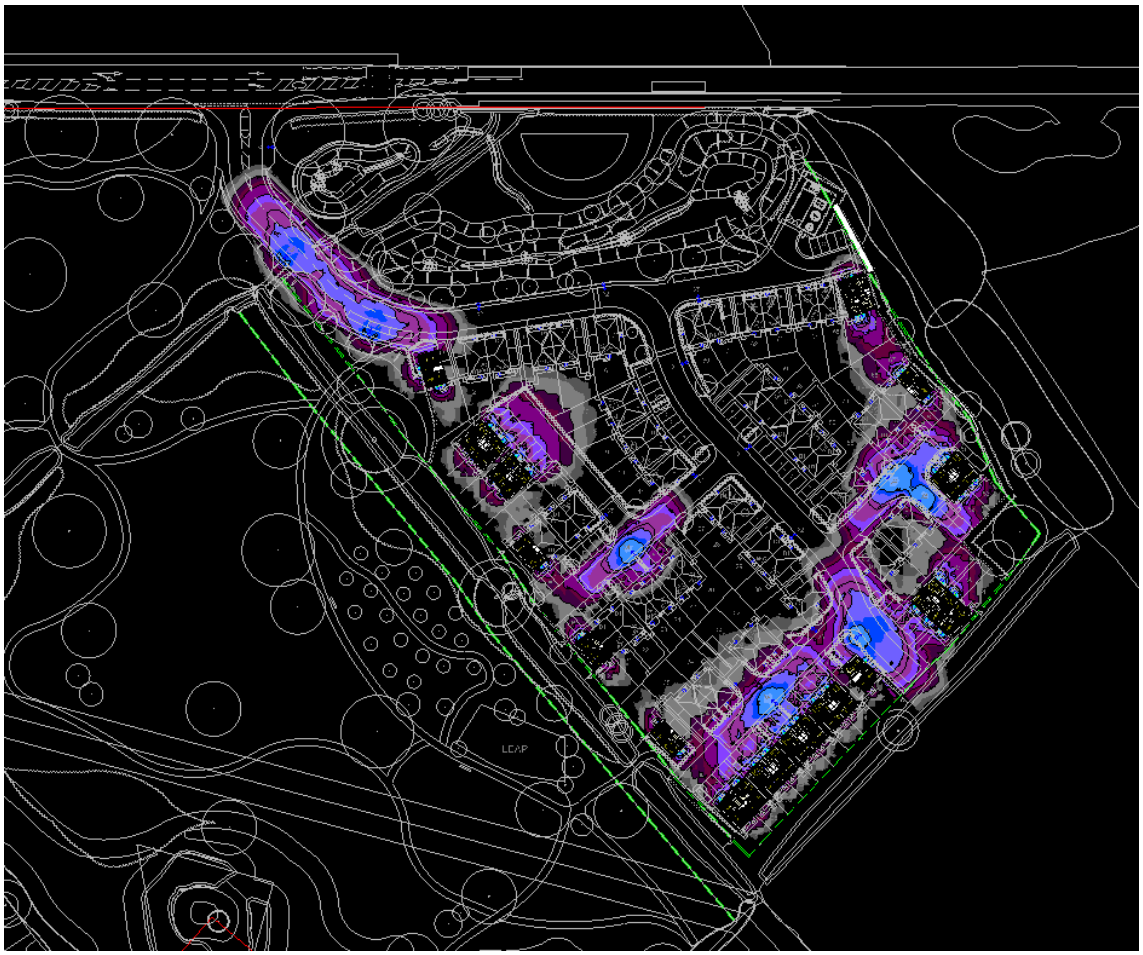

Figure 4.2: Plan view of the calculation model – (Note the combined model shown only includes lighting that has the potential to impact on the proposed dark corridors)

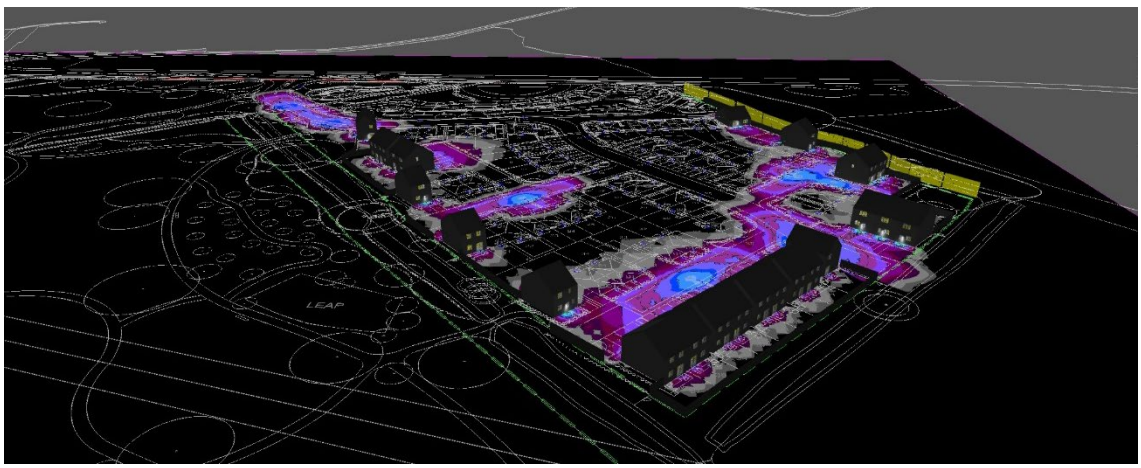

Figure 4.3: 3D view of the calculation model – viewed facing north

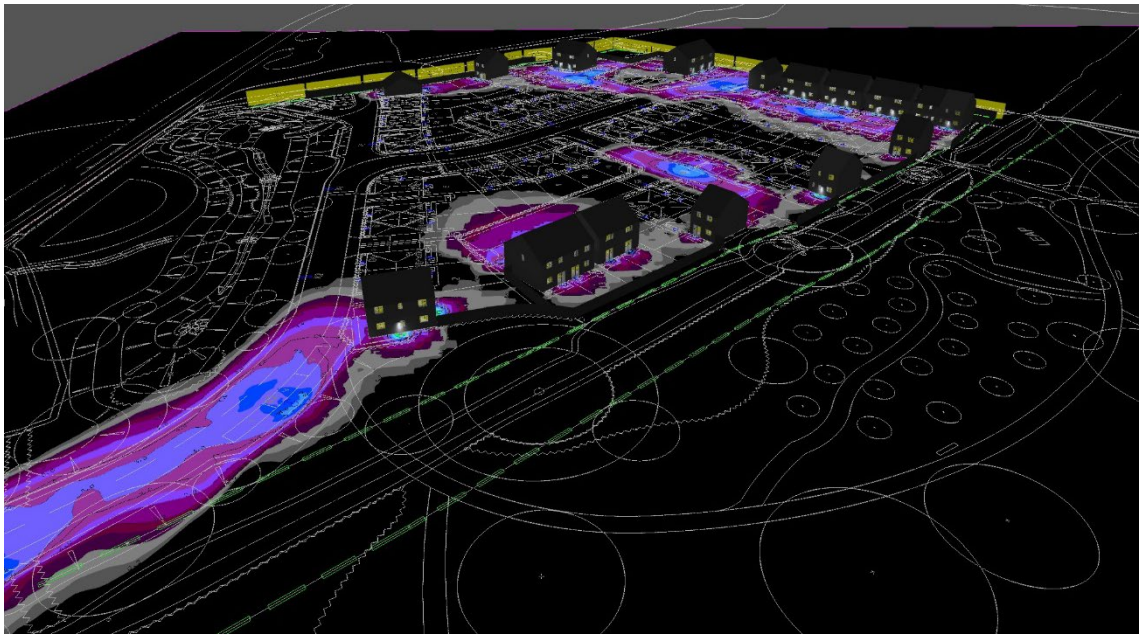

Figure 4.4: 3D view of the calculation model – viewed facing east

5 Conclusion / Summary

The aim of this Lighting Impact Assessment is to provide an assessment of the impact of the external, internal, and street lighting from the proposed development on sensitive ecological receptors. Lighting impacts in terms of obtrusive light are excluded from the scope of this report.

The S278 street lighting proposals are not included in this report, however a separate strategy has been provided.

The south western, south eastern, and north eastern site boundaries have been identified as being ecologically sensitive, with dark corridors proposed along these boundaries in accordance with Bat Habitat Zone A (Trowbridge Bat Mitigation Strategy SPD).

This Lighting Impact Assessment is based on the adoption of the internal, external and street lighting strategy and mitigation measures, including criteria, luminaries, switching methods, lamp types, etc. outlined in this report.

The site has been modelled and calculations provided, using industry standard software. The impact of light spill from internal and external lighting has been calculated using Dialux Evo Lighting Software.

Light spill from the combined internal and external calculated at the edge of the proposed dark corridors is predicted to be ≤0.2 lux horizontally at ground level, and ≤ 0.4 lux vertically on the calculation planes (up to 4m in height) included. This is with the exception of two areas. One area is near the site entrance, caused by the street lighting required to the access/ spine road, at Vertical Plane location 31, where a maximum level of 1.30 lux is predicted. The other area is to the south of the site where potential access to future development is proposed, at Vertical Plane locations 13, 14 & 15 where a maximum level of 5.33 lux is predicted. Mitigation has been applied to both of these areas to minimise the impacts as far as possible.

It should also be noted that along the north eastern boundary the targeted levels are achieved behind the proposed hedge that forms the boundary to the dark corridor, which is indicated by the vertical calculation planes which are slightly set back from the dark corridor demarcation.

It should be noted that the calculation model represents the worst case scenario, with all lights switched on simultaneously, and no blinds or curtains included, and the screening effect of any vegetation and planting not being included, therefore levels of illuminance will be further reduced when these factors are taken into account. The street lighting will be dimmed as described, and external lighting will operate on short PIR timers.

For consideration of significance of effect refer to the Ecological Assessment provided by GE Consulting.

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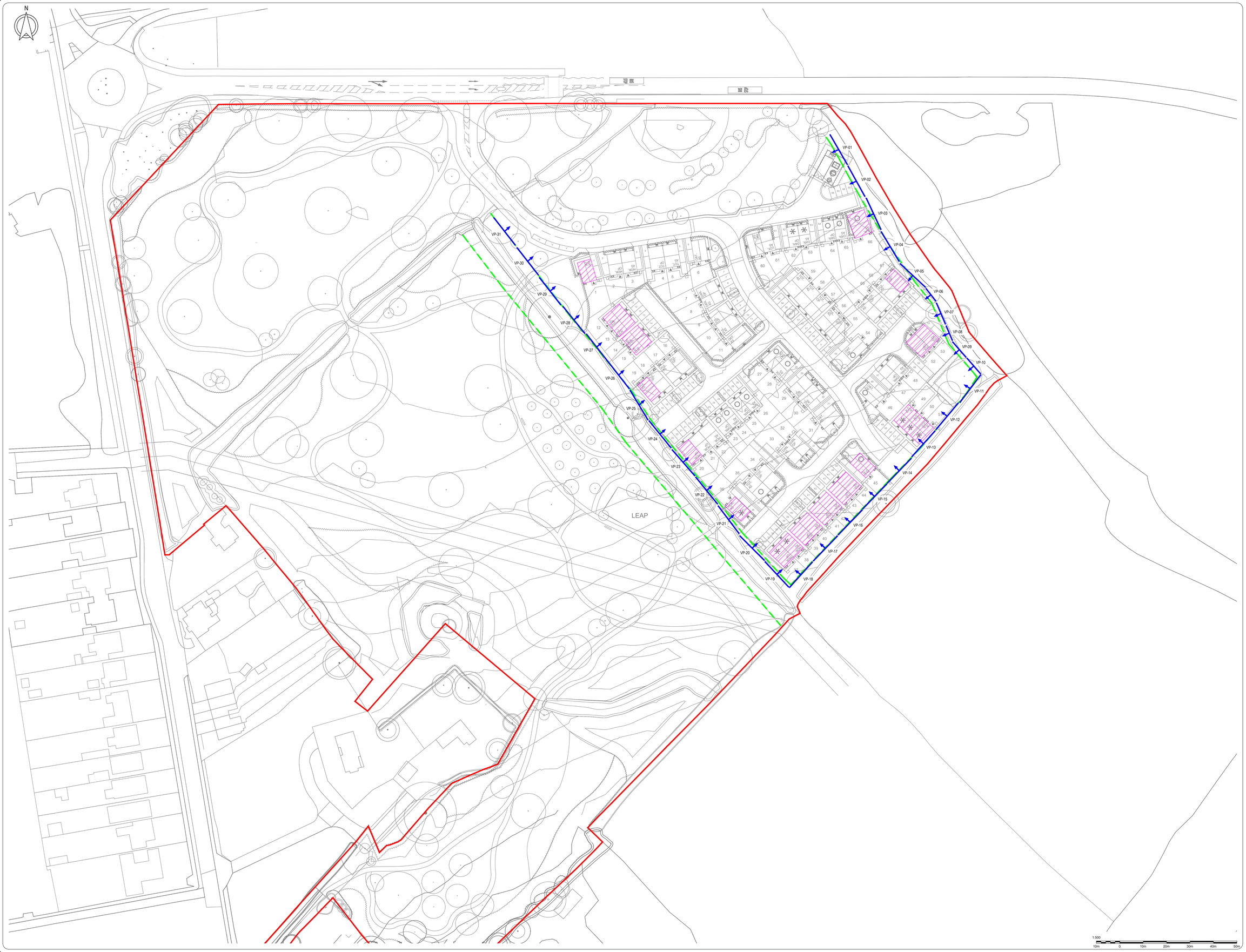
Key Plan Showing Locations and References for Vertical Calculation Planes

APPENDIX A

A0 - Scale for Planning Purposes Only



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Legend

- Buildings that have been modeled to assess light spill from internal lighting
- VPXX — Vertical calculation plane - reference and direction denoted
- Application Boundary
- Bat Habitat Zone A - Proposed dark corridor - ≤0.2 Lux horizontally at ground level and ≤0.4 Lux vertically from ground level up to a height of 4m targeted

Notes

1. The vertical calculation planes are 4m high. Refer to plane for length of each vertical calculation plane.
2. This drawing should be read in conjunction with the Lighting Impact Assessment report. Refer to the vertical calculation results in the appendices of this report.
3. Scaled for planning purposes only.
4. All measurements are in millimeters unless stated otherwise.

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Rev	Details:	By / Reviewed	Date

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CLIENT
ALLISON HOMES

PROJECT TITLE
Land South A363
North Bradley, Trowbridge

DRAWING TITLE
Lighting Impact Assessment
Key Plan Showing Locations and References for Vertical Calculation Planes

SCALE AT A0
1:500

DISCIPLINE
Lighting

DRAWING NUMBER
1816-LB-EX-XX-DR-E-7080-01
Project - Originator - Zone - Level - Type - Role - NBS class - Sequential Number

STATUS
Preliminary

ISSUE
P01

1:500
10m 0 10m 20m 30m 40m 50m

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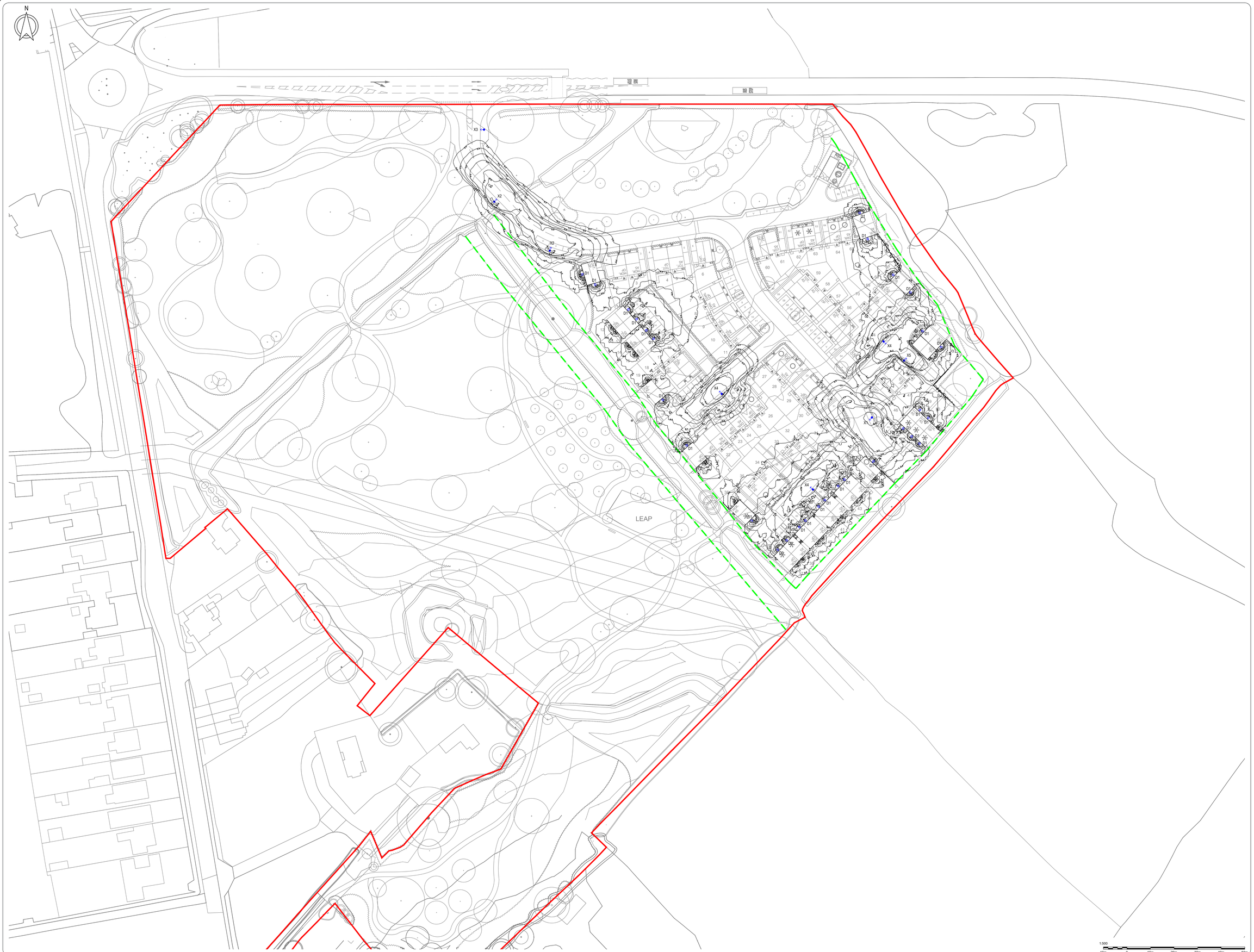
Site Plan Showing Levels of Horizontal Illuminance at Ground Level – from Combined Light Spill from Internal and External Lighting

APPENDIX B

A0 - Scale for Planning Purposes Only



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S38 Luminaire Legend

X1 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 6m fixed column, post top mounted with 0° tilt, complete with C3.5 optic. As Urbis Schreder Axia 3.1, 16 LED, 460mA (3.50klm) C3.5 optic or equal and approved.

X2 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 6m fixed column, post top mounted with 0° tilt, complete with C3.5 optic and integral rear louvre. As Urbis Schreder Axia 3.1, 16 LED, 460mA (3.50klm) C3.5 optic with integral rear louvre or equal and approved.

X3 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 8m fixed column, post top mounted with 0° tilt, complete with E8.4 optic. As Urbis Schreder Axia 3.2, 32 LED, 580mA (7.80klm) E8.4 optic or equal and approved.

X4 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 5m fixed column, post top mounted with 0° tilt, complete with B2.0 optic. As Urbis Schreder Axia 3.1, 8 LED, 540mA (2.01klm) B2.0 optic or equal and approved.

X5 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 5m fixed column, post top mounted with 0° tilt, complete with B2.0 optic and integral rear louvre. As Urbis Schreder Axia 3.1, 8 LED, 540mA (2.01klm) B2.0 optic with integral rear louvre or equal and approved.

Private (Dwelling) Luminaire Legend

D1 — IP44 rated, downward directional wall luminaire, mounted at 1.8m AFFL with integrated PIR movement sensor. As Green Lighting PIR Wall Light GL-203/BLK or equal and approved.
Fitted with a GU10 lamp holder. Developer to provide an LED 2700K (355lm / 5.5W) lamp to be installed.

(Photometric data for calculation purposes is based on bare lamps, as photometric data for the entire luminaires are not available.)

Legend

- Application Boundary
- Bat Habitat Zone A - Proposed dark corridor - ≤0.2 Lux horizontally at ground level and ≤0.4 Lux vertically from ground level up to a height of 4m targeted

Notes

1. This drawing has been provided to show the predicted impact from the combined internal and external lighting proposed. Only the lighting that has the potential to impact on the proposed dark zones has been modelled.
2. Luminaire positions are indicative and will be subject to final site layout.
3. Levels of illuminance are calculated and shown at ground level. Calculations are based on luminaires at full output/ maintenance factor = 1 to represent the worst case scenario.
4. The figures shown on the contours represent levels of illuminance measured in lux. Lux contours are shown down to a value of 0.2 lux.
5. Refer to the Street Lighting Strategy drawing for full details of the proposed Street Lighting.
6. Refer to the External Lighting Strategy drawing for full details of the proposed External Lighting.
7. This drawing should be read in conjunction with the Lighting Impact Assessment report.
8. Refer to accompanying Designers Risk Assessment for design risks identified.
9. Scaled for planning purposes only.
10. All measurements are in millimeters unless stated otherwise.
11. All symbols used are generic and should not be considered as true representations of size or dimensions of actual luminaires.

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Rev	Details:	By / Reviewed	Date

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CLIENT
ALLISON HOMES

PROJECT TITLE
Land South A363
North Bradley, Trowbridge

DRAWING TITLE
Lighting Impact Assessment
Levels of Horizontal Illuminance Shown at Ground Level from Internal & External Lighting Full Output Shown (MF=1)

SCALE AT A0
1:500

DISCIPLINE
Lighting

DRAWING NUMBER
1816-LB-EX-XX-DR-E-7080-11
Project - Originator - Zone - Level - Type - Role - NBS class - Sequential Number

STATUS
Preliminary

ISSUE
P01

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Results for Levels of Illuminance on Vertical Calculation Planes – from Combined Light Spill from Internal and External Lighting

APPENDIX C

(Light scene 1)

Vertical Plane 1

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 1 Perpendicular illuminance (adaptive) Height: 2.000 m	0.066 lx	0.051 lx	0.075 lx	0.77	0.68

(Light scene 1)

Vertical Plane 2

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 2 Perpendicular illuminance (adaptive) Height: 2.000 m	0.068 lx	0.023 lx	0.20 lx	0.34	0.12

(Light scene 1)

Vertical Plane 3

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 3 Perpendicular illuminance (adaptive) Height: 2.000 m	0.049 lx	0.017 lx	0.12 lx	0.35	0.14

(Light scene 1)

Vertical Plane 4

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 4 Perpendicular illuminance (adaptive) Height: 2.000 m	0.16 lx	0.064 lx	0.18 lx	0.40	0.36

(Light scene 1)

Vertical Plane 5

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 5 Perpendicular illuminance (adaptive) Height: 2.000 m	0.096 lx	0.018 lx	0.31 lx	0.19	0.058

(Light scene 1)

Vertical Plane 6

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 6 Perpendicular illuminance (adaptive) Height: 2.000 m	0.14 lx	0.048 lx	0.27 lx	0.34	0.18

(Light scene 1)

Vertical Plane 7

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 7 Perpendicular illuminance (adaptive) Height: 2.000 m	0.093 lx	0.032 lx	0.17 lx	0.34	0.19

(Light scene 1)

Vertical Plane 8

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 8 Perpendicular illuminance (adaptive) Height: 2.000 m	0.15 lx	0.030 lx	0.28 lx	0.20	0.11

(Light scene 1)

Vertical Plane 9

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 9 Perpendicular illuminance (adaptive) Height: 2.000 m	0.22 lx	0.022 lx	0.29 lx	0.100	0.076

(Light scene 1)

Vertical Plane 10

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 10 Perpendicular illuminance (adaptive) Height: 2.000 m	0.16 lx	0.098 lx	0.20 lx	0.61	0.49

(Light scene 1)

Vertical Plane 11

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 11 Perpendicular illuminance (adaptive) Height: 2.000 m	0.19 lx	0.074 lx	0.26 lx	0.39	0.28

(Light scene 1)

Vertical Plane 12

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 12 Perpendicular illuminance (adaptive) Height: 2.000 m	0.16 lx	0.037 lx	0.31 lx	0.23	0.12

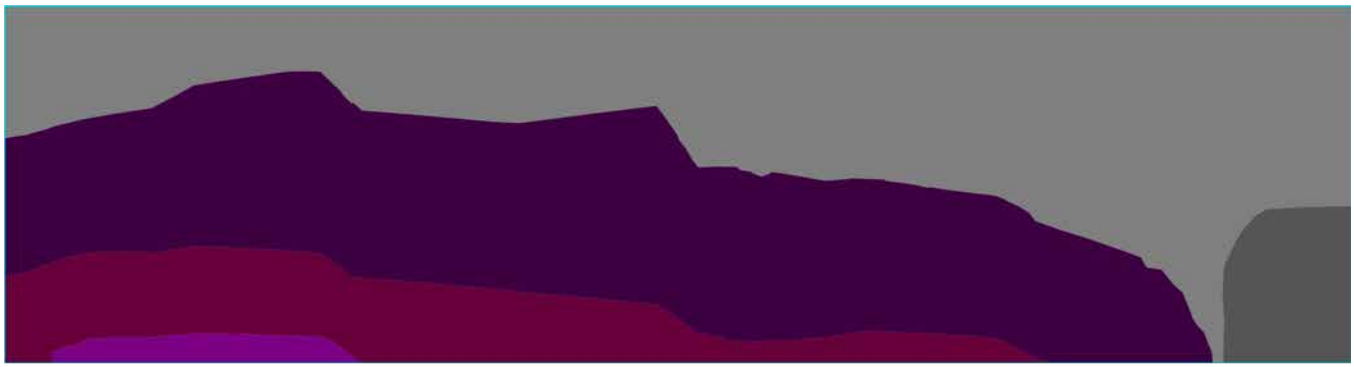
(Light scene 1)

Vertical Plane 13

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 13 Perpendicular illuminance (adaptive) Height: 2.000 m	0.41 lx	0.11 lx	1.12 lx	0.27	0.098

(Light scene 1)

Vertical Plane 14



Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 14 Perpendicular illuminance (adaptive) Height: 2.000 m	0.55 lx	0.22 lx	1.06 lx	0.40	0.21

(Light scene 1)

Vertical Plane 15

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 15 Perpendicular illuminance (adaptive) Height: 2.000 m	0.17 lx	0.080 lx	0.31 lx	0.47	0.26

(Light scene 1)

Vertical Plane 16

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 16 Perpendicular illuminance (adaptive) Height: 2.000 m	0.10 lx	0.008 lx	0.17 lx	0.080	0.047

(Light scene 1)

Vertical Plane 17

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 17 Perpendicular illuminance (adaptive) Height: 2.000 m	0.13 lx	0.025 lx	0.17 lx	0.19	0.15

(Light scene 1)

Vertical Plane 18

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 18 Perpendicular illuminance (adaptive) Height: 2.000 m	0.12 lx	0.030 lx	0.18 lx	0.25	0.17

(Light scene 1)

Vertical Plane 19

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 19 Perpendicular illuminance (adaptive) Height: 2.000 m	0.030 lx	0.015 lx	0.034 lx	0.50	0.44

(Light scene 1)

Vertical Plane 20

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 20 Perpendicular illuminance (adaptive) Height: 2.000 m	0.16 lx	0.003 lx	0.39 lx	0.019	0.008

(Light scene 1)

Vertical Plane 21

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 21 Perpendicular illuminance (adaptive) Height: 2.000 m	0.18 lx	0.082 lx	0.38 lx	0.46	0.22

(Light scene 1)

Vertical Plane 22

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 22 Perpendicular illuminance (adaptive) Height: 2.000 m	0.15 lx	0.059 lx	0.18 lx	0.39	0.33

(Light scene 1)

Vertical Plane 23

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 23 Perpendicular illuminance (adaptive) Height: 2.000 m	0.099 lx	0.030 lx	0.36 lx	0.30	0.083

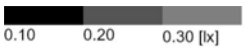
(Light scene 1)

Vertical Plane 24

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 24 Perpendicular illuminance (adaptive) Height: 2.000 m	0.19 lx	0.008 lx	0.38 lx	0.042	0.021

(Light scene 1)

Vertical Plane 25



Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 25 Perpendicular illuminance (adaptive) Height: 2.000 m	0.14 lx	0.090 lx	0.29 lx	0.64	0.31

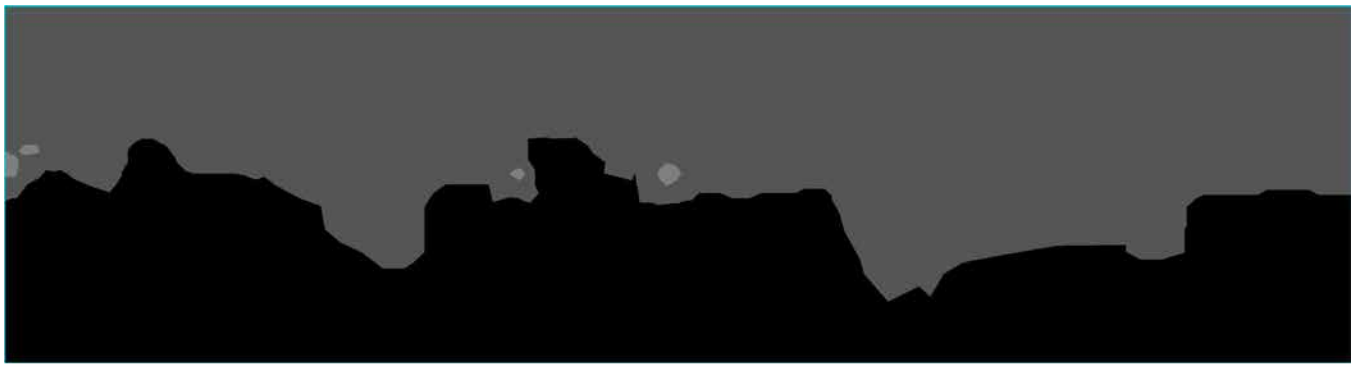
(Light scene 1)

Vertical Plane 26

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 26 Perpendicular illuminance (adaptive) Height: 2.000 m	0.15 lx	0.037 lx	0.21 lx	0.25	0.18

(Light scene 1)

Vertical Plane 27



Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 27 Perpendicular illuminance (adaptive) Height: 2.000 m	0.20 lx	0.046 lx	0.30 lx	0.23	0.15

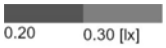
(Light scene 1)

Vertical Plane 28

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 28 Perpendicular illuminance (adaptive) Height: 2.000 m	0.11 lx	0.089 lx	0.12 lx	0.81	0.74

(Light scene 1)

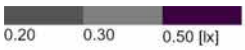
Vertical Plane 29



Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 29 Perpendicular illuminance (adaptive) Height: 2.000 m	0.20 lx	0.18 lx	0.25 lx	0.90	0.72

(Light scene 1)

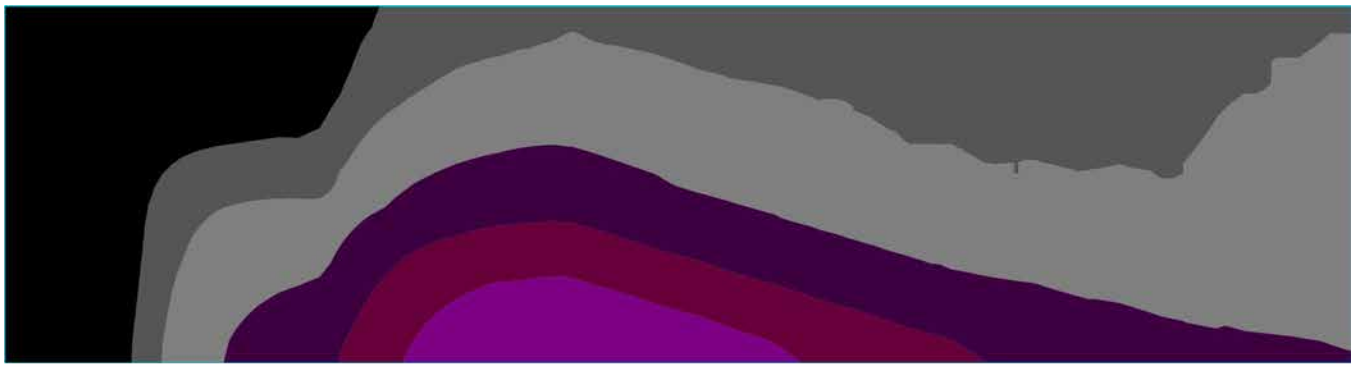
Vertical Plane 30



Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 30 Perpendicular illuminance (adaptive) Height: 2.000 m	0.23 lx	0.17 lx	0.32 lx	0.74	0.53

(Light scene 1)

Vertical Plane 31



Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2
Vertical Plane 31 Perpendicular illuminance (adaptive) Height: 2.000 m	0.42 lx	0.15 lx	1.29 lx	0.36	0.12

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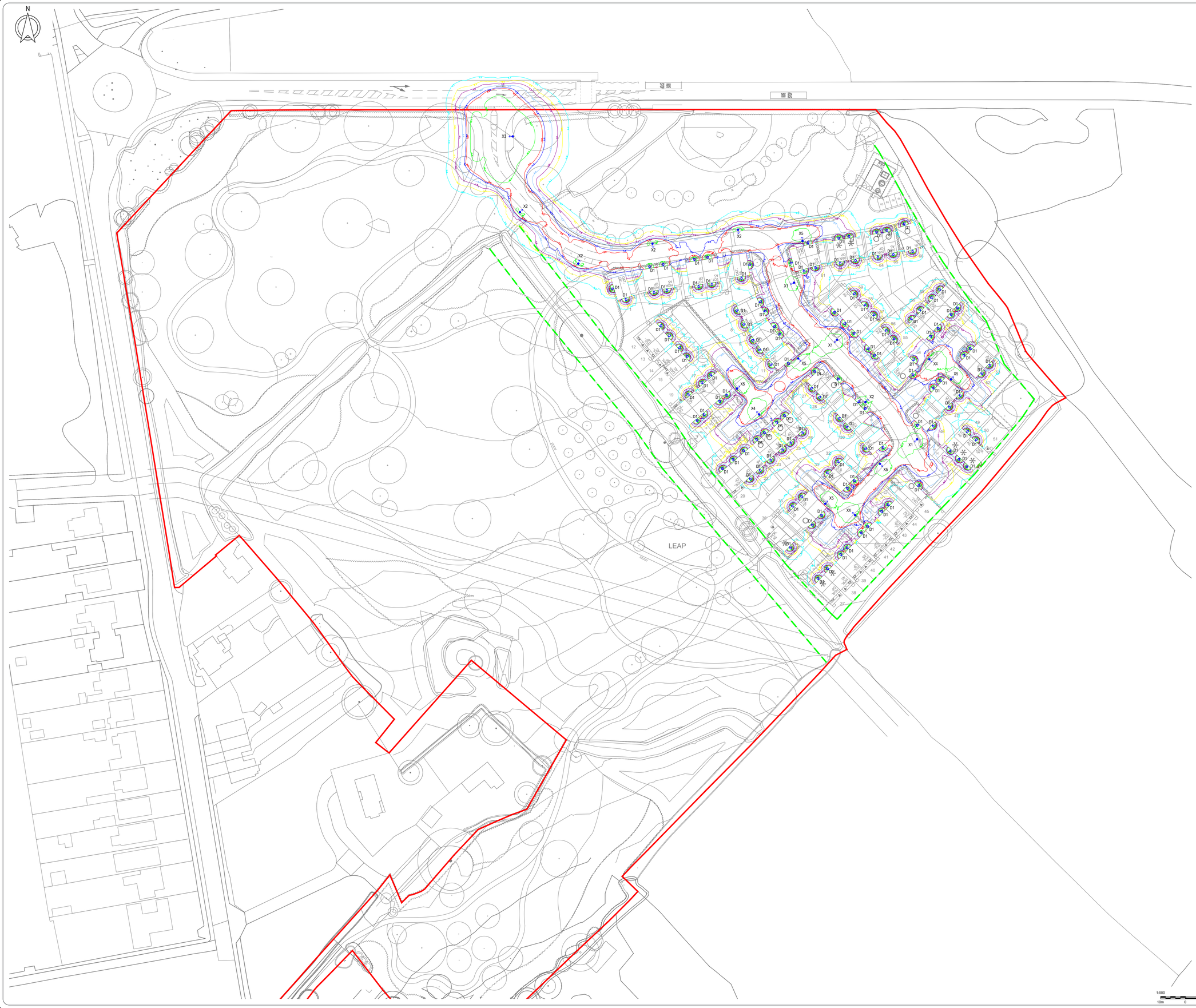
Site Plan Showing Levels of Horizontal Illuminance at Ground Level – from External Lighting Only

APPENDIX D

A0 - Scale for Planning Purposes Only



Notes

1. This drawing is provided for planning purposes to show the external lighting strategy, and should be developed at technical design stage.
2. Luminaire positions are indicative and will be subject to final site layout.
3. Levels of illuminance are calculated and shown at ground level. Calculations are based on luminaires at full output/ maintenance factor = 1 to represent the worst case scenario for assessment purposes.
4. The model is based on calculations on a flat ground plane. No topography or proposed levels have been built into the calculation model.
5. Isoline contours represent values of illuminance calculated in lux. Lux contours are shown down to a value of 0.2 lux.
6. The lighting design has been provided in accordance with the Clients requirements, instruction and risk assessment. The lighting provided is intended to aid in wayfinding only - and not to provide task illuminance.
7. Lighting has been specified in accordance with the recommendations within the Institute of Lighting Professionals (ILP) and Bat Conservation Trust (BCT) (2023) Guidance Note 08/ 23 Bats and Artificial Lighting in the UK.
8. The environmental lighting zone for the site is assumed to be E2, in accordance with a low district brightness area in a rural location.
9. All private luminaires have been specified in 2700K warm white to minimise the impact on bats.
10. All lighting proposed will be downward directional with 0% upward light output.
11. All building mounted (D1) luminaires to operate via an integral PIR motion sensors activated on a short 1 minute timer.
12. Wiring schematics and full details of equipment locations to be provided at the technical design stage.
13. No obstruction or planting shall hinder access to the column base compartment or the light distribution from any luminaire/ lantern.
14. This drawing should be read in conjunction with the Lighting Impact Assessment Report, Street Lighting Strategy, Calculation Summary and all relevant architectural, structural, mechanical and electrical services information.
15. This design is based on a desktop study; on the information provided by others, with no site visit having been undertaken. The use of this drawing does not absolve the client from his responsibilities under the Health and Safety: The Construction Design and Management Regulations 2015. The Contractor should undertake a thorough Risk Assessment prior to undertaking any installation works.
16. Refer to accompanying Designers Risk Assessment for details of design risks identified.
17. Scaled for planning purposes only.
18. All measurements are in millimetres unless stated otherwise
19. All symbols used are generic and should not be considered as true representations of size or dimensions of actual luminaires.

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S38 Luminaire Legend

- X1 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 6m fixed column, post top mounted with 0° tilt, complete with C3.5 optic. As Urbis Schreder Axia 3.1, 16 LED, 460mA (3.50klm) C3.5 optic or equal and approved.
- X2 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 6m fixed column, post top mounted with 0° tilt, complete with C3.5 optic and integral rear louvre. As Urbis Schreder Axia 3.1, 16 LED, 460mA (3.50klm) C3.5 optic with integral rear louvre or equal and approved.
- X3 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 8m fixed column, post top mounted with 0° tilt, complete with E8.4 optic. As Urbis Schreder Axia 3.2, 32 LED, 580mA (7.80klm) E8.4 optic or equal and approved.
- X4 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 5m fixed column, post top mounted with 0° tilt, complete with B2.0 optic. As Urbis Schreder Axia 3.1, 8 LED, 540mA (2.01klm) B2.0 optic or equal and approved.
- X5 — IP66 & IK10 rated, 2700K LED luminaire, mounted on a 5m fixed column, post top mounted with 0° tilt, complete with B2.0 optic and integral rear louvre. As Urbis Schreder Axia 3.1, 8 LED, 540mA (2.01klm) B2.0 optic with integral rear louvre or equal and approved.

Private (Dwelling) Luminaire Legend

- D1 — IP44 rated, downward directional wall luminaire, mounted at 1.8m AFFL with integrated PIR movement sensor. As Green Lighting PIR Wall Light GL-203/BLK or equal and approved.
  Fitted with a GU10 lamp holder. Developer to provide an LED 2700K (355lm / 5.5W) lamp to be installed.

  (Photometric data for calculation purposes is based on bare lamps, as photometric data for the entire luminaires are not available.)

Legend

- = Application Boundary
- = Bat Habitat Zone A - Proposed dark corridor - ≤0.2 Lux horizontally at ground level and ≤0.4 Lux vertically from ground level up to a height of 4m targeted

Isoline Legend

- = 10 Lux
- = 5 Lux
- = 4 Lux
- = 2 Lux
- = 1 Lux
- = 0.5 Lux
- = 0.2 Lux

1:500
10m 0 10m 20m 30m 40m 50m

Rev	Details	By / Reviewed	Date
P01	Preliminary Issue	TB / BB	26.03.26

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CLIENT
ALLISON HOMES

PROJECT TITLE
Land South A363
North Bradley, Trowbridge

DRAWING TITLE
External Lighting Strategy
Levels of Horizontal Illuminance Shown at Ground Level from External Lighting Only
Full Output Shown (MF=1)

SCALE AT A0
1:500

DISCIPLINE
Lighting

DRAWING NUMBER
1816-LB-EX-XX-DR-E-7080-21
Project - Originator - Zone - Level - Type - Role - NBS class - Sequential Number

STATUS
Preliminary

ISSUE
P01

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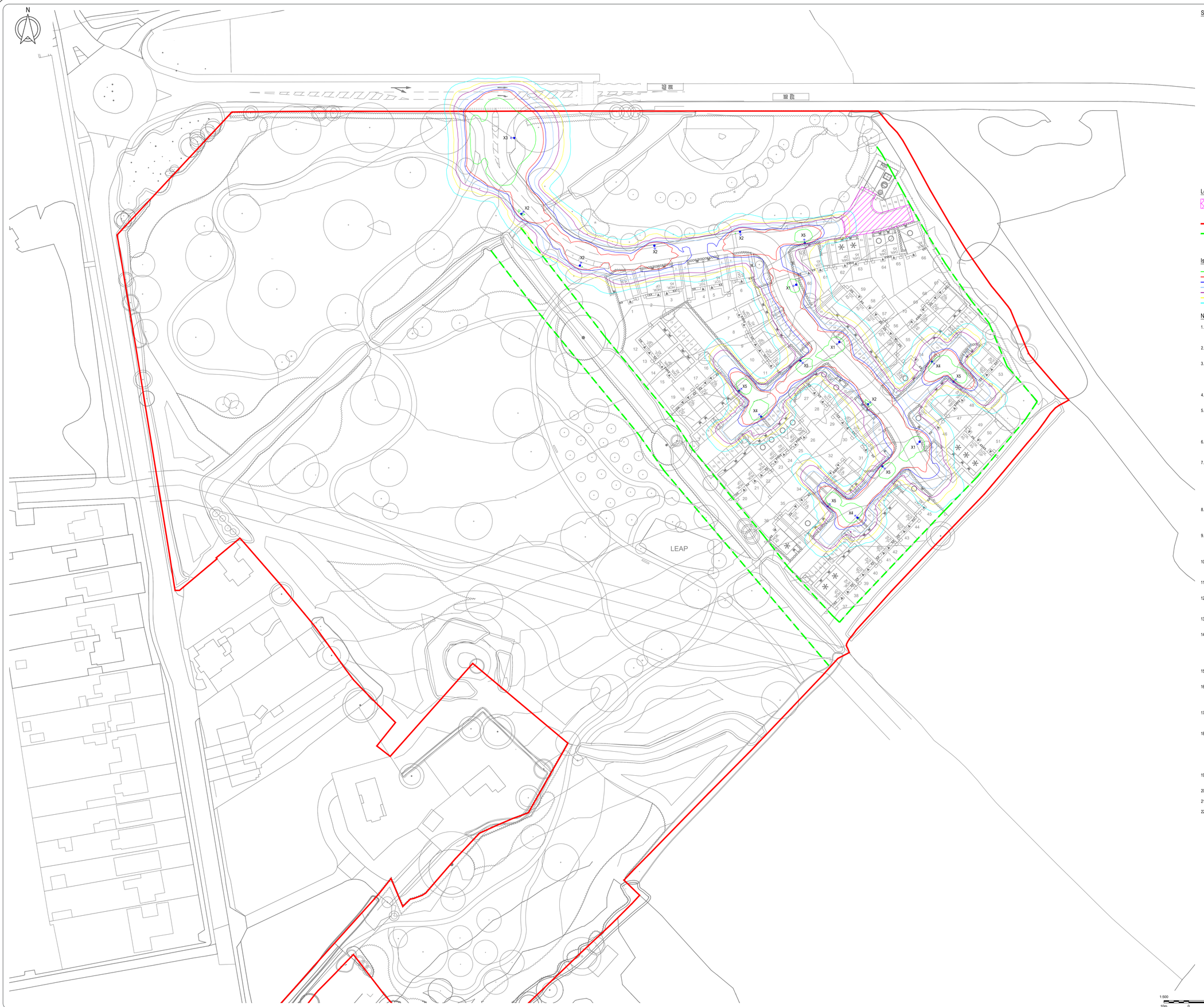
S38 Street Lighting Strategy

APPENDIX E

A0 - Scale for Planning Purposes Only



S38 Luminaire Legend

X5

Proposed 5m tubular stepped steel (galvanised finish) (root base) column with post top mounted at 0° Urbis Axia 3.1 - 8 LED Oslon square giant 540mA 2700K warm white with B2.0 optic (8 LED / 2.01klm output) complete with integral rear louver.
Luminaire to be fitted with DALI dimming and CMS compatible LED driver and temporary miniature photocell with 20 Lux switching. Luminaire shall dim in accordance with the dimming regime below.

Column Ref: CU Phosco - Column R2505T01/WILTS
Luminaire Ref: Urbis Axia 3.1 - 8 Oslon Square Giant 540mA 2700K warm white with B2.0 optic (8 LED / 2.01klm output) complete with integral rear louver.
Control Gear Ref: Dali dimming and CMS compatible
Photocell Ref: Zodion SS6 - 20 Lux switch on/off level output
Telecell Ref: Telensa-T2E1N-B-3
Dimming Regime:
100% - Dusk to 20.00HRS
75% - 20.00HRS to 23.00HRS
50% - 23.00HRS to 06.00HRS
100% - 06.00HRS to Dawn
Switch Regime: D19
Dimming Code: 42 0015 0000 100
Isolator Ref: (Single) Lucy Lighting
TR2-PP20-EB2-LD06-06
Internal Wiring: 3 core 2.5mm flexible arctic grade (230V)
Service Connection: Unmetered statutory low voltage supply

Legend

= Area of section 38 street lighting not compliant with adoptable standards for ecological reasons

= Application Boundary

= Bat Habitat Zone A - Proposed dark corridor - ≤0.2 Lux horizontally at ground level and ≤0.4 Lux vertically from ground level up to a height of 4m targeted

Isoline Legend

= 10 Lux
= 5 Lux
= 4 Lux
= 2 Lux
= 1 Lux
= 0.5 Lux
= 0.2 Lux

Notes

1. This drawing represents a street lighting strategy prepared for the planning application stage, and should be developed at technical design stage.
2. Luminaire/ column positions are indicative and will be subject to final site/ road layout and Atkins / Wiltshire Council approval.
3. Levels of illuminance are calculated and shown horizontally at ground level. Calculations are based on luminaires at full output/ maintenance factor = 1 to represent the worst case scenario for assessment purposes. Refer to Calculation Summary for maintained levels of design illuminance.
4. Isolines contours represent values of illuminance calculated in lux.
5. Section 38 street lighting has been designed to BS 5489:2020 class P4 for the main spine road (P4 = 5.0 – 7.5 Lux Eav, and 1.0 Lux Emin). The subsidiary roads have been designed to a P5 class due to the ecological constraints (P5 = 3.0 – 4.5 Lux Eav, and 0.6 Lux Emin).
6. The environmental lighting zone for the site is assumed to be E2, in accordance with a low district brightness area in a rural location.
7. The maintenance factor has been derived, as follows:
   - fLF / LLMF= 0.98
   - fns = 0.97
   - fLu = 0.92 for an E1 zone, with a mounting height of 6m or less, and a 72 months cleaning frequency, as derived from table 1 in BS 5489.

   This results in a 0.87 maintenance factor.
8. The street lighting has been designed to minimise the impact on bats and the environment. All luminaries have been specified in 2700K & 3000K warm white in accordance with Wiltshire Council's specification.
9. Integral back light shields (louvres) have been specified to the luminaires as indicated, to minimise the impacts on to the dark areas required for bats. The effect of the back light shields is reflected by the isolines on the drawing.
10. The developer is required to supply free of charge 17no. T2e1n-b-3 Telensa telecells to Wiltshire Council for fitting after adoption.
11. Without receipt of telecell's the site shall not be deemed acceptable for adoption.
12. Luminaires, columns, controls, isolation units, cut-outs, fuses and all associated equipment shall be in accordance with Atkins / Wiltshire Council specification.
13. For full section 38 street lighting specification refer to Atkins / Wiltshire Council documentation.
14. Columns should be sited in accordance with BS 5489, and generally be installed in the footpath at the rear or in the absence of a footpath, a minimum of 0.8 metres from the kerb edge to the face of the column and within the highway to be adopted. Unless a reduction in set-back distance is agreed with the local authority for shared surfaces/spaces.
15. No obstruction or planting shall hinder access to the column base compartment or the light distribution from the lantern.
16. This drawing should be read in conjunction with the Lighting Impact Assessment Report, Calculation Summary and all relevant architectural, structural, mechanical and electrical services information.
17. The model is based on calculations on a flat ground plane. No topography, buildings or proposed levels have been built into this calculation model.
18. This design is based on a desktop study, on the information provided by others, with no site visit having been undertaken. The use of this drawing does not absolve the client from his responsibilities under the Health and Safety: The Construction Design and Management Regulations 2015. The Contractor should undertake a thorough Risk Assessment prior to undertaking any installation works.
19. Refer to accompanying Designers Risk Assessment for details of design risks identified.
20. Scaled for planning purposes only.
21. All measurements are in millimetres unless stated otherwise.
22. All symbols used are generic and should not be considered as true representations of size or dimensions of actual luminaires.

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S38 Luminaire Legend

X1

Proposed 6m tubular stepped steel (galvanised finish) (root base) column with post top mounted at 0° Urbis Axia 3.1 - 16 LED Oslon square giant 460mA 2700K warm white with C3.5 optic (16 LED / 3.50klm output).
Luminaire to be fitted with DALI dimming and CMS compatible LED driver and temporary miniature photocell with 20 Lux switching. Luminaire shall dim in accordance with the dimming regime below.

Column Ref: CU Phosco - Column R2506T01/WILTS
Luminaire Ref: Urbis Axia 3.1 - 16 Oslon Square Giant 460mA 2700K warm white with C3.5 optic (16 LED / 3.50klm output).
Control Gear Ref: Dali dimming and CMS compatible
Photocell Ref: Zodion SS6 - 20 Lux switch on/off level output
Telecell Ref: Telensa-T2E1N-B-3
Dimming Regime:
100% - Dusk to 20.00HRS
75% - 20.00HRS to 23.00HRS
50% - 23.00HRS to 06.00HRS
100% - 06.00HRS to Dawn
Switch Regime: D19
Dimming Code: 42 0015 0000 100
Isolator Ref: (Single) Lucy Lighting
TR2-PP20-EB2-LD06-06
Internal Wiring: 3 core 2.5mm flexible arctic grade (230V)
Service Connection: Unmetered statutory low voltage supply

X2

Proposed 6m tubular stepped steel (galvanised finish) (root base) column with post top mounted at 0° Urbis Axia 3.1 - 16 LED Oslon square giant 460mA 2700K warm white with C3.5 optic (16 LED / 3.50klm output) complete with integral rear louver.
Luminaire to be fitted with DALI dimming and CMS compatible LED driver and temporary miniature photocell with 20 Lux switching. Luminaire shall dim in accordance with the dimming regime below.

Column Ref: CU Phosco - Column R2506T01/WILTS
Luminaire Ref: Urbis Axia 3.1 - 16 Oslon Square Giant 540mA 2700K warm white with C3.5 optic (16 LED / 3.50klm output) complete with integral rear louver.
Control Gear Ref: Dali dimming and CMS compatible
Photocell Ref: Zodion SS6 - 20 Lux switch on/off level output
Telecell Ref: Telensa-T2E1N-B-3
Dimming Regime:
100% - Dusk to 20.00HRS
75% - 20.00HRS to 23.00HRS
50% - 23.00HRS to 06.00HRS
100% - 06.00HRS to Dawn
Switch Regime: D19
Dimming Code: 42 0015 0000 100
Isolator Ref: (Single) Lucy Lighting
TR2-PP20-EB2-LD06-06
Internal Wiring: 3 core 2.5mm flexible arctic grade (230V)
Service Connection: Unmetered statutory low voltage supply

X3

Proposed 8m tubular stepped steel (galvanised finish) (root base) column with post top mounted at 0° Urbis Axia 3.3 - 64 LED Oslon square giant 480mA 3000K warm white with E14.6 optic (64 LED / 13.69klm output).
Luminaire to be fitted with DALI dimming and CMS compatible LED driver and temporary miniature photocell with 20 Lux switching. Luminaire shall dim in accordance with the dimming regime below.

Column Ref: CU Phosco - Column R2608A01/WILTS
Luminaire Ref: Urbis Axia 3.3 - 64 Oslon Square Giant 480mA 3000K warm white with E14.6 optic (64 LED / 15.50klm output)
Control Gear Ref: Dali dimming and CMS compatible
Photocell Ref: Zodion SS6 - 20 Lux switch on/off level output
Telecell Ref: Telensa-T2E1N-B-3
Dimming Regime:
100% - Dusk to 20.00HRS
75% - 20.00HRS to 23.00HRS
50% - 23.00HRS to 06.00HRS
100% - 06.00HRS to Dawn
Switch Regime: D19
Dimming Code: 42 0015 0000 100
Isolator Ref: (Single) Lucy Lighting
TR2-PP20-EB2-LD06-06
Internal Wiring: 3 core 2.5mm flexible arctic grade (230V)
Service Connection: Unmetered statutory low voltage supply

X4

Proposed 5m tubular stepped steel (galvanised finish) (root base) column with post top mounted at 0° Urbis Axia 3.1 - 8 LED Oslon square giant 540mA 2700K warm white with B2.0 optic (8 LED / 2.01klm output).
Luminaire to be fitted with DALI dimming and CMS compatible LED driver and temporary miniature photocell with 20 Lux switching. Luminaire shall dim in accordance with the dimming regime below.

Column Ref: CU Phosco - Column R2505T01/WILTS
Luminaire Ref: Urbis Axia 3.1 - 8 Oslon Square Giant 540mA 2700K warm white with B2.0 optic (8 LED / 2.01klm output)
Control Gear Ref: Dali dimming and CMS compatible
Photocell Ref: Zodion SS6 - 20 Lux switch on/off level output
Telecell Ref: Telensa-T2E1N-B-3
Dimming Regime:
100% - Dusk to 20.00HRS
75% - 20.00HRS to 23.00HRS
50% - 23.00HRS to 06.00HRS
100% - 06.00HRS to Dawn
Switch Regime: D19
Dimming Code: 42 0015 0000 100
Isolator Ref: (Single) Lucy Lighting
TR2-PP20-EB2-LD06-06
Internal Wiring: 3 core 2.5mm flexible arctic grade (230V)
Service Connection: Unmetered statutory low voltage supply

Rev	Details:	By / Reviewed	Date
P01	Preliminary Issue	TB / BB	26.03.26

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CLIENT
ALLISON HOMES

PROJECT TITLE
Land South A363
North Bradley, Trowbridge

DRAWING TITLE
Street Lighting Strategy - Section 38
Levels of Horrizontal Illuminance Shown at Ground Level
Full Output Shown (MF=1)

SCALE AT A0
1:500

DISCIPLINE
Lighting

DRAWING NUMBER
1916-LB-EX-XX-DR-E-7080-41
Project - Originator - Zone - Level - Type - Role - NBS class - Sequential Number

STATUS
Preliminary

ISSUE
P01

1:500
10m 0 10m 20m 30m 40m 50m

THE LIGHTING BEE

S38 Street Lighting Calculation Summary

APPENDIX F

DATE:	**26 March 2026**
DESIGNER:	**The Lighting Bee Ltd**
PROJECT No:	**1816**
PROJECT NAME:	**Land South A363**

S38 Street Lighting Strategy

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Grid 1 - P4	140.00	150.00	375.00	375.00	1.50	1.50
2	Grid 2 - P5	366.85	315.85	60.00	50.00	1.50	1.47
3	Grid 3 - P5	328.39	257.76	50.00	50.00	1.47	1.47
4	Grid 4 - P5	290.81	302.86	60.00	50.00	1.50	1.47
5	Grid 5 - P5	312.73	377.24	75.00	50.00	1.50	1.47

Luminaires

Luminaire A Data

Supplier	
Type	AXIA 3.1 B2.0 - 27K 8 OSLON SQUARE GI ANT 540mA WW Integrated
Lamp(s)	8 OSLON SQUARE GIANT 540mA WW 27 00K
Lamp Flux (klm)	2.01
File Name	AXIA 3.1 B2.0 - 27K 8 OSLON SQUARE GI ANT 540mA WW 2700K Integrated lenses ...
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	1019.7, 85.8, 0.0
No. in Project	3

Luminaire B Data

Supplier	
Type	AXIA 3.1 C3.5 - 27K 16 OSLON SQUARE G IANT 460mA WW Integrated
Lamp(s)	16 OSLON SQUARE GIANT 460mA WW 2 700K
Lamp Flux (klm)	3.50
File Name	AXIA 3.1 C3.5 - 27K 16 OSLON SQUARE G IANT 460mA WW 2700K Integrated lenses...
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	862.0, 84.6, 0.0
No. in Project	3

Luminaire C Data

Supplier	
Type	AXIA 3.3 E14.6-3K Integrated lenses - 64 OSLON SQUARE GIANT
Lamp(s)	64 OSLON SQUARE GIANT@480mA WW 730 230V 00-36-982
Lamp Flux (klm)	13.69
File Name	AXIA 3.3 E14.6 - 3K 64 OSLON SQUARE GIANT 480mA WW 3000K Integrated lens...
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	625.2, 21.3, 0.0
No. in Project	1

Luminaire D Data

Supplier	
Type	AXIA 3.1 C3.5 - 27K BL 16 OSLON SQUAR E GIANT 460mA WW 2700K I
Lamp(s)	16 OSLON SQUARE GIANT 460mA WW 2 700K
Lamp Flux (klm)	3.50
File Name	AXIA 3.1 C3.5 - 27K BL 16 OSLON SQUAR E GIANT 460mA WW 2700K Integrated le...
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	742.5, 62.1, 4.3
No. in Project	5

Luminaire E Data

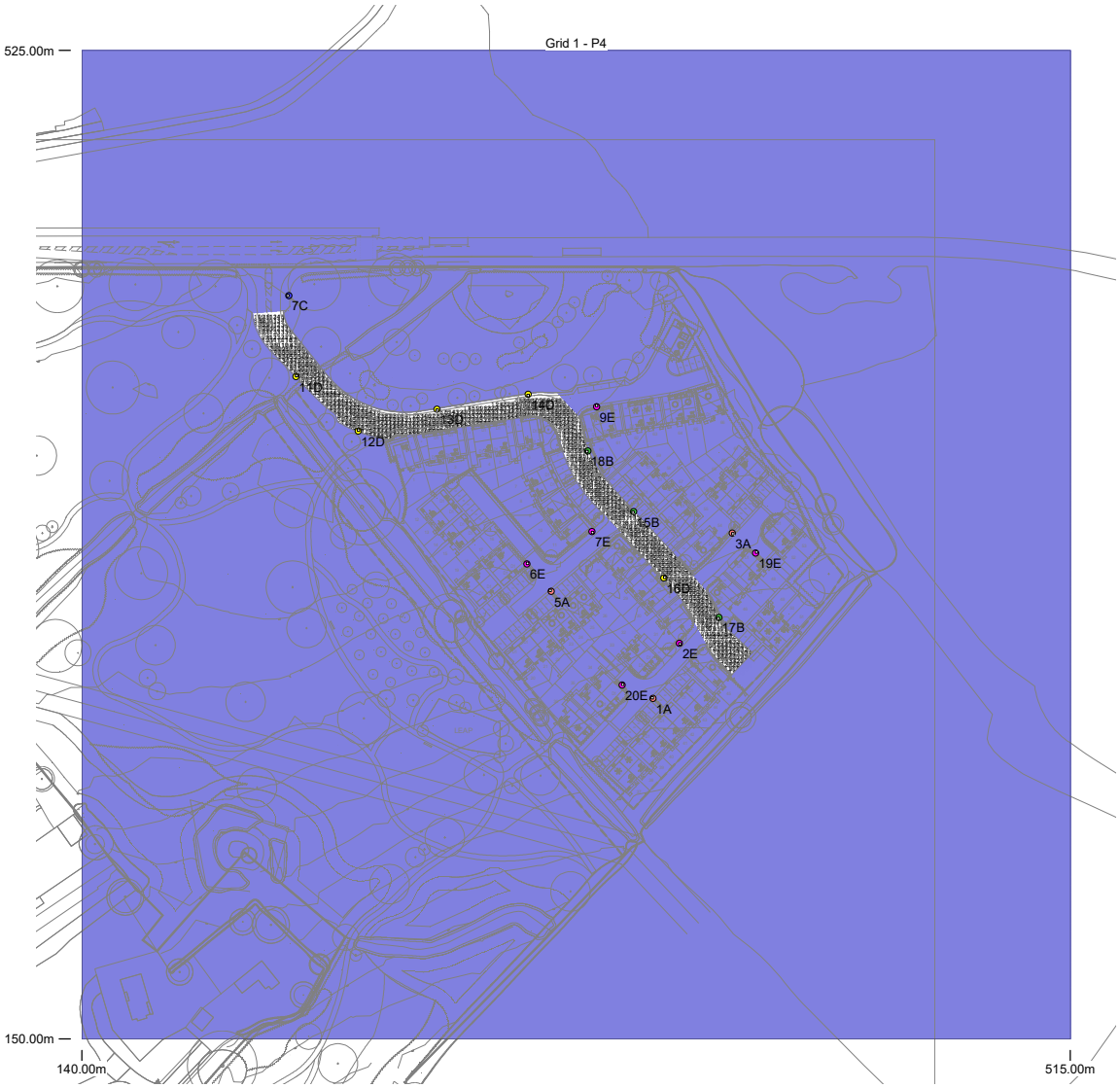
Supplier	
Type	AXIA 3.1 B2.0 - 27K BL 8 OSLON SQUARE GIANT 540mA WW 2700K In
Lamp(s)	8 OSLON SQUARE GIANT 540mA WW 27 00K
Lamp Flux (klm)	2.01
File Name	AXIA 3.1 B2.0 - 27K BL 8 OSLON SQUARE GIANT 540mA WW 2700K Integrated lens...
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	851.3, 68.9, 3.8
No. in Project	6

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	356.65	279.24	5.00	137.00	0.00	0.00	0.40			
2	E	366.61	300.13	5.00	316.00	0.00	0.00	0.40			
3	A	386.68	341.94	5.00	316.00	0.00	0.00	0.40			
5	A	317.95	319.85	5.00	130.00	0.00	0.00	0.40			
6	E	308.76	330.25	5.00	44.00	0.00	0.00	0.40			
7	E	333.48	342.53	5.00	305.00	0.00	0.00	0.40			
7	C	218.54	431.99	8.00	182.00	0.00	0.00	0.40			
9	E	335.26	389.88	5.00	99.00	0.00	0.00	0.40			
11	D	221.17	401.34	6.00	47.00	0.00	0.00	0.40			
12	D	244.80	380.62	6.00	70.00	0.00	0.00	0.40			
13	D	274.73	388.89	6.00	280.00	0.00	0.00	0.40			
14	D	309.23	394.54	6.00	281.00	0.00	0.00	0.40			
15	B	349.32	350.09	6.00	225.00	0.00	0.00	0.40			
16	D	360.73	324.91	6.00	38.00	0.00	0.00	0.40			
17	B	381.68	309.89	6.00	223.00	0.00	0.00	0.40			
18	B	331.94	373.08	6.00	206.00	0.00	0.00	0.40			
19	E	395.58	334.41	5.00	48.00	0.00	0.00	0.40			
20	E	344.90	284.32	5.00	48.00	0.00	0.00	0.40			

Horizontal Illuminance (lux)

Grid 1 - P4



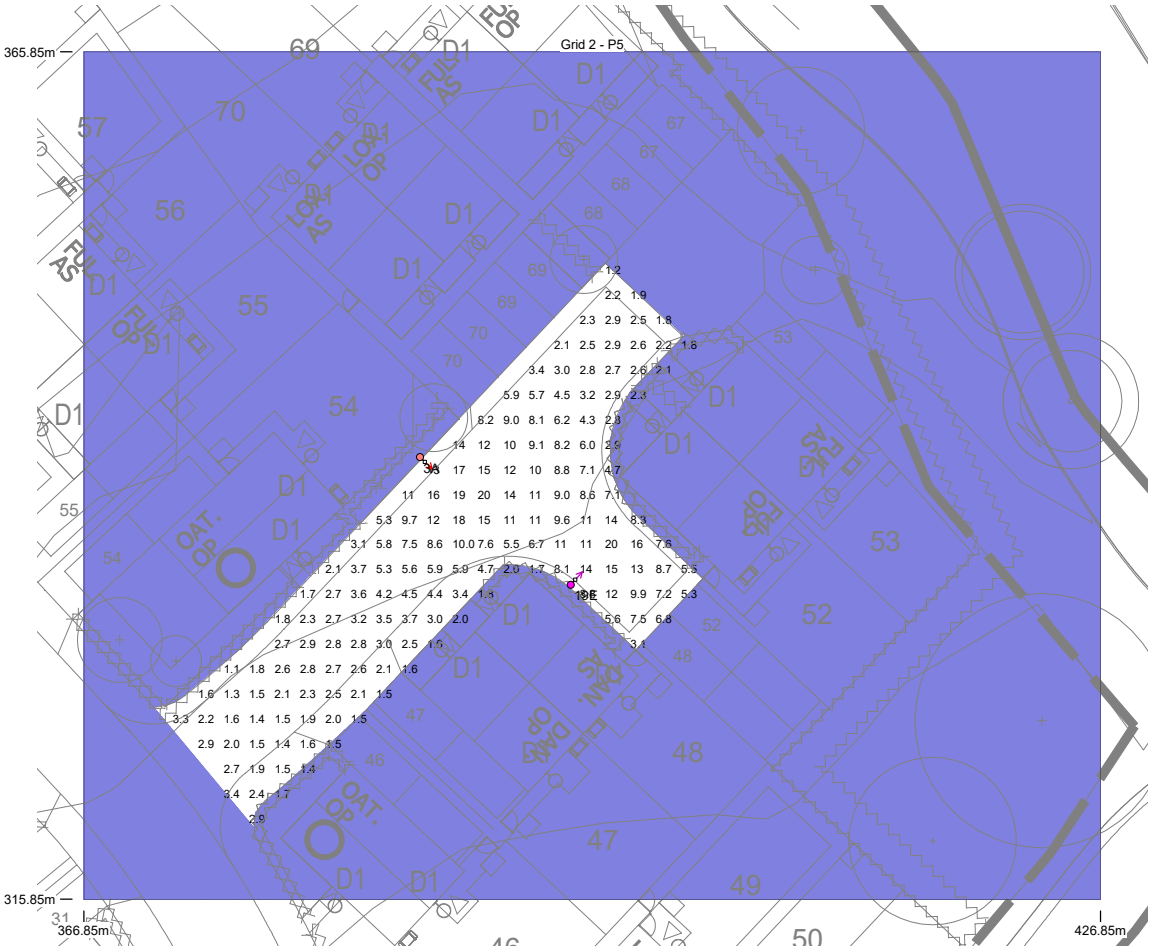
Results

Eav	5.60
Emin	1.11
Emax	16.63
Emin/Emax	0.07
Emin/Eav	0.20

9750677730

Horizontal Illuminance (lux)

Grid 2 - P5

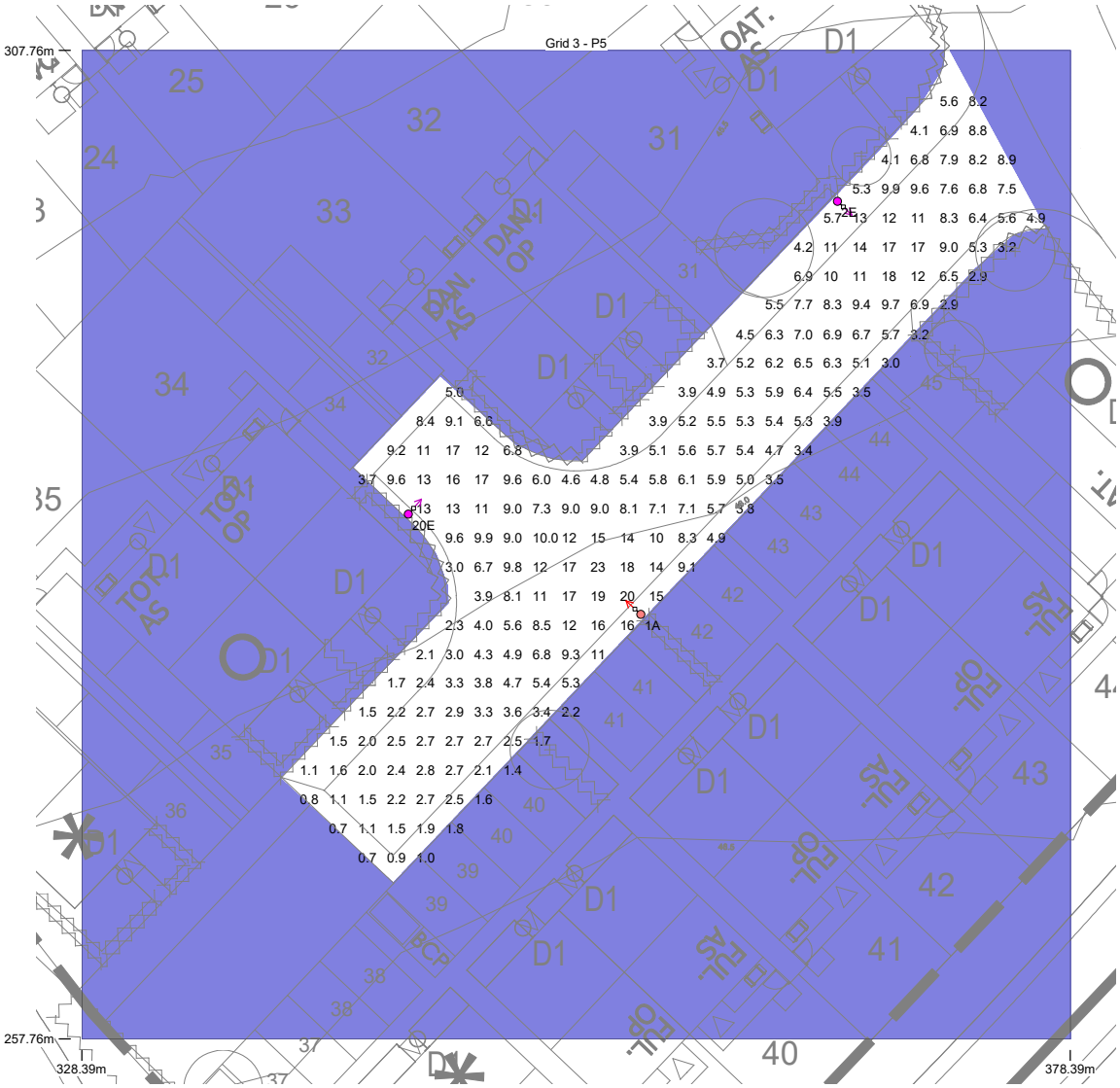


Results

Eav	5.66
Emin	1.10
Emax	19.96
Emin/Emax	0.06
Emin/Eav	0.19

Horizontal Illuminance (lux)

Grid 3 - P5



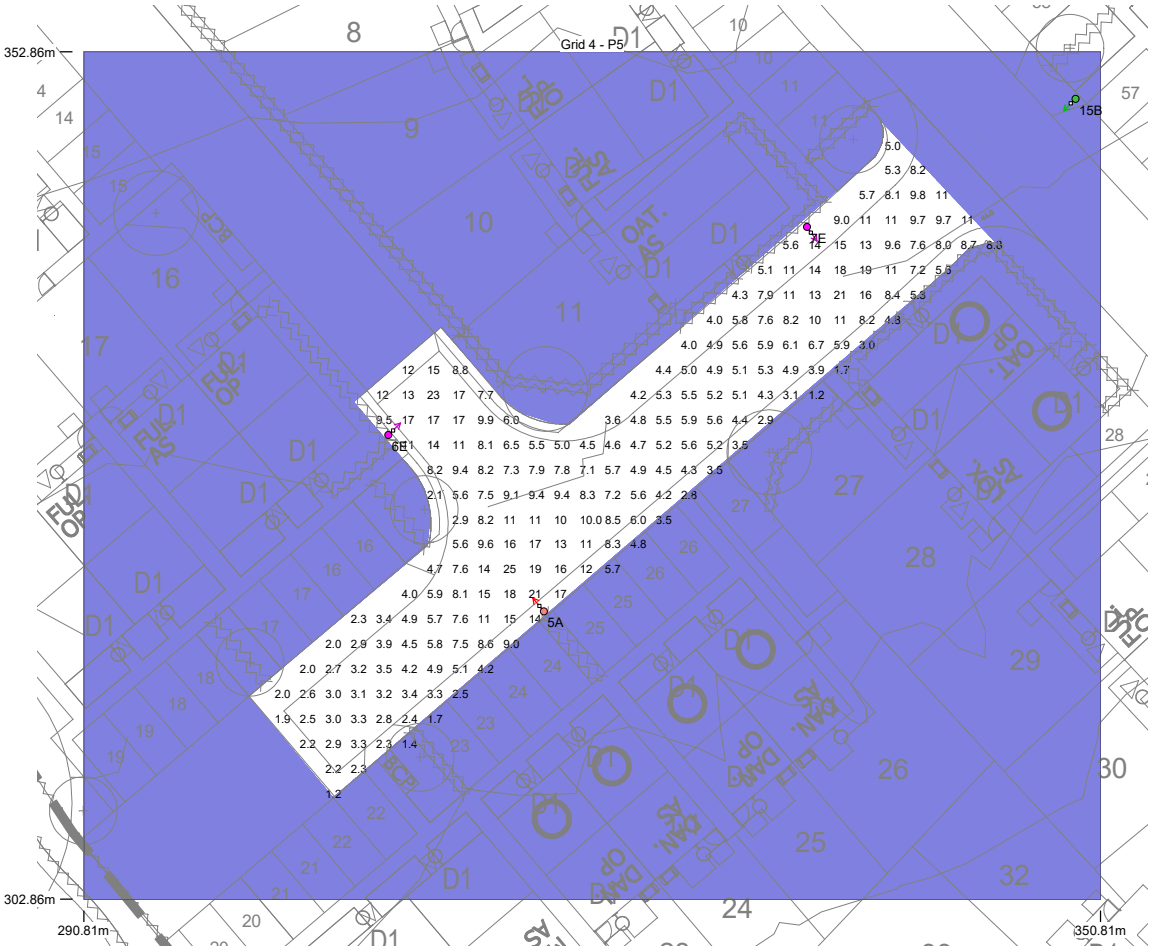
Results

Eav	6.82
Emin	0.66
Emax	23.43
Emin/Emax	0.03
Emin/Eav	0.10

9750677730

Horizontal Illuminance (lux)

Grid 4 - P5



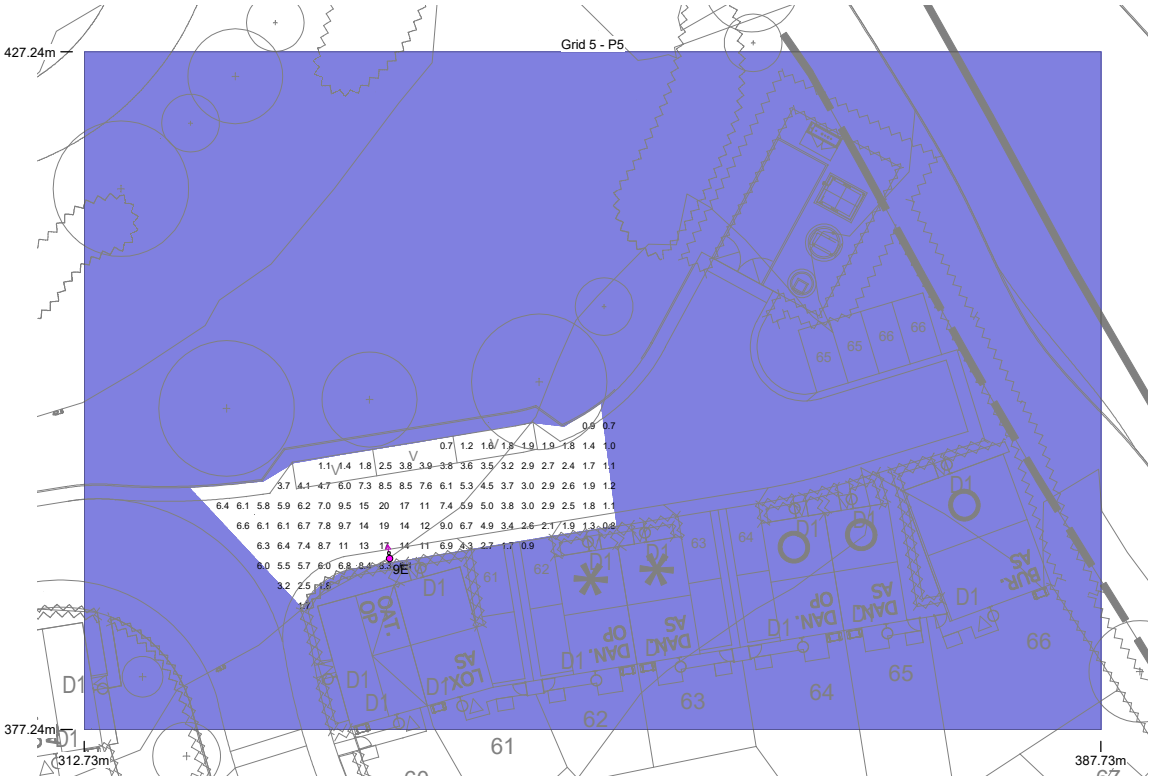
Results

Eav	7.54
Emin	1.18
Emax	24.68
Emin/Emax	0.05
Emin/Eav	0.16

9750677730

Horizontal Illuminance (lux)

Grid 5 - P5



Results

Eav	5.44
Emin	0.71
Emax	20.35
Emin/Emax	0.03
Emin/Eav	0.13

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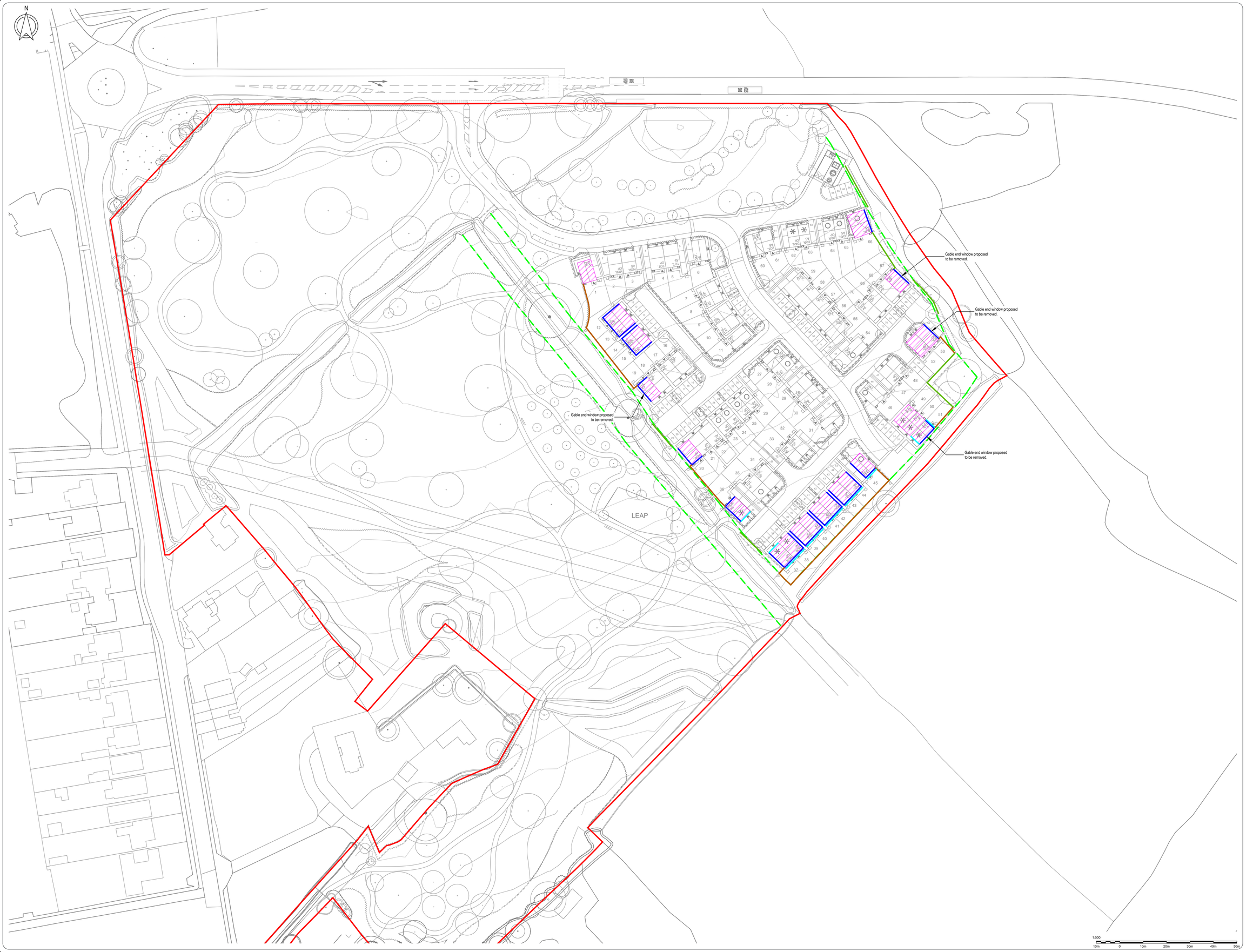
Lighting Mitigation Strategy

APPENDIX G

A0 - Scale for Planning Purposes Only



This Drawing is protected by Copyright. It may not be reproduced in any form or by any means for any purpose without the written consent of The Lighting Bee Ltd. Scale for planning purposes only. All Dimensions to be checked on Site and verified prior to commencing Works / Manufacture. Any discrepancies to be reported to The Lighting Bee Ltd. These Drawings reflect the layouts for the purposes of planning stage design only (up to RIBA Stage 3). The Contractor shall be responsible for producing their own Working and Co-ordination drawings prior to commencing their installations. If these drawings are used for Construction purposes it is done so at the Contractor's Risk.

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Legend

- Recessed downlight luminaires to be provided in certain rooms with apertures that face the proposed dark areas and corridors. Refer to Lighting Assessment Report for full details
- No external lighting to be provided to these elevations
- Minimum 1.8m high close boarded fencing to be provided
- Proposed 2.0m high double row of mixed hedging with temporary close boarded fencing within the hedgerow to create a solid barrier of a minimum height of 2.0m from finished ground level. Refer to landscape plan for further details
- Maximum glazing transmittance of 40% VLT/ TVlz to be provided to these elevations
- Application Boundary
- Bat Habitat Zone A - Proposed dark corridor - ≤0.2 Lux horizontally at ground level and ≤0.4 Lux vertically from ground level up to a height of 4m targeted

Notes

1. This drawing should be read in conjunction with the Lighting Impact Assessment report. Refer to the Mitigation Strategy section of this report.
2. Refer to the Street Lighting Strategy drawing for full details of the proposed Street Lighting.
3. Refer to the External Lighting Strategy drawing for full details of the proposed External Lighting
4. Scaled for planning purposes only.
5. All measurements are in millimeters unless stated otherwise.

P01	Preliminary Issue	TB / BB	26.03.26
Rev	Details:	By / Reviewed	Date

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CLIENT
ALLISON HOMES

PROJECT TITLE
Land South A363
North Bradley, Trowbridge

DRAWING TITLE
Lighting Impact Assessment
Mitigation Strategy

SCALE AT A0
1:500

DISCIPLINE
Lighting

DRAWING NUMBER
1816-LB-EX-XX-DR-E-7080-31
Project - Originator - Zone - Level - Type - Role - NBS class - Sequential Number

STATUS
Preliminary

ISSUE
P01

THE LIGHTING BEE

APPENDIX H

Luminaire Data Sheets and Manufacturer Data

Schréder
Experts in lightability™

ROAD

AXIA 3

PRO FLEX™

Engineered for performance, designed for the customer experience

With customer feedback playing a critical part in our innovative design process, we developed AXIA 3. More than a luminaire, it is a platform delivering sustainability, cost-effectiveness and customer experience all while supporting smart city frameworks. Based on experience from the hundreds of thousands AXIA luminaires installed worldwide, this third generation luminaire pushes the boundaries with photometric innovation, ease and speed of installation and FutureProof connectivity.

Available in three sizes, AXIA 3 enables towns and cities to maximise efficiency when lighting numerous environments, from bike paths, squares and car parks to residential streets, carriageways, urban roads and large boulevards. This lightweight and compact luminaire combines quality of light with a minimal carbon footprint. It excels in easy installation and carefree maintenance, reducing operating costs.

IP 66 | IK 10

URBAN & RESIDENTIAL STREETS | BIKE & PEDESTRIAN PATHS | RAILWAY STATIONS & METROS | CAR PARKS | LARGE AREAS | SQUARES & PEDESTRIAN AREAS | ROADS & MOTORWAYS

Concept

AXIA 3 is a robust yet compact luminaire, designed with a focus on miniaturisation and superior efficiency. Composed of high-pressure die-cast aluminium, as well as composite materials, AXIA 3 is available in three sizes. Thanks to its reduced weight, this road luminaire is easy to handle during installation. The AXIA 3.1, which can be fitted with up to 16 LEDs, is perfectly suited to low-height applications, whereas AXIA 3.2 and 3.3, with up to 32 or 64 LEDs, are ideal for lighting urban and large roads, carriageways and avenues. The AXIA 3 range is equipped with ProFlex™ photometric engines, providing the highest efficiency thanks to their ability to maximise the lumen output and to provide very extensive light distributions.

AXIA 3 comes pre-cabled, hence there is no need to open the luminaire. The complete range is available with an integrated universal fixation part adapted for post-top and side-entry mounting on various spigots (Ø32mm with adapter, Ø42-48mm, Ø60mm and Ø76mm). The inclination angle can be adjusted on-site for both post-top (-5°/+15°) and side-entry (-10°/+10°) configurations to optimise lighting, reduce power consumption and control light pollution.

This highly efficient, cost-effective and connected-ready luminaire, offers towns and cities the ideal solution to improve lighting levels, increase safety, generate energy savings and reduce their ecological footprint. AXIA 3 is the ideal tool to provide another 25 years of efficiency, sustainability and safety.

The ProFlex™ photometric engine provides the highest efficiency.

The AXIA 3 range has a universal fixation part for spigots ranging from Ø32 to Ø76mm.

TYPES OF APPLICATION

- URBAN & RESIDENTIAL STREETS
- BIKE & PEDESTRIAN PATHS
- RAILWAY STATIONS & METROS
- CAR PARKS
- LARGE AREAS
- SQUARES & PEDESTRIAN AREAS
- ROADS & MOTORWAYS

KEY ADVANTAGES

- Maximised savings in energy and maintenance costs
- ProFlex™ photometric engines offering high efficiency lighting, comfort and safety
- 3 sizes to provide the most accurate solutions for numerous road and urban applications
- Easy installation: pre-cabled and equipped with universal fixation part adapted for side-entry and post-top mounting
- Adjustable inclination for optimised photometry and uniformity
- Connected-ready

The inclination is adjustable on-site for optimised photometry and further energy savings.

AXIA 3 is connected-ready and can operate with various sensors and control systems.

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ProFlex™

The ProFlex™ photometric engine integrates the lenses into a polycarbonate protector. This integration increases the output and reduces the reflection inside the optical unit. The polycarbonate used for the ProFlex™ photometric engine offers essential characteristics such as high optical clarity for a superior light transmission, better impact resistance compared to glass and a long life span with UV-stabilisation treatment. The ProFlex™ concept enables a compact design with a thin optical compartment. It provides extensive light distributions so that the spacing between the luminaires can be increased.

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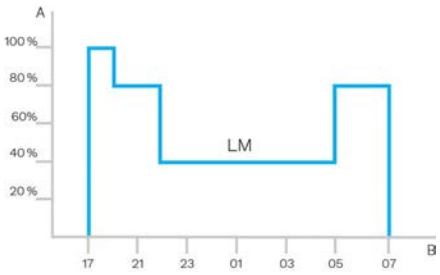
Custom dimming profile

Intelligent luminaire drivers can be programmed with complex dimming profiles. Up to five combinations of time intervals and light levels are possible. This feature does not require any extra wiring.

The period between switching on and switching off is used to activate the preset dimming profile. The customised dimming system generates maximum energy savings while respecting the required lighting levels and uniformity throughout the night.



A. Dimming level | B. Time

Daylight sensor / photocell

Photocell or daylight sensors switch the luminaire on as soon natural light falls to a certain level. It can be programmed to switch on during a storm, on a cloudy day (in critical areas) or only at nightfall so as to provide safety and comfort in public spaces.

PIR sensor: motion detection

In places with little nocturnal activity, lighting can be dimmed to a minimum most of the time. By using passive infrared (PIR) sensors, the level of light can be raised as soon as a pedestrian or a slow vehicle is detected in the area.

Each luminaire level can be configured individually with several parametres such as minimum and maximum light output, delay period and ON/OFF duration time. PIR sensors can be used in an autonomous or interoperable network.

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Schréder EXEDRA is the most advanced lighting management system on the market for controlling, monitoring and analysing streetlights in a user-friendly way.

Standardisation for interoperable ecosystems

Schréder plays a key role in driving standardisation with alliances and partners such as uCIFI, TALQ or Zhaga. Our joint commitment is to provide solutions designed for vertical and horizontal IoT integration. From the body (hardware) to the language (data model) and the intelligence (algorithms), the complete Schréder EXEDRA system relies on shared and open technologies. Schréder EXEDRA also relies on Microsoft™ Azure for cloud services, provided with the highest levels of trust, transparency, standards conformance and regulatory compliance.

Breaking the silos

With EXEDRA, Schréder has taken a technology-agnostic approach: we rely on open standards and protocols to design an architecture able to interact seamlessly with third-party software and hardware solutions. Schréder EXEDRA is designed to unlock complete interoperability, as it offers the ability to:

- control devices (luminaires) from other brands
- manage controllers and to integrate sensors from other brands
- connect with third-party devices and platforms

A plug-and-play solution

As a gateway-less system using the cellular network, an intelligent automated commissioning process recognises, verifies and retrieves luminaire data into the user interface. The self-healing mesh between luminaire controllers enables real-time adaptive lighting to be configured directly via the user interface. OWLET IV luminaire controllers, optimised for Schréder EXEDRA, operate Schréder's luminaires and luminaires from third parties. They use both cellular and mesh radio networks, optimising geographical coverage and redundancy for continuous operation.

Tailored experience

Schréder EXEDRA includes all advanced features needed for smart device management, real-time and scheduled control, dynamic and automated lighting scenarios, maintenance and field operation planning, energy consumption management and third-party connected hardware integration. It is fully configurable and includes tools for user management and multi-tenant policy that enables contractors, utilities or big cities to segregate projects.

A powerful tool for efficiency, rationalisation and decision making

Data is gold. Schréder EXEDRA brings it with all the clarity managers need to drive decisions. The platform collects massive amounts of data from end devices and, aggregates, analyses and intuitively displays them to help end-users take the right actions.

Protected on every side

ISO 27001
BUREAU VERITAS
Certification

Schréder EXEDRA provides state-of-the-art data security with encryption, hashing, tokenisation, and key management practices that protect data across the whole system and its associated services. The whole platform is ISO 27001 certified. It demonstrates that Schréder EXEDRA meets the requirements for establishing, implementing, maintaining and continually improving security management.

Mobile App: any time, any place, connect to your street lighting

The Schréder EXEDRA mobile application offers the essential functionalities of the desktop platform, to accompany all types of operator on site in their daily effort to maximise the potential of connected lighting. It enables real-time control and settings, and contributes to effective maintenance.

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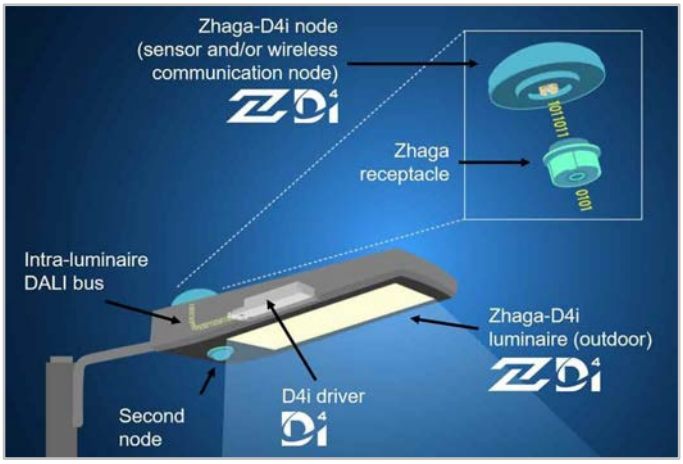
The Zhaga consortium joined forces with the DiiA and produced a single Zhaga-D4i certification that combines the Zhaga Book 18 version 2 outdoor connectivity specifications with the DiiA's D4i specifications for intra-luminaire DALI.



Standardisation for interoperable ecosystems

Member of Zhaga

As a founding member of the Zhaga consortium, Schréder has participated in the creation of, and therefore supports, the Zhaga-D4i certification program and the initiative of this group to standardise an interoperable ecosystem. The D4i specifications take the best of the standard DALI2 protocol and adapt it to an intra-luminaire environment but it has certain limitations. Only luminaire mounted control devices can be combined with a Zhaga-D4i luminaire. According to the specification, control devices are limited respectively to 2W and 1W average power consumption.

Certification program

The Zhaga-D4i certification covers all the critical features including mechanical fit, digital communication, data reporting and power requirements within a single luminaire, ensuring plug-and-play interoperability of luminaires (drivers) and peripherals such as connectivity nodes.

Cost-effective solution

A Zhaga-D4i certified luminaire includes drivers offering features that had previously been in the control node, like energy metering, which has in turn simplified the control device therefore reducing the price of the control system.

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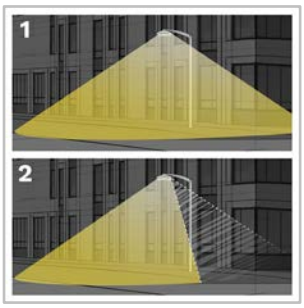
With the PureNight concept, Schréder offers the ultimate solution for restoring the night sky without switching off cities, while maintaining safety and well-being for people and preserving wildlife. The PureNight concept guarantees that your Schréder lighting solution satisfies environmental laws and requirements. Well-designed LED lighting has the potential to improve the environment in all respects.

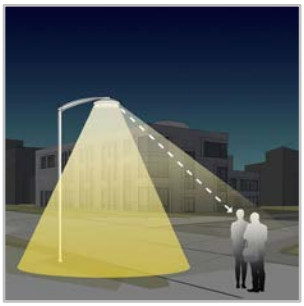
Direct the light only where it is wanted and needed



Schréder is renowned for its expertise in photometry. Our optics direct light only where it is wanted and needed. However, light trespass behind the luminaire might be a key concern when it comes to protecting a sensitive wildlife habitat or avoiding intrusive lighting towards buildings. Our fully integrated backlight solutions easily address this potential risk.

1. Without backlight
2. With backlight

Offer maximum visual comfort to people



Because of the lower installation height compared to road lighting, visual comfort is an essential aspect of urban lighting. Schréder designs lenses and accessories to minimise any type of glare (distracting, discomforting, disabling glare and blinding glare). Our design offices harness a range of possibilities to find the best solutions for each project and ensure that we provide a gentle light that delivers the best night-time experience.

Protect wildlife

If not well designed, artificial lighting can badly affect wildlife. Blue light and excessive intensity can have a damaging effect on all types of life. Blue light radiation has the ability to suppress the production of melatonin, the hormone that contributes to the regulation of the circadian rhythm. It can also alter the behavioural patterns of animals including bats and moths, as it can change their movements towards or away from light sources. Schréder favours warm white LEDs with minimal blue light, combined with advanced control systems including sensors. This enables permanent adaptation of the lighting to the real needs of the moment, minimising disturbance to the fauna and flora.

Choose a Dark Sky certified luminaire

The International Dark-Sky Association (IDA) is the recognised authority on light pollution. It provides leadership, tools and resources to industries and companies willing to reduce light pollution. The IDA's Fixture Seal of Approval programme certifies outdoor lighting fixtures as being Dark Sky Friendly. All products approved by this programme must comply with the following criteria:

"- The light sources shall have a maximum correlated colour temperature of 3000K;

- Uplight allowance limited to 0.5% of total output, or 50 lumens, with no more than

10 lumens in the 90-100 degree UL zone;

- The luminaires must have a dimming capability to 10% of full rating;

- The luminaires must be equipped with a fixed mounting option;

- The luminaires must have Safety Certification by an independent laboratory."

This approved Schréder range of luminaires complies with these requirements.

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GENERAL INFORMATION

Recommended installation height	4m to 12m | 13' to 39'
Driver included	Yes
CE mark	Yes
ENEC certified	Yes
ENEC+ certified	Yes
ROHS compliant	Yes
Dark Sky friendly lighting (IDA certification)	Yes
Zhaga-D4i certified	Yes
Testing standard	LM 79-08 (all measurements in ISO17025 accredited laboratory)

HOUSING AND FINISH

Housing	Aluminium Composite materials
Optic	Polycarbonate
Protector	Polycarbonate (with integrated lenses)
Housing finish	Polyester powder coating
Standard colour(s)	RAL 7040 window grey RAL 9005 Jet black
Tightness level	IP 66
Impact resistance	IK 10
Vibration test	Compliant with modified IEC 68-2-6 (0.5G)

OPERATING CONDITIONS

Operating temperature range (Ta)	-30°C up to +45°C / -22°F up to 113°F

· Depending on the luminaire configuration. For more details, please contact us.

ELECTRICAL INFORMATION

Electrical class	Class I EU, Class II EU
Nominal voltage	220-240V – 50-60Hz
Power factor (at full load)	0.9
Surge protection options (kV)	10
Electromagnetic compatibility (EMC)	EN 55015 / EN 61000-3-2 / EN 61000-4-5 / EN 61547
Control protocol(s)	1-10V, DALI
Control options	Bi-power, Custom dimming profile, Photocell, Remote management
Socket	Zhaga (optional) NEMA 3-pin (optional) NEMA 6-pin (optional) NEMA 7-pin (optional)
Associated control system(s)	Schréder EXEDRA
Sensor	PIR (optional)

OPTICAL INFORMATION

LED colour temperature	2700K (WW 727) 3000K (WW 730) 4000K (NW 740)
Colour rendering index (CRI)	>70 (WW 727) >70 (WW 730) >70 (NW 740)
ULOR	0%
ULR	0%

· Meets IDA Dark Sky requirements when fitted with LEDs of 3000K or less.

· ULOR may be different according to the configuration. Please consult us.

· ULR may be different according to the configuration. Please consult us.

LIFETIME OF THE LEDS @ TQ 25°C

All configurations	100,000h - L90

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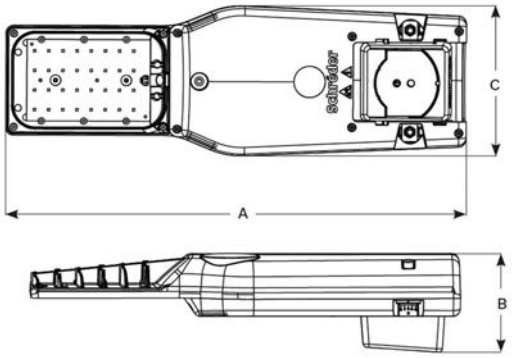
DIMENSIONS AND MOUNTING

AxBxC (mm | inch)	AXIA 3.1 : 513x130x191 | 20.2x5.1x7.5 AXIA 3.2 : 585x130x191 | 23.0x5.1x7.5 AXIA 3.3 : 550x130x277 | 21.7x5.1x10.9
Weight (kg | lbs)	AXIA 3.1 : 3.6 | 7.9 AXIA 3.2 : 4.8 | 10.6 AXIA 3.3 : 6.0 | 13.2
Aerodynamic resistance (CxS)	AXIA 3.1 : 0.03 AXIA 3.2 : 0.03 AXIA 3.3 : 0.04
Mounting possibilities	Side-entry slip-over – Ø32mm Side-entry slip-over – Ø42mm Side-entry slip-over – Ø48mm Side-entry slip-over – Ø60mm Post-top slip-over – Ø60mm Post-top slip-over – Ø76mm



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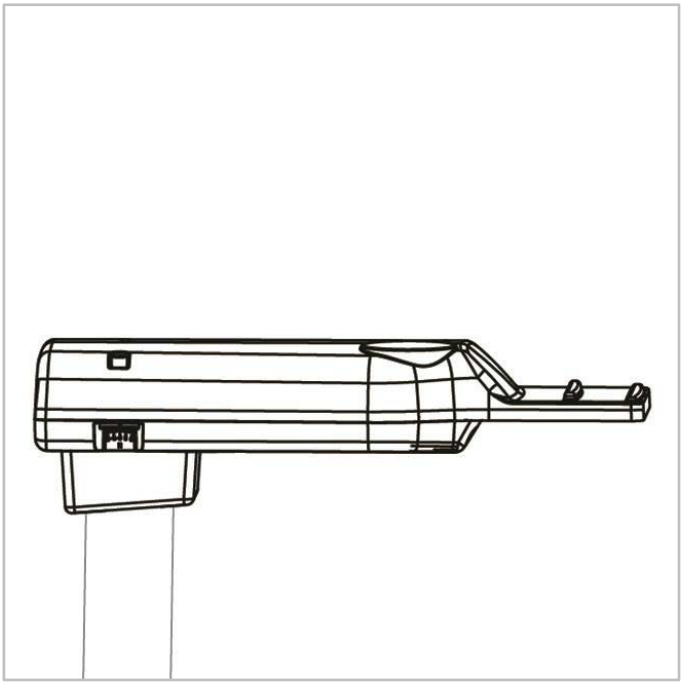
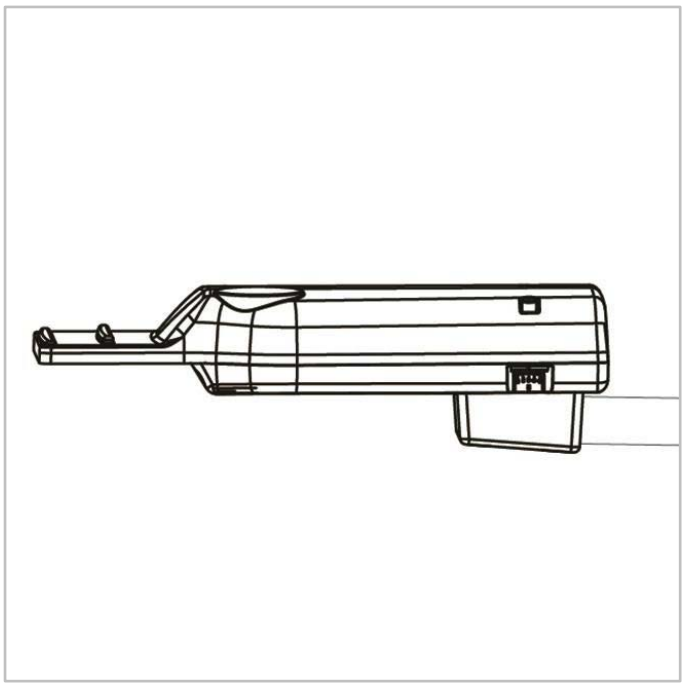
AXIA 3 | Post-top - Slip-over mounting for Ø60 or Ø76mm spigot - 2xM10 screws



AXIA 3 | Side-entry - Slip-over mounting for Ø32 (with accessory) or Ø42-60mm spigot - 2xM10 screws



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AXIA 3.1

Photometry

PRO FLEX™

	Luminaire output flux (lm)						Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 727		Warm White 730		Neutral White 740				
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Up to
8	600	2500	700	2600	800	3000	8	23	147
16	900	5100	900	5400	1100	6100	11	44	153

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %

AXIA 3.2

Photometry

PRO FLEX™

	Luminaire output flux (lm)						Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 727		Warm White 730		Neutral White 740				
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Up to
24	2000	8400	2100	8800	2400	9900	15	76	165
32	2700	9500	2800	9900	3200	11300	20	78	170

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %

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AXIA 3.3

Photometry

PRO FLEX™

	Luminaire output flux (lm)						Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 727		Warm White 730		Neutral White 740				
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Up to
48	4000	14800	4200	15600	4800	17700	29	129	175
64	5300	19800	5600	20800	6400	23600	38	170	177

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %

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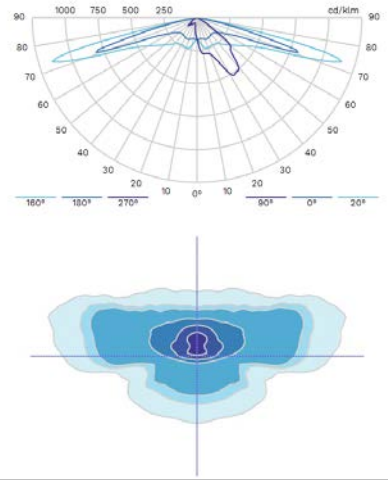
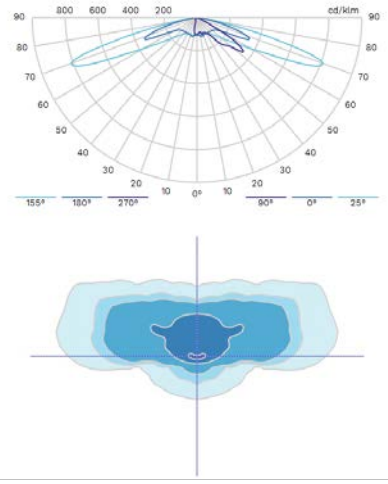
5266



PRO FLEX™

5267 Rear louvers



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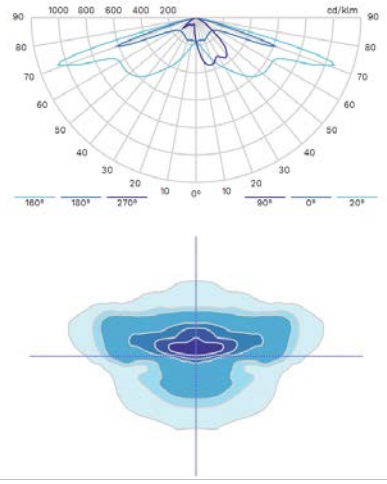
5270



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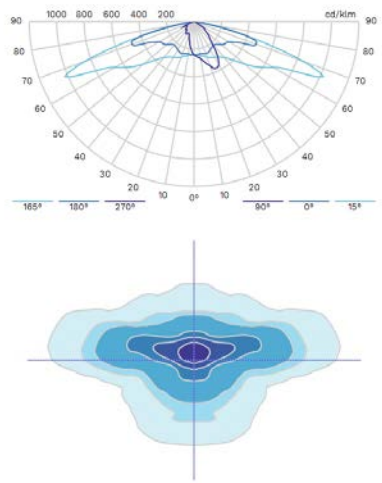

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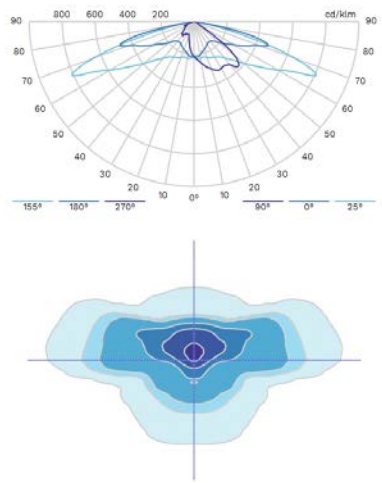

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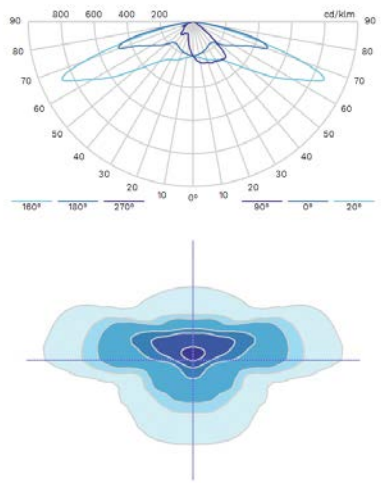
5280



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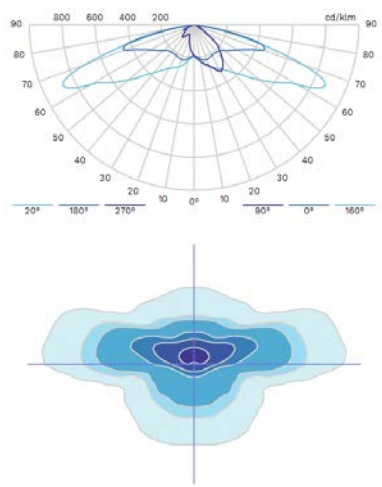

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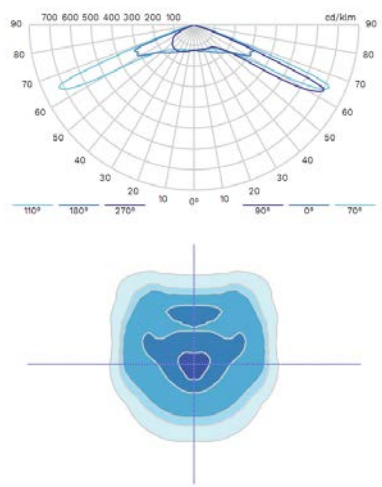
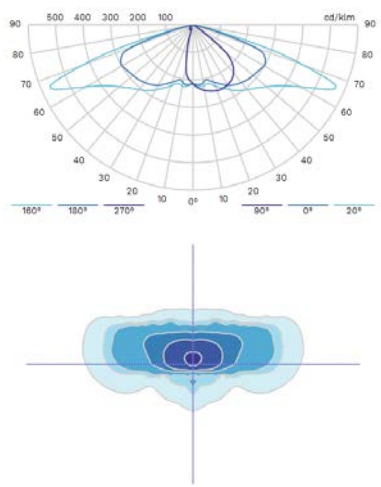


PRO FLEX™

5294 Rear louvers



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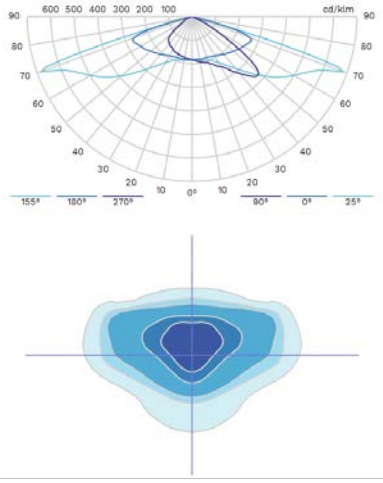

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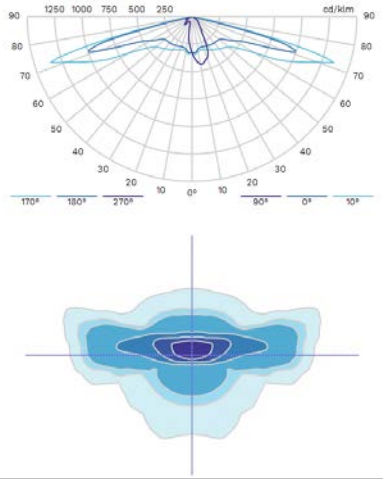

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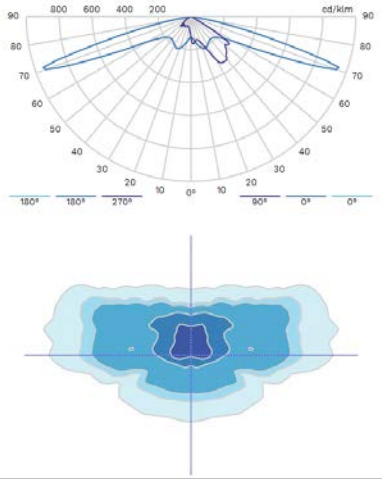

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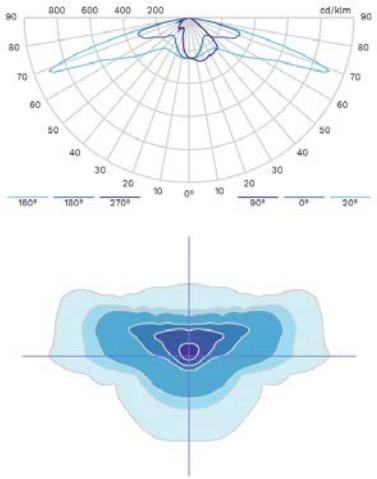

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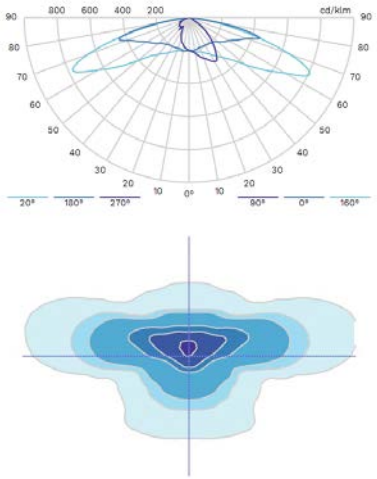

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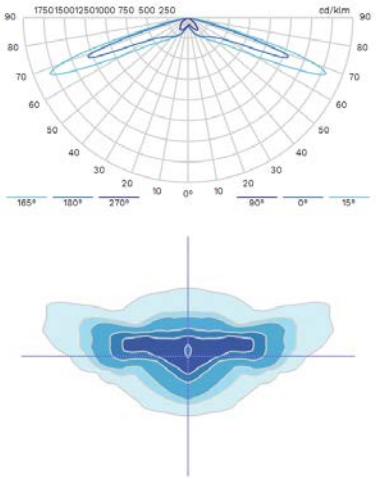

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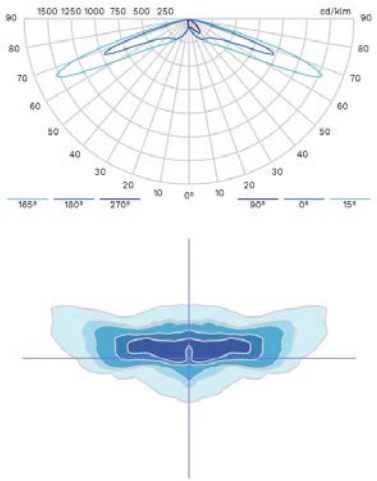

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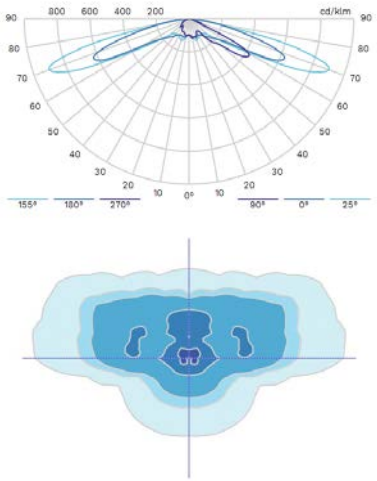

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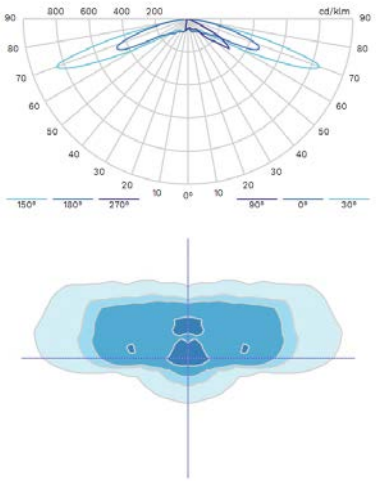

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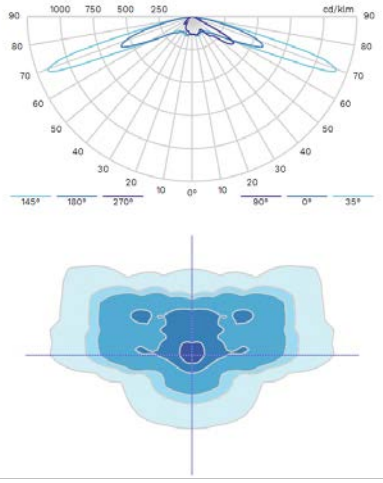

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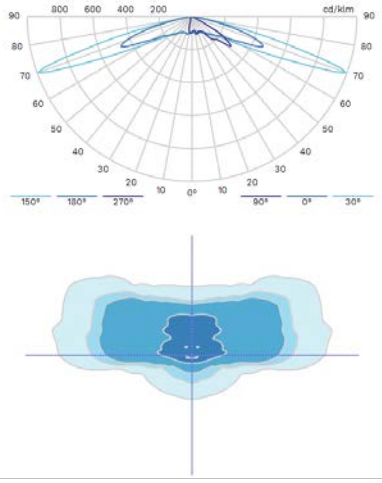

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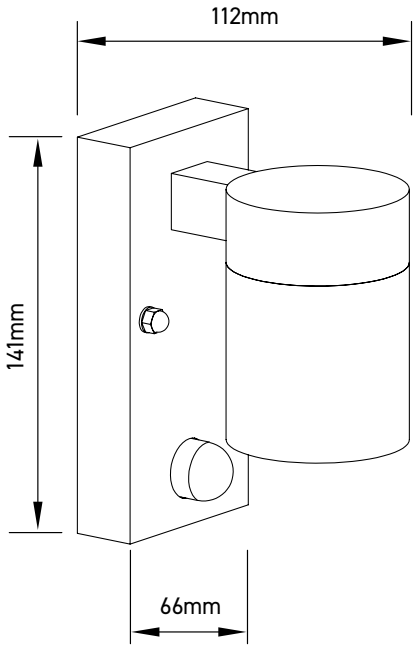
Outdoor & Security Lighting

Bransford Wall Light with PIR & Photocell

GL-203/BLK
Black

GL-203/SS
316 Stainless Steel



Specification

Voltage	230V
Wattage	5W
Lamp	incl.1 x 5W LED GU10
Colour Temp.	2700K
Lumens	495lm
IP Rating	IP44
Detection Range	6m/90°
Material BLK	Aluminium with Black Finish
SS	316 Stainless Steel

Description

The GL-203 wall light is PIR activated, illuminating when movement is detected to provide light and security throughout the night.

Further information please contact **sales@gl-e.uk** or call **01905 610200**

PHILIPS

Lighting

MASTER LEDspot ExpertColor MV

G A↑G

MASLED ExpertColor5.5-50W GU10 927 36DUK

MASTER LEDspot MV ExpertColor creates a warm and comfortable ambience for hospitality venues, homes and restaurants. It creates ambience with superior lighting that has a customised spectrum, high CRI and deep dimming features. The result? A beautiful lighting experience. What's more, the innovative, trimless lens design will also suit almost any interior decor with its clean and neat look. In addition, you can take advantage of the full ExpertColor family, which also includes LEDspot LV lamps.

Product data

General Information	
Cap base	GU10 [GU10]
Nominal lifetime	40,000 h
Switching Cycle	50,000
Lighting Technology	LED
EU RoHS compliant	Yes
Flux measurement reference	Narrow Cone

Light Technical	
Colour Code	927 [CCT of 2700K]
Beam angle (nom.)	36 degree(s)
Luminous Flux	355 lm
Luminous intensity (nom.)	800 cd
Colour designation	Warm White (WW)
Correlated Colour Temperature	2700 K
Luminous efficacy (rated) (nom.)	64 lm/W
Colour consistency	<3
Colour rendering index (CRI)	97

LLMF at end of nominal lifetime (nom.)	70 %
Luminous flux in 90° cone (rated)	355 lm
Flickering value (PstLM)	1
Stroboscopic effect	0.4
Photobiological safety according to EN 62471	RG1

Operating and Electrical	
Line Frequency	50 to 60 Hz
Input frequency	50 to 60 Hz
Power Consumption	5.5 W
Lamp current (nom.)	30 mA
Wattage equivalent	50 W
Starting time (nom.)	0.5 s
Warm-up time to 60% light	0.5 s
Power Factor (Fraction)	0.8
Voltage (nom.)	220-240 V

MASTER LEDspot ExpertColor MV

Temperature	
T-Case maximum (nom.)	80 °C

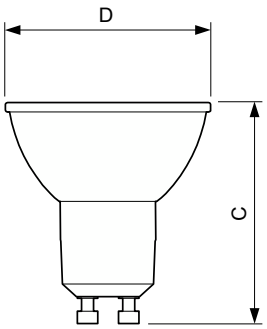
Controls and Dimming	
Dimmable	Only with specific dimmers

Mechanical and Housing	
Bulb shape	PAR16 [PAR 2 inch/50 mm]

Approval and Application	
Energy Efficiency Class	G
Suitable for accent lighting	Yes
Energy consumption kWh/1,000 hours	6 kWh
EPREL registration number	775827
EyeComfort	Yes

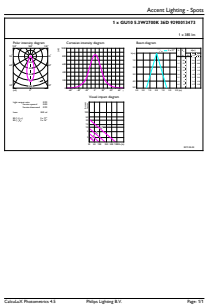
Product Data	
Full EOC	871869670767801
Order product name	MASLED ExpertColor5.5-50W GU10 927 36DUK
Order code	70767801
SAP numerator – quantity per pack	1
Numerator – packs per outer box	10
Material number (12NC)	929001347398
Full product name	MASLED ExpertColor5.5-50W GU10 927 36DUK
EAN/UPC - Case	8719514405790

Dimensional drawing

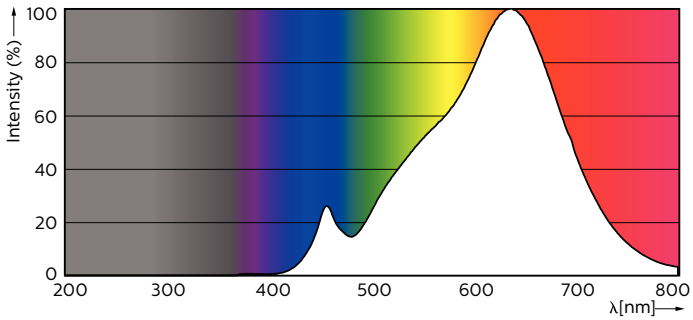


Product	D	C
MASLED ExpertColor5.5-50W GU10 927 36DUK	50 mm	54 mm

Photometric data



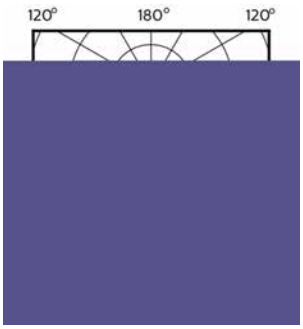
Accent Lighting Spots - MASLED ExpertColor5.5-50W GU10 927 36DUK



Spectral Power Distribution Colour - MASLED ExpertColor5.5-50W GU10 927 36DUK

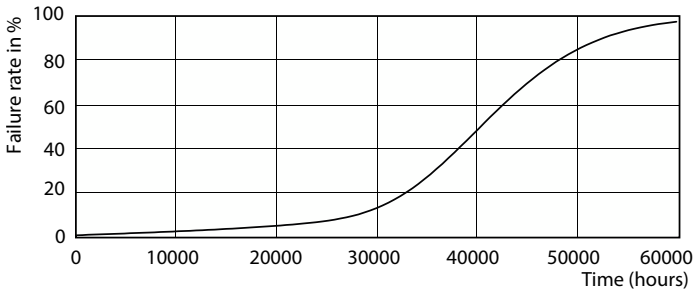
MASTER LEDspot ExpertColor MV

Photometric data

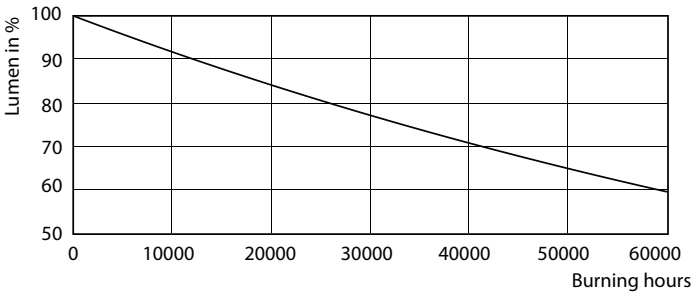


Light Distribution Diagram - MASLED ExpertColor5.5-50W GU10 927 36DUK

Lifetime



Life Expectancy Diagram - MASLED ExpertColor5.5-50W GU10 927 36DUK



Lumen Maintenance Diagram - MASLED ExpertColor5.5-50W GU10 927 36DUK

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THE LIGHTING BEE

APPENDIX I

Lighting Terminology and Abbreviations

Lighting Terminology and Abbreviations

Glossary of Terms

For the purpose of this report, the definitions given below apply. For further definitions the International Lighting Vocabulary (ILV), published by the CIE, can be found at http://eilv.cie.co.at/

Colour Rendering Index (CRI): A scale of the colour appearance of an object under a particular light source compared to its colour appearance under a reference light source. Expressed on a scale of 1 to 100 Ra, where 100 Ra represents the colour rendering of natural daylight i.e. perfect colour.

Curfew: The time after which stricter requirements (for the control of obtrusive light) will apply; often a condition of use of lighting applied by a government controlling authority, usually the local government (CIE, 2003).

Disability Glare: Glare which impairs the vision of objects but may not cause discomfort.

Discomfort Glare: Glare causing discomfort which may not impair the ability to see objects.

Environmental Zones: Area where specific activities take place or are planned and where specific requirements for the restriction of obtrusive light are recommended. Zones are indicated by the zone rating (E1… E4) (CIE, 2003).

Illuminance: Illuminance is the quantity of light, or luminous flux, falling on a unit area of a surface. It is designated by the symbol E. The unit is the lux (lx). One lux equals one lumen per square metre (lm/m²).

Horizontal Illuminance: Illuminance incident on a horizontal surface or calculation plane.

Vertical Illuminance: Illuminance incident on a vertical surface or calculation plane.

Isolux Diagram: A diagram showing lines joining points of equal illuminance. Sometimes also referred to as Isolines.

Light Pollution: The spillage of light into areas where it is not required.

Light Intrusion: Light that impacts on a surface outside of the area designed to be lit by a lighting installation.

Obtrusive Light: Spill light which because of quantitative, directional or spectral attributes in a given context, gives rise to annoyance, discomfort, distraction or a reduction in the ability to see essential information (CIE, 2003).

Photocell: A unit which senses light to control luminaires.

Residential Property: Land upon which a dwelling exists (CIE, 2003).

Sky Glow: The brightening of the night sky caused by artificial lighting resulting from the reflection of radiation (visible and non-visible), scattered from the constituents of the atmosphere (gas molecules, aerosols and particulate matter), in the direction of observation. It comprises two separate components as follows:

(a) *Natural sky glow* - That part of the sky glow which is attributable to radiation from celestial sources and luminescent processes in the Earth's upper atmosphere.

(b) *Man-made sky glow* - That part of the sky glow which is attributable to man-made sources of radiation (e.g. outdoor electric lighting), including radiation that is emitted directly upwards and radiation that is reflected from the surface of the Earth (CIE, 2003).

Spill Light (Stray Light): Light emitted by a lighting installation which falls outside the boundaries of the property for which the lighting installation is designed (CIE, 2003).

Upward Light Ratio: The maximum permitted percentage of luminaire flux for the total installation that goes directly into the sky.

Abbreviations

CIBSE	Chartered Institution of Building Services Engineers
CIE	International Commission on Illumination
CNEA	Clean Neighbourhoods and Environment Act
ILP	Institution of Lighting Professionals
SLL	Society of Light and Lighting

The Lighting Bee Ltd

Lighting Design | Impact Assessment | Daylight Analysis

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